The National Research & Development Institute for Textiles and Leather

Institutul Național de Cercetare-Dezvoltare pentru Textile şi Pielărie

Annual Report 2008

Raport Anual 2008

2009 Strategic Objectives

2009 Obiective Strategice

Annual Report 2008
Raport Anual 2008

2009 Strategic Objectives
2009 Obiective Strategice

The National Research & Development Institute for Textiles and Leather

Institutul Național de Cercetare-Dezvoltare pentru Textile şi Pielărie

Raport Anual 2008. Obiective Strategice 2009
Institutul Național de Cercetare-Dezvoltare pentru Textile şi Pielărie
VOL. 1, 2009

ISSN 1843-0236

Coordonator:
Emilia Visileanu

Autori:

Textile:
Emilia Visileanu, Carmen Ghituleasa, Sorina Pestritu, Carmen Mihai, Alexandra Ene, Doina Toma, Angela Dorogan, Alina Popescu, Daniela Bucur, Claudia Niculescu, Adrian Salistean, Mihai Stan, Adina Iftode, Lilioara Surdu, Marilena Niculescu, Mariana Vamesu, Laura Chiriac, Adriana Subtirica, Gheorghe Nicula, Radu Popescu, Floarea Bumbas, Elena Vancea, Adela Marin, Marius Iordanescu, Elena Musatoiu, Aurelia Guramulta

Pielarie:
Luminita Albu, Viorica Deselnicu, Ioana Pivniceru, Gheorghe Coara, Doina Serb, Gabriel Zainescu, Laurentia Alexandrescu, Viorica Rosculet, Marilena Pop, Dana Deselnicu, Adriana Gorincu, Dana Gurau

Tehnoredactare:
Emilia Visileanu, Radu Popescu, Adrian Salistean, Razvan Radulescu

Grafica:
Florin Prisecaru

Traducere:
Catalina Clinciu, Simona Stefanescu, Doina Puicea, Marius Iordanescu

Editura Certex

Table of Contents

1 Foreword

During the year 2008, INCDTP carried out an intense research – development activity at the national and the European level, as part of about 126 RDI projects, a fact that confirms the position held by the institute within the research networks within Romania and European Union.
INCDTP made itself known as a strong supporter of the research-innovation activity in the textile-leather field by actively getting involved, as a member, in about 37 RDI organizations and professional associations from Romania and worldwide.
The rigorous and constant efforts of the whole personnel got substantiated, in 2008, by obtaining 34 awards and distinctions, out of which: 8 at the national level and 26 at the international level.
The special emphasis on innovation and technologic transfer is demonstrated by the granting, in 2008, of 11 patents and the requests of 15 patent applications.
The infrastructure of technologic transfer was consolidated by obtaining the functioning authorization for the Business Incubator ITA TEXCONF, with 7 incubated SMEs and the POS-CCE accessing - the Priority Axis 2 – Competitiveness by research, technologic development and innovation, as well as the Operation 2.3.1. – Support for the innovative start-ups and spin-offs, by means of the project "Innovative spin-off for the medical devices made of textile" materials, currently in the evaluation process.
The disseminating of the research activity results was achieved at multiple levels, through participation at:
• national scientific events: 84
• international scientific events: 106
• delivering of scientific reports and accounts: 185
• participation in invention and innovation showrooms: 7
• participation in fairs: 10
• the Innovation Caravan: 6 etc
The micro production and service activity, correlated to a professional and efficient marketing, attracted over 180 new beneficiaries, contributing to the turnover increasing by about 20%.
The "Industria Textila" (Textile Industry) magazine, ISI rated since 2007, has continued the campaign of attracting important personalities into the editorial team and as authors, and increasing its impact degree, both nationally, and internationally.
The human resource, which is efficient and active, knew – during 2008 – a specialization revigorating by way of master's degrees – 11 persons and doctor's degrees – 27 persons, and also rejuvenation by employing over 18 young persons under 35 years old.
The economic crisis anticipated for the period 2009 – 2010 imposes the utterly efficient exploitation of all the opportunities at the research and connected activity level, a context within which the INCDTP disposes of the force and energy needed for activating the strategic programme elaborated for this purpose.

In cursul anului 2008, I.N.C.D.T.P. a desfasurat o activitate intensa de cercetare-dezvoltare la nivel national si european, in cadrul a cca 126 de proiecte de CDI, ceea ce confirma pozitia detinuta de institut in cadrul retelelor de cercetare din Romania si din Uniunea Europeana. I.N.C.D.T.P. s-a afirmat ca un puternic sustinator al activitatii de cercetare-inovare in domeniul textile-pielarie, prin participarea activa in calitate de membru, in cca 37 de organizatii de CDI si asociatii profesionale din tara si din lume.
Eforturile riguroase si constante ale intregului personal s-au materializat, in anul 2008, prin obtinerea a 34 premii si distinctii, dintre care: 8 - la nivel national şi 26 - la nivel international.
Accentul deosebit care s-a pus pe inovare si pe transferul tehnologic este demonstrat prin obtinerea, in anul 2008, a 11 brevete de inventii si prin depunerea a 15 cereri de brevete de inventii. Infrastructura de transfer tehnologic a fost consolidata prin obtinerea avizului de functionare a Incubatorului de afaceri ITA TEXCONF, cu 7 IMM-uri incubate si accesarea POS-CCE – Axa Prioritara 2 – Competitivitate prin cercetare, dezvoltare tehnologica si inovare, precum şi Operatiunea 2.3.1 – Sprijin pentru start-up-urile si spin-off-urile inovative, prin proiectul "Spin-off inovativ pentru dispozitive medicale din materiale textile", aflat in curs de evaluare.
Diseminarea rezultatelor activitatii de cercetare s-a realizat pe multiple planuri, prin participarea la:
• manifestari stiintifice nationale – 84;
• manifestari stiintifice internationale – 106;
• sustinerea de referate si comunicari stiintifice – 185;
• participarea la saloane de inventii si inovatii – 7;
• participarea la targuri nationale si internationale – 10;
• Caravana Inovarii - 6 etc.
Activitatea de microproductie si servicii, corelate cu un marketing profesionist si eficient, a atras peste 180 de beneficiari noi, contribuind la cresterea cifrei de afaceri cu cca 20%.
Revista "Industria Textila", cotata ISI, a continuat campania - din anul 2007 - de atragere a unor importante personalitati in colectivul de redactie si in calitate de autori, de crestere a gradului de impact al acesteia, atat pe plan national, cat si international.
Resursa umana, eficienta si activa, a cunoscut - in anul 2008 - o revigorare a gradului de specializare, prin masterate – 11 persoane si doctorate - 27 de persoane, dar si o intinerire, prin angajarea a peste 18 tineri, sub 35 ani.
Criza economica anticipata pentru perioada 2009-2010 impune exploatarea cu maxima eficienta a tuturor oportunitatilor la nivel de cercetare si activitati conexe, context in care I.N.C.D.T.P. dispune de forta si energia necesara activarii Programului strategic elaborat in acest scop.

General Director Dr. Eng. Emilia Visileanu

2 Activity Objective

I.N.C.D.T.P. - Bucharest constituted through H.G. 1304/25.11.1996 from Research Institute for Textiles and Research Institute for Leather and Footwear.

The institute develops scientific research activities and technological development activities, achieving in specific field the technological and technical objectives of the National Program of Scientific Research and Technological Development.

Activity objective: Activity objective of the I.N.C.D.T.P., according to H.G.1413/2004 contains:

A. Research-development-innovation activities:

a) as part of the National Program for Research-Development and Innovation:

1. *Fundamental basic* and oriented research achieved with purpose of growth and profound study on the level of the technical-scientific knowledge about fundamental processes for textiles, leather and rubber processing;

2. *Applied research* for developing or accomplishing of new products, technologies and services for textile, leather-footwear industry and other rubber consumers` goods:

• the elaboration and achieving of the generic technologies as a support for applied researches in chemistry field: the accomplishment of new textile fibers and yarns, dyes, chemical auxiliary products;

• the diminishing of the environment pollution through technologies of textiles, leather and rubber waste turning into treatment of the effluent water, using the Best Available Technologies-BAT principals and Integrated Prevention Pollution Control- I.P.P.C., in textile and leather industry;

• bio-technologies;

• the accomplishing of performant textiles, leather and polymer materials meant for protection and/or training garments;

• the developing and accomplishing of textile woven and nonwoven fabrics, leather and technological use substitute for civil and industrial buildings, agriculture, transport, chemistry, metallurgy, oil-chemistry, mining industry;

• biocompatible and biodegradable medical article meant for human and veterinary medicine ;

• the designing and accomplishing of systems and equipments for national defence : parachute for personal air-borne troops, parachute systems having buffing platform for military techniques air-borne troops, safety parachutes, rescue, survival and camouflage means and systems, special footwear etc.;

I.N.C.D.T.P. – Bucuresti s-a constituit prin H.G. 1304/25.11.1996 din Institutul de Cercetari Textile si Institutul de Cercetari Pielarie – Incaltaminte. Institutul desfasoara activitati de cercetare stiintifica si dezvoltare tehnologica, realizand in domeniul specific, obiectivele tehnice si tehnologice ale Programului National de Cercetare Stiintifica si Dezvoltare Tehnologica.

Obiectul de activitate: Obiectul de activitate al I.N.C.D.T.P., in conformitate cu H.G.1413/2004, cuprinde, in principal:

A. Activitati de cercetare – dezvoltare – inovare:

a) in cadrul Planului National pentru Cercetare-Dezvoltare si Inovare:

1. *Cercetare fundamentala* de baza si orientata, realizata in scopul cresterii si adancirii nivelului cunostintelor tehnico-stiintifice despre procesele fundamentale de prelucrare textila, pielarie si cauciuc;

2. *Cercetare aplicativa* pentru perfectionarea sau realizarea de produse noi, tehnologii si servicii pentru industria textila, pielarie-incaltaminte si bunuri de consum din cauciuc:

• elaborarea si realizarea de tehnologii generice cu rol de suport pentru cercetari aplicative in domeniul chimiei: obtinerea de noi fibre si fire textile, coloranti, produse auxiliare chimice;

• reducerea poluarii mediului inconjurator prin tehnologii de valorificare a deseurilor textile, de piele si cauciuc, tratarea apelor reziduale, adaptarea principiilor Best Available Technologies-BAT si Integrated Prevention Pollution Control – I.P.P.C., in industria textila si de pielarie etc.;

• biotehnologii;

• realizarea de materiale textile performante, din piele si polimeri, destinate echipamentelor de protectie si/sau instructie;

• dezvoltarea si realizarea de materiale textile tesute si netesute,piei si inlocuitori destinate constructiilor civile si industriale, agriculturii, transporturilor, chimiei, metalurgiei, petrochimiei, industriei extractive etc.;

• articole medicale biocompatibile si biodegradabile, destinate medicinii umane si veterinare;

• proiectarea si realizarea unor sisteme si echipamente pentru apararea nationala: parasute pentru desant personal, sisteme de parasuta cu platforma amortizoare pentru desantarea tehnicii militare, parasute de siguranta, mijloace si sisteme de salvare, supravietuire si camuflare, incaltaminte speciala etc.;

2 Activity Objective

• designing and accomplishing of laboratory apparatus and technological equipment for textile, leather and footwear industry;
• uses of the information technology in textile, leather-footwear and rubber consume goods;
• the investigation of fibers, yarns, woven, knitted, nonwoven articles, composite leather and substitutes, in conformity with national standards harmonized with European ones, product technical specification etc;
• the harmonizing on Romanian and European standards and/or ISO and drawing up of new standards, investigation methods of raw material quality, auxiliary products and textile, leather and rubber finish products.

b) other scientific research and technological development activities:

• technological development (pre-competitive and/or competitive research) containing activities of using transferring the research results to economic agents:
• the up-dating of existing technologies in textiles, leather-footwear and rubber consumer` goods industry;
• the growth of automatization and information up-dating level of technological process and technical-productive activities;
• the rational usage of material, power and human resources;
• the implementation of quality management, environmental and hazard systems in industry;
• the supplying of informatic system of designing textile, material, leather and rubber fabric structures, of printing patterns, models and footwear prints, monitoring and programming of production.

c) within sectorial plan and core C-D program:

The re-launching and increasing the textiles and leather–footwear industry by technical, economic and market studies, designing and accomplishing of new products and technologies that hint at the competition and integration level rising to the European Union level.

d) within the European programs by being included in the thematic domains of the C-D-I Frame Program

B. Activities related to the research-development activities, carried on within the own activity field with the Coordinating Ministry approval and the endorsement of the research-development state authority and, if case be that, of the abilitated institution, consisting in:

a) taking part in the field strategy elaboration:

The elaboration of strategies, diagnosis studies and prognosis regarding the development of textile, leather-footwear industry within the context of international tendencies, the

• proiectarea si realizarea de aparate de laborator si utilaje tehnologice pentru industria textila si pielarie incaltaminte;
• aplicatii ale tehnologiei informatiei in industria textila, pielarie - incaltaminte si bunuri de consum din cauciuc;
• investigarea fibrelor, firelor, articolelor tesute si tricotate, netesute, compozite, piele si inlocuitori, in conformitate cu standardele europene armonizate, nationale, specificatii tehnice de produs etc.;
• armonizarea standardelor romanesti cu cele europene si/sau ISO si elaborarea de standarde noi privind metodele de investigare a calitatii materiilor prime, produselor auxiliare si produselor finite din textile, piele, cauciuc.

b) alte activitati de cercetare stiintifica si dezvoltare tehnologica:

• dezvoltare tehnologica (cercetare precompetitiva si/sau competitiva) cuprinzand activitati de aplicare si transfer al rezultatelor cercetarii catre agentii economici:
• modernizarea tehnologiilor existente in industria textila, pielarie-incaltaminte, bunuri de consum din cauciuc;
• cresterea gradului de automatizare si informatizare a proceselor tehnologice si a activitatilor tehnico-productive;
• folosirea rationala a resurselor materiale, energetice si umane;
• implementarea sistemelor de management al calitatii, de mediu si de risc in industrie;
• furnizarea de sisteme informatice de proiectare a structurilor de materiale textile, piele si cauciuc, a desenelor de imprimare, modele, tipare de incaltaminte, de urmarire si programare a productiei.

c) in cadrul planurilor sectoriale si a programului nucleu de C-D:

Relansarea si cresterea competitivitatii industriei textile si de pielarie incaltaminte prin studii tehnice, economice si de piata, proiectare si realizare de produse si tehnologii noi care vizeaza cresterea nivelului de competitivitate si integrare la nivelul Uniunii Europene.

d) in cadrul programelor europene, prin inscrierea in ariile tematice ale Programelor Cadru de C-D-I

B. Activitati conexe activitatii de cercetare - dezvoltare, desfasurate in domeniu propriu de activitate, cu aprobarea ministerului coordonator si cu avizul autoritatii de stat pentru cercetare – dezvoltare si, dupa caz, cu autorizarea institutiilor abilitate, constand in:

a) participarea la elaborarea strategiei domeniul:

Elaborarea de strategii, studii de diagnoza si prognoza privind dezvoltarea industriei textile si pielarie-incaltaminte, in

evolution and development of the raw material basis, the textile, leather and rubber product market, tendencies and achievements in the processing technology field, equipment, machinery and installation for the textile and leather-footwear industry, the impact on environment of the textile and leather-footwear industry.

b) the professional training and specializing:

• courses of professional training and re-training and improving at medium and superior level, in the following fields: technologies, laboratory analyses, implementation of management system;

• professional training at the post-graduate and doctorate level.

c) the specialized consulting and assistance:

• technical–economic analysis studies regarding investments;

• production cost evaluation;

• competitivity level evaluation of production in textile and leather-footwear industry;

• evaluation of the technological processes impact on the environment;

• testing and analysis methods and procedures;

• activity organizing according to the concept of quality ensuring corresponding to standard requirements from the series ISO 9000, EN 17025, ISO 14000 and quality control laboratory endowing.

d) the editing and printing of the specialty publications:

Specialty magazines, engineer books and manuals, dictionaries, catalogues, booklets, guide-books, procedures, leaflets, offers etc.

e) services:

• scientific and technological services for interested beneficiaries by delivering data bases specific to textile and leather-footwear industry, for: raw material, dyes, auxiliary products, accessories, machinery and equipment, technologies, power consumptions, textiles, leather waste and

contextul tendintelor pe plan mondial, evolutia si dezvoltarea bazei de materii prime, piata de produse textile, piele si cauciuc, tendinte si realizari in domeniul tehnologiilor de prelucrare, utilajelor, masinilor si instalatiilor pentru industria textila si de pielarie, impactul industriei textile si de pielarie-incaltaminte asupra mediului inconjurator.

b) formarea si specializarea profesionala:

• cursuri pentru calificare / recalificare profesionala si perfectionare, de nivel mediu si superior in domeniile: tehnologii, analize de laborator, implementarea sistemelor de management;

• pregatire profesionala de nivel postuniversitar si doctorat etc.

c) consultanta si asistenta de specialitate:

• studii de analiza tehnico - economica a investitiilor;

• evaluarea costurilor de productie;

• evaluarea gradului de competitivitate a productiei in industria textila si de pielarie - incaltaminte;

• evaluarea impactului proceselor tehnologice asupra mediului inconjurator;

• metode si proceduri de testare si analize;

• organizarea activitatii conform conceptului de asigurare a calitatii potrivit cerintelor standardelor din seria ISO 9000, EN 17025, ISO 14000 si dotarea laboratoarelor de control al calitatii.

d)editarea si tiparirea publicatiilor de specialitate:

Reviste de specialitate, carti si manuale ingineresti, dictionare, cataloage, brosuri, ghiduri, proceduri, prospecte, oferte etc.

e) prestari de servicii:

• servicii stiintifice si tehnologice pentru beneficiarii interesati, prin furnizarea de banci de date specifice industriei textile si de pielarie-incaltaminte, pentru: materii prime, coloranti, produse auxiliare, accesorii, masini si utilaje, tehnologii, consumuri

INCDTP Publications

various elastomers;
• textiles, leather-footwear product testing according to Romanian, international and European standards as well as to approved settlements, technical norms or normative approved by authorized state bodies;
• the evaluation of textile and leather product conformity: inspection (according to SR EN 45004 / 97) and product certifyings (according to SR EN 45011 / 99).

f) participation to the technological transfer:

• organization and participation to the exhibitions, fairs, showrooms and national and international technical-scientific manifestation;
• the organizing of infrastructural entities for technological transfer.

g) the manufacturing of sole and small series products within micro-production activity:

• articles meant for strategic fields;
• parachuting equipment and systems for personnel and military technique air –borne trooping;
• technological woven and nonwoven leather articles, polymers for industrial and civil sectors;
• equipment and products for water purging and environment protection;
• medical contact and implementable on human articles;
• individual protection equipment;
• pieces, components and medical-genetic footwear;
• biomaterials based on collagen for pharmaceutics and cosmetics;
• auxiliary products for leather industry;
• rubber shoe-soles;
• laboratory devices for textile fabrics testing and examination.

h) activities of home trade import – export afferent to the activity objective under law condition:

Within its activity objective National Institute collaborates on some research-development activities achievements regarding strategical and national defence fields or can carry on other related activities, with state authority approval for research – development.

In 2006 Organizing Structure has started according to the 11 article stipulations, point b, from the Organizing and Function Regulation of the National Research – Development for Textiles and Leather Institute- I.N.C.D.T.P. Bucharest, approved by H.G. 1463 / 2004, consisting of the following grounds:

energetice, deseuri textile, de piele si diversi elastomeri;
• testarea produselor textile, de piele-incaltaminte, in conformitate cu standardele romanesti, internationale, europene, cat si cu reglementari, norme sau normative tehnice aprobate de organisme abilitate ale statului;
• evaluarea conformitatii produselor textile si din piele prin inspectie (conform SR EN 45004 / 97) si certificari de produs (conform SR EN 45011 / 99).

f) participarea la realizarea transferului tehnologic:

• organizarea si participarea la expozitii, targuri, saloane si manifestari tehnico-stiintifice nationale si internationale;
• organizarea de entitati infrastructurale pentru transfer tehnologic.

g) executia de unicate si serii mici, in cadrul activitatii de microproductie:

• articole destinate unor domenii strategice;
• echipamente si sisteme de parasutare pentru personal si desantare de tehnica militara;
• articole tehnice tesute, netesute, din piele, polimeri pentru sectoare industriale si civile;
• echipamente si produse pentru epurarea apelor si protectia mediului;
• articole medicale de contact si implantabile la om;
• echipamente de protectie individuala;
• piese componente si incaltaminte sanogenetica;
• biomateriale pe baza de colagen pentru farmacie si cosmetica;
• produse auxiliare pentru industria pielariei;
• talpi din cauciuc;
• aparate de laborator pentru testarea si controlul materialelor textile.

h) activitati de comert interior si de import-export aferent obiectului de activitate, in conditiile legii:

In cadrul obiectului sau de activitate, institutul national colaboreaza la realizarea unor activitati de cercetare – dezvoltare privind domeniile strategice si de aparare nationala sau poate desfasura si alte activitati conexe, cu avizul autoritatii de stat pentru cercetare – dezvoltare.

In anul 2006 au fost puse bazele imbunatatirii Structurii Organizatorice, in conformitate cu prevederile art.11, lit.b, din Regulamentul de Organizare si Functionare al Institutului National de Cercetare – Dezvoltare pentru Textile si Pielarie – I.N.C.D.T.P., Bucuresti, aprobat prin H.G. 1463 / 2004, avand in vedere urmatoarele considerente:

2 Activity Objective

• The changing of „Textiles Design Department" into „Designing Anthropometry Department";

• The substitution of the structure „CTT TEXPI Infrastructure Entity" with the „ITA TEXCONF Entity within Innovation and Technological Transfer";

I.N.C.D.T.P. has approved by Administration Council Decision no. 899/01. 03. 2006 the foundation of a „Technological and Business Incubator" for textiles field, like an entity within innovation and technological transfer infrastructure whose activity is mainly orientated to the initiation and development of new innovational enterprises based on advanced technology;

Business Incubator ITA - TEXCONF

• The foundation of the „Public Acquisition Office", according to the stipulations O.G. no.34/2006 concerning the public acquisitions, public works and services concession contract assignment;

• Replacement of the structure „Protection Labour Compartment – PSI" with „Internal Service of Prevention and Protection" according to the stipulations of the security and health labour Law no.319/ 2006.

In 2006 there were finished the exchanging formalities of the Registration Certificat to the Trade Register of the ICPI Branch in concordance with the national institute of Juridical Statute of the I.N.C.D.T.P. Bucharest.

• Modificarea „Departamentului Design Textil" in „Departament Design si Antropometrie";

• Inlocuirea structurii „CTT TEXPI Entitate de infrastructura" cu „ITA TEXCONF – Entitate din infrastructura de inovare si transfer tehnologic".

I.N.C.D.T.P. a aprobat, prin Hotararea Consiliului de Administratie nr. 899/1.03.2006, infiintarea unui „Incubator Tehnologic si de Afaceri" pentru domeniul textil, ca entitate din infrastructura de inovare si transfer tehnologic, a carei activitate este orientata in principal catre facilitarea initierii si dezvoltarii de noi intreprinderi inovatoare bazate pe tehnologie avansata.

• Infiintarea „Biroului de Achizitii Publice" – in conformitate cu prevederile O.G. nr.34/2006 privind atribuirea contractelor de achizitie publica, a contractelor de concesiune de lucrari publice si a contractelor de concesiune de servicii;

• Inlocuirea structurii „Compartimentului de protectia muncii – PSI" cu „Serviciul intern de prevenire si protectie", in conformitate cu prevederile Legii nr. 319/2006 a securitatii si sanatatii muncii.

In anul 2006 au fost finalizate formalitatile de preschimbare a Certificatului de inmatriculare la Registrul Comertului al Sucursalei I.C.P.I., in sensul alinierii acestuia la Statutul juridic de institut national al I.N.C.D.T.P. - Bucuresti.

INSTITUTIONAL, LEGISLATIVE AND SECURITY FRAMEWORK
INSTITUTIONAL FRAMEWORK

At present, global economy passes through great social-economical transformations.

Spheres of influence are thus reshaped and new economical branches emerge, while others downfall or even vanish away; new markets and market leaders are on the wave and economical policies redefine their coordinates.

Romania, integral part of the macro-economical system, is subjected to aforementioned transformations, triggering in this process all the composing structures of every field included.

For the institute, this evolving process has been initiated since early 1996, once with its founding, and will continue until finding the optimal and long-lasting balance.

I.N.C.D.T.P. constitution as national institute, under M.Ed.C.I. (Ministry of Education, Research and Innovation) coordination, took place in 1996 by merging two companies – S.C. CERTEX S.A. Bucharest and S.C. CERPI S.A. Bucharest, businesses with a tradition of over 45 years R&D activity in the textile and leather fields.

Dura lex sed lex

I.N.C.D.T.P. started with a classical organizational structure, based on the R&D activity, characteristic for the 90s. Its activity field was correlated at the time with the economical policies and the human resources taken over by the merge of the two companies, which supposed the implementation of a new management, yet, depending on the existent specializations and qualifications.

If, for around 8 years since its founding in the 1996, the institute operated in optimal conditions with the organizational

CADRUL INSTITUTIONAL, LEGISLATIV SI DE SECURITATE
CADRUL INSTITUTIONAL

In prezent economia mondiala trece prin mari transformari socio-economice.

Se reaseaza astfel sferele de influenta, se contureaza noi ramuri economice in timp ce altele se prabusesc sau dispar, apar noi piete si lideri de piata, se redefinesc politicile economice.

Romania, ca parte integranta a sistemului economic, este supusa acestor transformari antrenand in acest proces toate structurile economice componente din toate domeniile.

Pentru institut, acest proces evolutiv a inceput in 1996, odata cu constituirea sa, si va continua pana la atingerea unui echilibru optim si de durata.

Infiintarea I.N.C.D.T.P. ca institut national, sub coordonarea M.Ed.C.T., a avut loc in 1996 prin fuziunea a doua societati comerciale - S.C. CERTEX S.A. - Bucuresti si S.C. CERPI S.A. - Bucuresti, unitati economice cu traditie de peste 45 de ani in activitatea de cercetare–dezvoltare in domeniul textile–pielarie.

I.N.C.D.T.P. s-a constituit cu o structura organizatorica clasica, de baza pentru activitatea de cercetare-dezvoltare, caracteristica pentru anii ’90, cu un domeniu de activitate in corelare cu politicile economice, caracteristice perioadei respective si cu personalul preluat din fuziunea celor doua societati comerciale, care s-au implementat pe noua structura organizatorica, in functie de specializare si calificare.

Daca de la infiintarea sa, in 1996, institutul a functionat in conditii optime timp de circa 8 ani, cu structura organizatorica adoptata la acea vreme, incepand cu anul 2004 ritmul de innoire s-a accelerat pentru a putea face fata tuturor necesita-

structure adopted, beginning with 2004, the times for renewal speeded up to cope with all the needs and opportunities arisen, in the last two years already taking place two major changes.

The first organizational innovation was put into practice in 2004, consisting in the alignment of its activity object and its organizational structure to the new market context. Once with the extension and specialization of its array of activities, organizational structure re-dimensioning and improvement was a must for I.N.C.D.T.P.

This was re-constructed to adapt to the new requirements by:

- Redefinition of some research departments and introduction of a new research field – clothing design;
- Technology Transfer Department dissolving together with founding, at the same time, CTT TEXPI – infrastructural entity taking over the activity already mentioned;
- Introduction, according to new legal provisions, of the Classified Information Office;
- TEXCERT inclusion into the organizational structure – Products Certification Body, and of CERTINSPECT – Products Inspection Body;
- Optimization of human resources and research monitoring activities by splitting the two compartments and funding an office appointed to monitor the international research activity and opportunities;
- Build up of a new Compartment for Public Internal Auditing;
- Create the position of Quality Manager, for which the person appointed would be in charge with the Department of Quality and the Department of Standardization;
- Pass the responsibility of Chief Mechanics management from the Technical Director to the General Director;
- Activity optimization for the overall Occupational Health and Safety, and either the Firefighting Department, by transferring the guarding activities to the Administrative Service;
- I.C.P.I. branch transforming into a subsidiary and the inclusion within the organizational structure of LUCACI workplace

x

x x

In 2007, a new organizational modernization took place concerning the structure, this including the following changes:

- "Textile Design Department" transformation into the "Department of Design and Anthropometry", for the institute's research activity to be able address new strategic directions

tilor si oportunitatilor aparute. Astfel in ultimii 4 ani, au fost operate deja doua schimbari.

Prima inovare de ordin organizational a fost realizata in anul 2004, prin alinierea obiectului de activitate si a structurii organizatorice la noile conditii economice. Odata cu extinderea si specializarea obiectului de activitate, s-a impus redimensionarea si imbunatatirea structurii organizatrire a I.N.C.D.T.P.

Aceasta a fost reactualizata prin:

- redefinirea unor departamente de cercetare si introducerea unui nou domeniu de cercetare - designul textil;
- desfiintarea departamentului de transfer tehnologic, concomitent cu infiintarea CTT TEXPI – entitate de infrastructura care ii preia activitatea;
- introducerea in structura organizatorica a Biroului Informatii Clasificate, in conformitate cu noile prevederi legale;
- introducerea in structura organizatorica a TEXCERT – Organism de certificare produse si CERTINSPECT – Organism inspectie produse;
- optimizarea activitatilor de resurse umane si de monitorizare cercetare prin separarea celor doua compartimente si infiintarea unui nou birou de monitorizare cercetare internationala;
- infiintarea compartimentului de audit public intern;
- infiintarea postului de Director de Calitate, avand in subordine Departamentul de calitate si Departamentul de standarde;
- trecerea compartimentului mecanic sef din subordinea Directorului Tehnic in subordinea Directorului General;
- optimizarea activitatii compartimentului de Protectia Muncii PSI, prin preluarea activitatii de paza la Serviciul administrativ;
- transformarea filialei I.C.P.I. in sucursala si includerea in structura organizatorica a punctului de lucru LUCACI.

x

x x

In anul 2007, s-a realizat o noua modernizare a structurii organizatorice, cand au avut loc urmatoarele modificari:

- Transformarea departamentului "Design Textil" in "Design si Antropometrie", pentru ca activitatea de cercetare a institutului sa poata aborda directii strategice de cercetare

of research within the European Platform of Technology for Textiles and Clothing, as well as to cover within the ergonomic anthropometry field of interest for research.

Last mentioned will be concerned with anthropometric measurements of the population focused on the anthropometric standards up-dating, on defining new conformations and sizes, highly needed data in clothing design. This type of research activity will be equally directed towards the manufacture of customized and individualized products, of medical devices and protective equipments.

The substantiation of this change was backed by the interruption of research activities regarding body sizes, useful for garments design, taking place in 1990, once with the liquidation of the Workshop for Garments Anthropometric and Constructive Design within the Clothing Center.

- Substitute the structure "CTT TEXPI – infrastructure entity" with "ITA TEXCONF – infrastructure entity for innovation and technology transfer", according to H.G.406/2003 provisions on the approval of Methodological Norms specific for the constitution, operation, evaluation and accreditation of infrastructure entities for innovation and technology transfer and to M.Ed.C.I. Order no. 5039/2003 on the approval of the accreditation procedure for infrastructure entities for innovation and technology transfer. Technology Transfer Agency, within M.Ed.C.I., recommended the founding of another type of entity, respectively an innovative business incubator, because the already constituted technology transfer centers did not prove to be viable.

- Founding of the "Office of Public Acquisitions", in conformity with the provisions of Governmental Order nr. 34/2006, on the assignment of public acquisition contracts, public works concession contracts and services concession contracts.

- Substitution of the "Compartment for Occupational Health and Safety – Firefighting" structure with the "Internal Services of Prevention and Protection", in conformity with Law no. 319/2006 provisions, on occupational health and safety.

x

x x

ale Platformei Tehnologice Europene pentru Textile si Imbracaminte, cum ar fi cercetarea in domeniul antropometriei ergonomice.

In cadrul acestei activitati, se realizeaza masuratori antropometrice ale populatiei, in scopul reactualizarii standardelor antropometrice, a definirii tipurilor de conformatii si a taliilor, date absolut necesare in proiectarea imbracamintei. De asemenea, aceasta activitate de cercetare este indreptata si catre realizarea produselor personalizate, a dispozitivelor medicale si a echipamentelor de protectie.

In fundamentarea acestei modificari s-a tinut cont de faptul ca, in tara, activitatea de cercetare privind dimensiunile corpului pentru proiectarea produselor vestimentare a fost intrerupta in 1990, prin desfiintarea Atelierului de Proiectare Antropometrica si Constructiva pentru Confectii - din cadrul Centralei Confectiilor.

- Inlocuirea structurii "CTT TEXPI - Entitate de infrastructura" cu "ITA TEXCONF – Entitate din infrastructura de inovare si transfer tehnologic", in conformitate cu prevederile H.G. 406/2003, pentru aprobarea Normelor metodologice specifice privind constituirea, functionarea, evaluarea si acreditarea entitatilor din infrastructura de inovare si transfer tehnologic si Ordinul 5039/2003 al M.E.C.T. de aprobare a procedurii de acreditare a entitatilor din infrastructura de inovare si transfer tehnologic. Directia de Transfer Tehnologic din M.Ed.C. a recomandat infiintarea unui alt tip de entitate, si anume a unui centru incubator de afaceri inovativ, deoarece s-a constatat ca centrele de transfer tehnologic deja infiintate nu s-au dovedit a fi viabile.

- Infiintarea "Biroului de Achizitii Publice" – in conformitate cu prevederile O.G. nr.34/2006 privind atribuirea contractelor de achizitie publica, a contractelor de concesiune de lucrari publice si a contractelor de concesiune de servicii.

- Inlocuire structurii "Compartimentului de protectia muncii – PSI" cu "Serviciul intern de prevenire si protectie", in conformitate cu prevederile Legii nr.319/2006 a securitatii si sanatatii in munca.

x

x x

3 Institutional, legislative and security frame

I.N.C.D.T.P. operates at present according to the organizational structure approved by MEC (Ministry of Economy and Commerce) Order no. 594/20.03.2007.

x

x x

2009 Strategy for The Institutional Framework

In the new context of deep economical downturn, a new adaptation is strictly imposed for the situation, a mere rearrangement of the whole activity. Managerial strategy in the field will be basically afoot to keep up with the research nucleus, limit the personnel mainly in the connected activities and reduce the number of compartments/departments.

In this sense, it is foreseen in 2009:

The merge of two units in the organizational structure:

• Documentation Office will be integrated in the Compartment for Information Dissemination, Public Relations and Mass-Media

• Join the Office for Production Monitoring with the Marketing Compartment, and its transforming into an Office for Technology Transfer-RDI-Marketing

•Establishing the Office RDI Monitoring by merge of the Office for International Research Monitoring with the Office for National Research Monitoring

• Establishing of the Department Products and Equipment with Special Destination;

Expand the exploitation degree for the micro-production stations by performing some transformations for their use as school laboratories, proper for the theoretical and practical training of pupil and students in the institute speciality field

Found a Spin-off within the ITA - TEXCONF Business Incubator, specialised on textile medical articles.

Hoping in a successful overcome of present economical crisis, the organizational innovation, component of a performance management, will enable the advance of the entire activity the institute unfolds and to leveling up I.N.C.D.T.P. competitiveness degree, and its integration into ERA NET.

LEGISLATIVE FRAMEWORK

In conformity with the provisions of I.N.C.D.T.P. Bucharest Rules governing Internal Organization and Operation, ap-

I.N.C.D.T.P. functioneaza si in prezent dupa structura organizatorica aprobata prin Ordinul MEC nr 594/20.03.2007.

x

x x

Strategia 2009 in domeniul cadrului institutional

In noul context economic, de profunda criza economica, se impune cu stringenta o noua adaptare la situatia actuala, o reasezare a intregii activitati. Strategia manageriala in domeniu prevede conservarea cu prioritate a nucleului de cercetare, limitarea numarului de personal cu preponderenta din activitatile conexe, reducerea numarului de compartimente/ departamente.

In acest sens, pentru 2009, se preconizeaza:

• integrarea compartimentului de Documentare in cadrul Departamnetuli Diseminare a Informatiilor, Relatii Publice, Mass-Media;

• comasarea compartimentului de Monitorizare-Productie cu cel de Marketing si transformarea acestuia in Compartiment Transfer Tehnologic-CDI-Marketing;

• infiintarea Biroului Monitorizare CDI, care va inlocui compartimentele Birou Moniorizare Cercetare Internationala si Birou Cercetare Monitorizare Nationala;

• Infiintarea Departamentului de Produse si Echipamente cu Destinatie Speciala;

Extinderea gradului de utilizare a statiilor de microproductie, prin transformarea in laboratoare scolare, pentru pregatirea teoretica si practica a elevilor si studentilor din domeniul de specialitate al institutului;

Infiintarea unui Spinn-off in cadrul Incubatorului de afaceri ITA – TEXCONF, orientat pe articole medicale textile.

In conditiile depasirii cu succes a actualei crize economice, inovarea organizationala ca parte componenta a managementului performant - va face posibila evolutia ascendenta a intregii activitati a institutului, ridicarea gradului de competitivitate, integrarea I.N.C.D.T.P. in aria europeana de CDI – ERA NET.

CADRUL LEGISLATIV

In conformitate cu prevederile Regulamentului de organizare si functionare a I.N.C.D.T.P. - Bucuresti, aprobat prin H.G.

proved by Governmental Decision 1463/2004 and the provision of MEdCI Order 1712/22.12.2005, on the approval of I.N.C.D.T.P. Bucharest Organizational Structure, it is constituted and operates, within the National R&D Institute for Textiles and Leather, the Juridical Compartment.

Thus, it assures:

- The observance of legal provisions in force with relevance to the institute's activity unfolding;
- The elaboration and notification of contracts of any nature to which the institute is a signing part;
- The institute's representation in relations with public authorities and defense of its interests;
- The monitoring of modifications and changes in the normative acts with incidence to institute current activity and the informing of specialists having responsibilities in the respective fields

During 2008 fiscal year, I.N.C.D.T.P. activity in the legislative field was focused on:

1) NOTIFICATION AND ELABORATION OF JURIDICAL PAPERS: contracts (buy & sell contracts, services contracts, rental contracts etc.) and documents specific to I.N.C.D.T.P. Bucharest activity, as well as the notification of either internal (decisions etc), or external (contracts coming from the business partners) juridical papers

2) DEBTS RECOVERY AND LITIGATIONS, based on Governmental Order 5/2001, and conformal to Law 85/2006, on the bankruptcy procedure

3) REPRESENTATION IN FRONT OF PUBLIC INSTITUTIONS

Procedures have been followed for the National Office of Trade Register to up-date the institute activity field, according to the National Classification of Economic Activities (CAEN – 2nd Review), on the basis of Order nr. 337/2007 and Registration Certificate was granted on 15.02.2008.

4) SURVEILLANCE FOR THE OBSERVANCE OF PUBLIC ACQUISITION LEGALITY in conformity with the legislation in force

At the end of February 2008, Decision 198/2008 was issued for the change and modification of Norms for applying the provisions referring to public acquisition contracts assigning by electronic means, referred to in OUG 34/2006. According to this – "Starting with 2008, contracting authority has

1463/2004 si a Ordinului Ministrului Educatiei si Cercetarii nr. 1712 din 22.12.2005, privind aprobarea Structurii organizatorice a I.N.C.D.T.P. – Bucuresti, in cadrul Institutului National de Cercetare-Dezvoltare pentru Textile si Pielarie – Bucuresti, este constituit Compartimentul Juridic, care asigura:

- respectarea prevederilor legale in vigoare, care au incidenta in desfasurarea activitatii institutului;
- redactarea si avizarea contractelor de orice natura in care institutul este parte;
- reprezentarea institutului in relatiile cu autoritatile publice si apararea intereselor acestuia;
- monitorizarea modificarilor din actele normative care au incidenta in activitatea curenta a institutului si informarea specialistilor cu responsabilitati in domeniile respective.

Pe parcursul anului 2008 (01.01- 31.12.2008), activitatea I.N.C.D.T.P. in domeniul legislativ s-a axat pe:

1. AVIZAREA SI INTOCMIREA DE DOCUMENTE JURIDICE:

• contracte (contracte de vanzare cumparare, de prestari servicii, de locatiune etc.) si documente specifice activitatii I.N.C.D.T.P. – Bucuresti, precum si avizarea documentelor juridice interne (decizii etc.) si externe (contracte provenind de la partenerii de afaceri).

2. RECUPERAREA DE CREANTE SI LITIGII in baza OG 5/2001, precum si in conformitate cu Legea 85/2006 privind procedura insolventei.

3. REPREZENTARE IN FATA INSTITUTIILOR PUBLICE

Au fost efectuate demersuri la Oficiul National al Registrului Comertului pentru actualizarea domeniului de activitate, conform Clasificarii activitatilor din economia nationala CAEN (Rev.2), in baza Ordinului nr 337/2007 si s-a obtinut noul Certificat de inregistrare in 15.02.2008.

4. SUPRAVEGHEREA RESPECTARII LEGALITATII ACHIZITIILOR PUBLICE, in conformitate cu legislatia in vigoare. La sfarsitul lunii februarie 2008, a aparut Hotararea 198/2008 pentru modificarea si completarea Normelor de aplicare a prevederilor referitoare la atribuirea contractelor de achizitie publica, prin mijloace electronice din OUG 34/2006, conform careia "Incepand cu anul 2008, autoritatea contractanta are obligatia de a utiliza mijloacele electronice

the mandatory obligation of using the electronic means to apply the assigning procedures and to perform the direct acquisitions amounting up to a 20% percent of the total value the public acquisitions performed during the respective year have."

5) STAFF TRAINING AND INFORMING OVER THE WAY THE PROVISIONS SHOULD BE APPLIED REGARDING DIFFERENT NORMATIVE ACTS

In 2008, the use of the legislative software – LEGE 4 from INDACO – continued and proved its helpfulness during the year by the speed in providing the interested persons the normative acts requested with their up-to-date changes and modifications, accompanied by references related to adjacent normative acts.

SECURITY FRAMEWORK

INCDTP implemented a security framework able to assure better protection to research projects results. The security framework was mainly put in place as a consequence of the fact the institute had under progress top secret research projects.

In 2003, INCDTP Managing Board approved the launch into implementation process of the classified information security system, in conformity with the provisions of normative acts in force.

For the period 2004-2006, a security structure was created at the level of INCDTP headquarters, being elaborated the documentation for certification and thus, afterwards, granted the accreditation of the classified information protection system. There were also achieved the Certificates for Industrial Security for the contracts managing top secret classified information and operations like documents inventorying and reassessment was completed for the documents found within the Classified Information Office.

Taking into account that no research project was in progress during 2008 for the top secret category, in INCDTP headquarters, the type of operations conducted were especially aimed to maintain the top secret and classified work activity:

- request of de-classifying agreements for the top secret documents from issuers, other than INCDTP and de-classifying

pentru aplicarea procedurilor de atribuire si pentru realizarea achizitiilor directe intr-un procent de cel putin 20% din valoarea totala a achizitiilor publice efectuate de acesta in cursul anului respectiv".

5. INFORMAREA SI INSTRUIREA PERSONALULUI ASUPRA MODULUI DE APLICARE A PREVEDERILOR DIN DIFERITE ACTE NORMATIVE

In anul 2008 s-a continuat utilizarea softului legislativ - LEGE 4 – realizat de firma INDACO, soft care si-a dovedit utilitatea pe parcusrul anului precedent prin rapiditatea cu care a permis punerea la dispozitia persoanelor interesate, a actelor normative solicitate cu modificarile si completarile la zi, insotite de referinte privind acte normative adiacente acestora.

CADRUL DE SECURITATE

I.N.C.D.T.P. a implementat o structura de securitate, care asigura o mai buna protectie a rezultatelor proiectelor de cercetare. In prinicipal, cadrul de securitate a fost realizat datorita faptului ca I.N.C.D.T.P. a avut in derulare proiecte de cercetare secret de stat.

In anul 2003, Consiliul de Administratie al I.N.C.D.T.P. a aprobat demararea implementarii sistemului de securitate a informatiilor clasificate in conformitate cu prevederile actelor normative in vigoare.

In perioada 2004-2006, la nivelul sediului central al I.N.C.D.T.P. a fost creata structura de securitate, a fost elaborata documentatia in vederea certificarii, s-a obtinut acreditarea sistemului de protectie a informatiilor clasificate, au fost obtinute Certificatele de Securitate Industriala pentru contractele care gestioneaza informatii clasificate nivel secret de stat si a fost finalizata operatiunea de inventariere si reevaluare a nivelului documentelor aflate in cadrul Biroului de Informatii Clasificate.

Tinand cont ca, pe parcursul anului 2008, nu au existat proiecte de cercetare in derulare, incadrate la categoria secret de stat, la nivelul sediului central al I.N.C.D.T.P. s-au efectuat in special operatiuni care au vizat mentinerea activitatii de nivel secret de stat si de serviciu:

- solicitarea de acorduri de declasificare a documentelor secrete de stat catre emitenti, altii decat I.N.C.D.T.P., si trans-

agreements sending for the requests received from other units found in the possession of such documents issued by INCDTP;
- accreditation for the personnel accessing for the first time top secret information in 2008;
- accreditation of the newly hired personnel having access to classified work information;
- organizational measures review related to the physical protection of class I and II security areas, as well as of the administrative area;
- trainings and tests for the personnel, organized on topics referring to the Norms governing internal protection of top secret and classified work information;
- list up-dating for the persons to whom access was given to security area, which is differentiated on the 5 levels of the administrative building;
- assessment and enhancement of physical-informatics protection measures associated to card readers installed in the administrative area access points.

x

x x

For 2009, the existing security structure will be maintained and the security certificates of the personell with acces to classified information will be renewed.

miterea acordurilor de declasificare pentru cererile venite de la alte unitati care detin documente emise de I.N.C.D.T.P.;
- acreditarea pentru personalul care in 2008 a avut pentru prima oara acces la informatii Secrete de Stat;
- acreditarea pentru personalul nou angajat cu acces la informatii Secrete de Serviciu;
- revizuirea masurilor organizatorice privind protectia fizica a zonelor de securitate clasa I si clasa a II-a, precum si a zonei administrative;
- realizarea de instruiri si testari ale personalului privind Normele Interne de protectie a informatiilor Secret de Stat si Secret de Serviciu;
- actualizarea listei persoanelor cu acces in zona de securitate, acces care este diferentiat pe cele 5 niveluri ale cladirii administrative;
- evaluarea si imbunatirea masurilor de protectie fizico-informatice asociate cititoarelor de cartele instalate in punctele de acces din zona administrativa.

x

x x

Pentru anul 2009, se va mentine structura de securitate existenta si se vor reinnoi certificatele de securitate ale personalului cu acces la informatii clasificate.

Anexa la

Ordinul MEC .....

STRUCTURA ORGANIZATORICA

a Institutului National de Cercetare-Dezvoltare pentru Textile si Pielarie - INCDTP Bucuresti

4 Financial Activity

In the year 2008 the turnover achieved by INCDTP was at the level of 23,468 thousand lei.
The evolution of the turnover during the last years, illustrated in the table below
Thousand lei

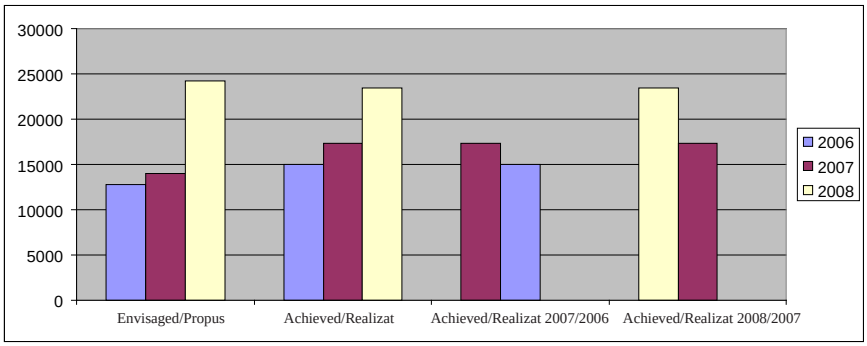
In anul 2008, cifra de afaceri realizata de INCDTP s-a situat la un nivel de 23.468 mii lei. Evolutia cifrei de afaceri, din ultimii ani, este prezentata in tabelul de mai jos:

Mii lei

Year / Anul	Envisaged / Propus	Achieved/ Realizat	%
2006	12766	14993	100,00
2007	14050	17309	115,45
2008	24230	23468	135,58

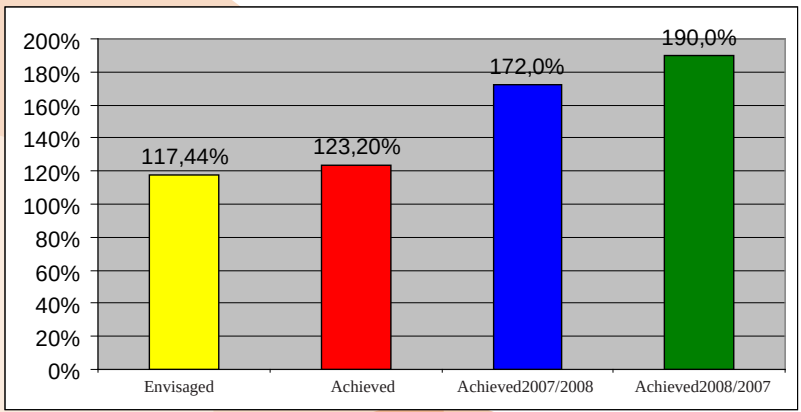
brings forth the fact that, in 2007, this marked an increase of 115.45% as compared to the year 2006, and, in the year 2008, 135.58% as compared to the year 2007.
Graphically, the above numbers look like this :

Se evidentiaza ca, in anul 2007, aceasta a marcat un salt de 115,45%, fata de anul 2006, iar in anul 2008 de 135,58%, fata de anul 2007.
Grafic, aceste cifre sunt ilustrate astfel:



In the years 2006 and 2007 the envisaged incomes were achieved and exceeded by 117.44% and 123.20%, respectively. In the year 2008, the estimated incomes were at the highest level of the last period, namely 172% as compared to the year 2007 and 190% as compared to the year 2006.

In anii 2006 si 2007, veniturile propuse au fost realizate si depasite cu 117,44% si, respectiv, cu 123,20%. In anul 2008, veniturile estimate s-au situat la nivelul cel mai ridicat din ultima perioada, si anume 172% - fata de anul 2007, si 190% - fata de anul 2006.



4 Financial Activity

The structure of the incomes achieved in 2008 comprises the following activities:

- the research-development activity 86.68 %
- the production activity 4.55 %
- the services activity 2.54 %
- other activities 6.23 %

The share increase of the R&D activity within the 2008 turnover confirmed that one of the measures was put in practice for the achievement of 2008-2013 strategy objectives adopted by INCDTP for the period.

The share increment of the research activity income in the total turnover was obtained by:

- participation to competitions organized at the national and international level;
- up-grading of the socio-professional training for the staff working in the research-development area and in connected services;
- development of research and services infrastructure, having as a result the increasing of the general activity performance;
- expenses monitoring and management within projects, contracts or orders;
- marketing activity involvement in fields of research, technologic transfer, innovation and the launch of new products and technologies.

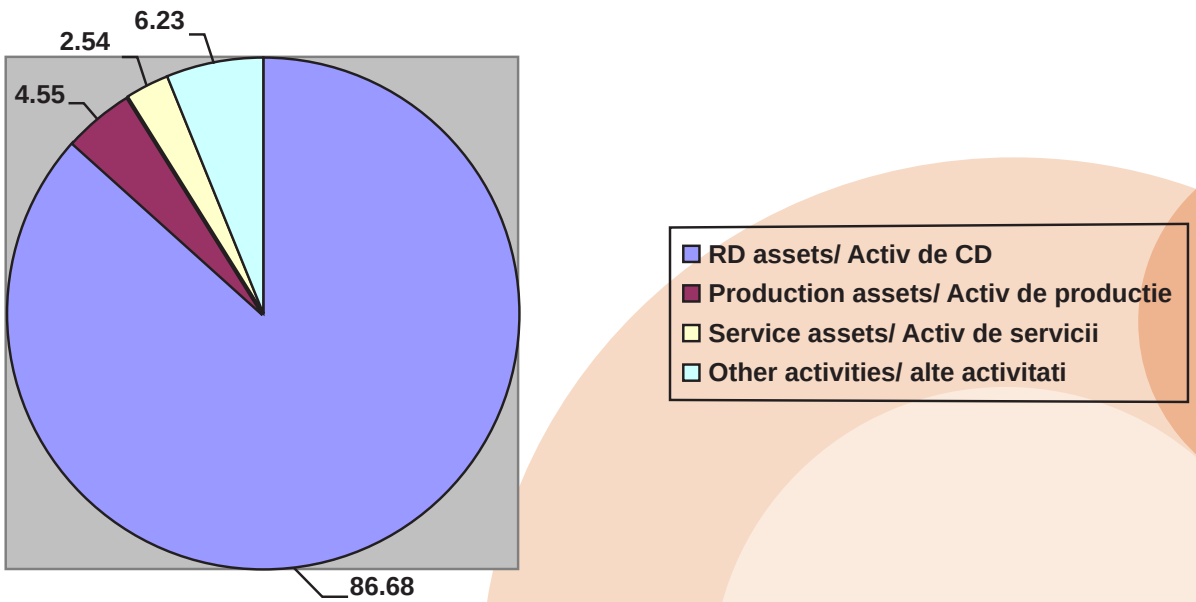
Structura veniturilor realizate in 2008 cuprinde urmatoarele activitati :

- activitatea de CD 86,68%
- activitatea de productie 4,55%
- activitatea de servicii 2,54%
- alte activitati 6,23%

Cresterea ponderii activitatii de CD in cifra de afaceri in anul 2008 a confirmat indeplinirea uneia din masurile de realizare a obiectivelor strategiei pentru perioada 2008-2013, adoptata de INCDTP.

Cresterea ponderii veniturilor din activitatea de cercetare in total cifra de afaceri s-a obtinut prin:

- participarea la competitii organizate la nivel national si international;
- ridicarea gradului de pregatire socio-profesionala a personalului din cercetare-dezvoltare-inovare si din serviciile conexe;
- dezvoltarea infrastructurii pentru cercetare si servicii, avand ca rezultat cresterea performantelor activitatii generale;
- monitorizarea si gestionarea cheltuielilor pe proiecte, contracte sau comenzi;
- implicarea activitatii de marketing in domeniul cercetarii, transferului tehnologic, inovarii si lansarii de produse si tehnologii noi.



Specific activities in the turnover/2008

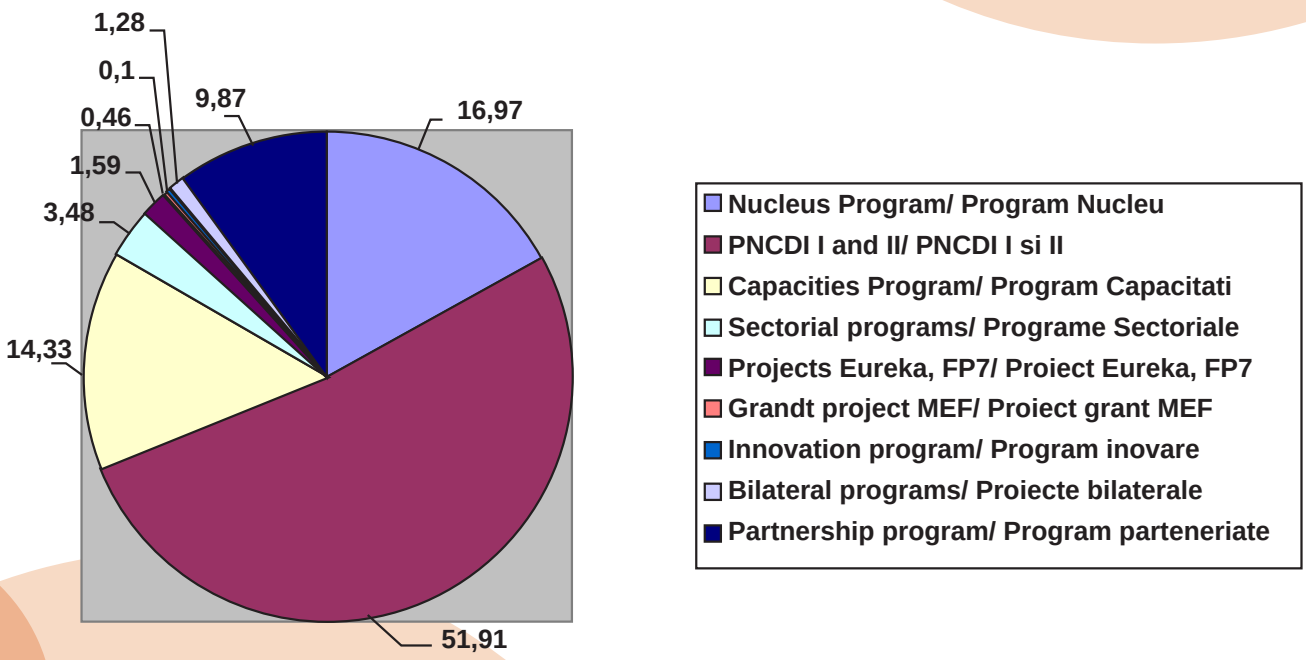
4 Financial Activity

The contribution of various financing sources to the research activity was:

- Nucleus Program	16.97 %
- PNCDI I and II (projects in coordination)	51.91%
- Capacities Program	14.33%
- Partnerships within PNCDI II	9.87%
- Sectorial Programs of MEF	3.48%
- Projects Eureka, FP7 (Pro Crisis)	1.59%
- Grant CNSIS	0.46%
- Innovation program	0.10%
- Bilateral project program	1.28%

In activitatea de cercetare, contributia diverselor surse de finantare a cuprins:

- program nucleu	16,97%
- PNCDI I si II (proiecte in coordonare)	51,91%
- program capacitati	14,33%
- parteneriate in cadrul PNCDI II	9,87%
- programe sectoriale ale MEF	3,48%
- proiecte Eureka, FP VII (Pro Crissis)	1,59 %
- grant CNCSIS	0,46%
- program inovare	0,10%
- program proiecte bilaterale	1,28%



Financing sources of the R&D&I turnover 2008

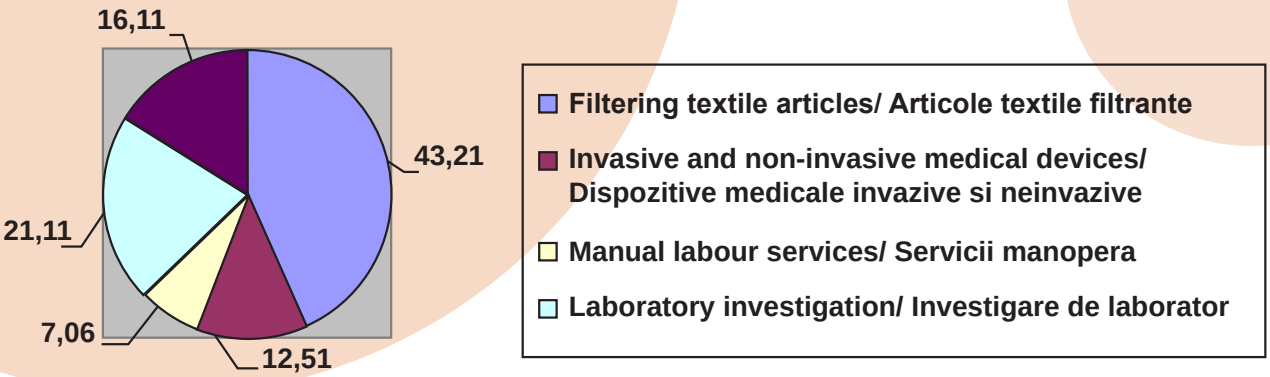
In the production and services activity, the income share was thus structured:

-filtering textile articles	43.21%
- invasive and non-invasive medical devices	12.51%
- manpower services	7.06%
- laboratory research	21.11%
- other	16.11%

In activitatea de productie si servicii, ponderea veniturilor s-a structurat astfel:

- articole textile filtrante	43.21%
- dispozitive medicale invazive si neinvazive	12.51%
- servicii manopera	7.06%
- investigare de laborator	21.11%
- altele	16.11%

4 Financial Activity



The structure of the incomes coming from the activity of production and services

The structure of the investment funds in the year 2008 comprises:

- capital investment acquired by research projects 78.17%
- capital investment acquired by own sources 3.64%
- capital investment acquired by MECI sources 18.19%

The financial year 2008 allowed the obtaining of a gross profit estimated in a value of 1,200 thousand lei.

Structura fondurilor de investitii in anul 2008 cuprinde :

- fonduri fixe achizitionate prin proiecte de cercetare 78,17%
- fonduri fixe achizitionate prin surse proprii 3,64%
- fonduri fixe achizitionate prin surse MECI 18,19%

Exercitiul financiar 2008 a permis obtinerea unui profit brut estimat la valoarea de 1.200 mii lei.

5 Research Activity

The research activity that was going on at the national level in the year 2008 was characterized by a strong reverberation materialized by:

- the considerable increase of the important share from the Gross Domestic Product (GDP) apportioned to the public financing of the research-development from Romania, starting with the year 2005, and the increasing tendency of this indicator during 2005 – 2008, according to the Lisbon strategy; at the level of the year 2008, the national budget apportioned to research was 2,639 million lei;
- the creating of PNCDI 2, an instrument playing the part of preparing the research and development community from Romania for successfully participating in the research framework program of Europe FP7;
- the performance increasing and the mentality changing with regard to the access to the financial, information, technical - material resources;
- evaluation criteria that are more and more clearly oriented towards the scientific performance demonstrated by the researchers;
- the tackling of measures meant to stimulate the young researchers and the research excellence, by the CEEX and PNCDI 2 program: prizes obtained by competition and selection, the carrying out of doctorate preparing, programs of mobilities and fellowships;
- the creating of the necessary instruments having in view the improving of the technical-material endowment level of the research – development units (the Capacities Program);
- the creating of the background necessary to continuously perfecting the human resource from RDI (the "Human Resources" program, structural funds of regional development);
- the stimulating of the collaboration between research and the economic medium by way of partnerships as part of the programs "Partnerships in the priority domains", "Innovation";
- the creating of the institutional and financial framework for improving the scientific performance by means of ensuring the access to specialized information for all the scientific domains, at a level that can be compared to the European one, by the operational program POS CCE, operation O 2.2.4," The Consolidation of the administrative capacity".

Activitatea de cercetare, derulata la nivel national in anul 2008, s-a caracterizat printr-o puternica reverberatie, concretizata prin:

- cresterea considerabila a ponderii din PIB, alocata pentru finantarea publica a cercetarii-dezvoltarii in Romania, incepand cu anul 2005 si tendinta de crestere a acestui indicator in perioada 2005-2008, conform strategiei de la Lisabona; la nivelul anului 2008, bugetul national alocat cercetarii a fost de 2639 milioane lei;
- crearea PNCDI 2, instrument care are rolul de pregatire a comunitatii de cercetare si dezvoltare din Romania pentru participarea cu succes la programul cadru de cercetare a Europei, FP7;
- cresterea performantei si schimbarea mentalitatii privind accesul la resursele financiare, informationale, tehnico-materiale;
- criterii de evaluare din ce in ce mai clar orientate catre performanta stiintifica demonstrata de cercetator;
- abordarea de masuri de stimulare a cercetatorilor tineri si a excelentei in cercetare, prin programul CEEX si PNCDI II - premii obtinute prin competitie si selectie, sustinere pregatire doctorat, programe de mobilitati si burse;
- crearea instrumentelor necesare in vederea imbunatatirii nivelului de dotare tehnico-materiala a unitatilor de cercetare-dezvoltare (programul "Capacitati");
- crearea cadrului necesar pentru perfectionarea continua a resursei umane din CDI (programul "Resurse Umane", fonduri structurale de dezvoltare regionala);
- stimularea colaborarii dintre cercetare si mediul economic prin parteneriate in cadrul programelor "Parteneriate in domeniile prioritare", "Inovare";
- crearea cadrului institutional si financiar pentru imbunatatirea performantei stiintifice prin asigurarea accesului la informatie specializata din toate domeniile stiintifice, la nivel comparabil cu cel european, prin programul operational POS CCE, operatiunea O 2.2.4 Intarirea capacitatii administrative.

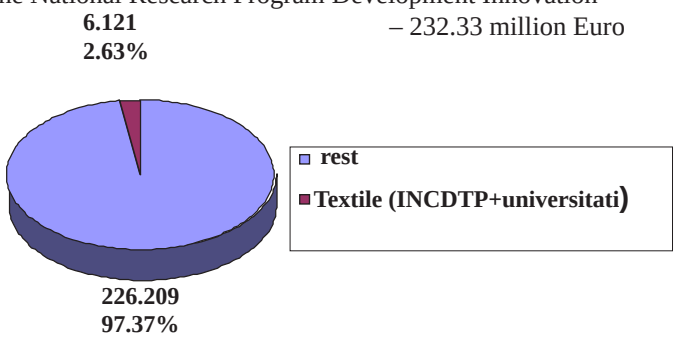
5.1 Research at national level

Within this context, the indicators obtained by INCDTP demonstrate the efforts and actions taken to consolidate its position as a dynamic actor on the Romanian and European research market.

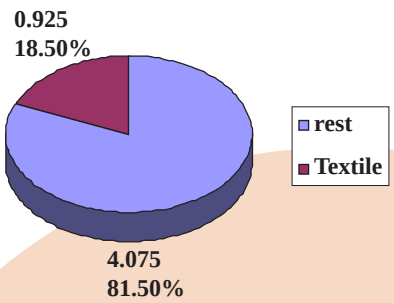
In acest context, indicatorii obtinuti de I.N.C.D.T.P. demonstreaza eforturile depuse si actiunile intreprinse pentru consolidarea pozitiei sale de actor dinamic pe piata cercetarii romanesti si europene.

RDI Programs/ Programe CDI	2008
National Projects/ Proiecte Nationale	
CEEX/ CEEX	29
Sectorial/ Sectorial	6
Partnerships/ Parteneriate	21
Capacities/ Capacitati	4
MEF (endowment)/ MEF (dotare)	1
Innovation/ Inovare	3
NUCLEUS/ NUCLEU	37
ASRO- Direct Contracts	2
NATIONAL PROJECT TOTAL/ TOTAL PROIECTE NATIONALE	103
Leonardo da Vinci/ Leonardo da Vinci	2
EUREKA/ EUREKA	10
Billateral Cooperation/ Cooperare bilaterala	8
FRAMEWORK 7/ CADRU 7	2
INTERNATIONAL PROJECT TOTAL/ TOTAL PROIECTE INTERNATIONALE	22
PROJECT TOTAL/ TOTAL PROIECTE	125

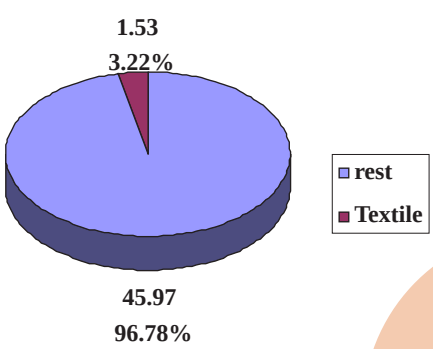
The National Research Program Development Innovation – 232.33 million Euro



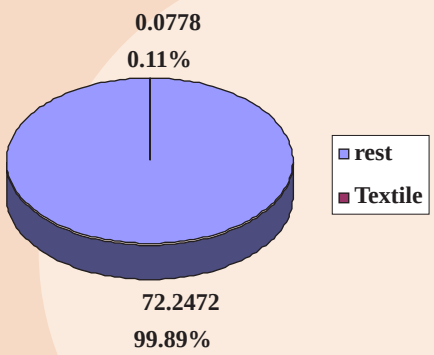
The Sectorial Program– 5 million Euro



The Nucleus Program – 47.5 million Euro

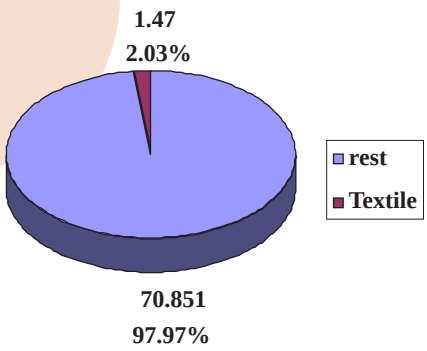


The Innovation Program – 72.325 million Euro

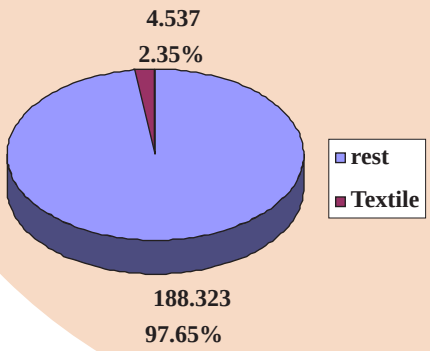


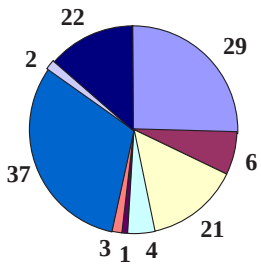
5.1 Research at national level

The Capacities Program – 72.321 million Euro



The "Partnerships in priority domains" Program – 192.86 million Euro





- CEEX/ CEEX
- Sectorial/ Sectorial
- Partnerships/ Parteneriate
- Capacities/ Capacitati
- MEF/ MEF
- Innovation/ Inovare
- Nucleus/ Nucleu
- ASRO-Direct Contracts/ ASRO – contracte directe
- International Projects/ Proiecte internationale

The strategy dwelt upon in the research activity of INCDTP in the year 2008 was focused on the increasing of the added valued that can be demonstrated within the R-D-I domain and the industrial sector of textiles and leather – footwear – rubber.

Starting from the idea that excellence and innovation are the keys to the industrial competitiveness, the following strategic directions were targeted:

- the tackling of complex researches having a multidisciplinary character, in niche domains of a high scientific level: technical, industrial, intelligent, strategic and medical textiles, as part of the research programs belonging to the National Program and the European Research Programs;
- the intensifying of the contacts and partnerships with the university and economic medium;
- the getting in line with the objectives of the Technology Platform for Textiles and Clothing and those of ERA.

x

x x

Strategia abordata in activitatea de cercetare a I.N.C.D.T.P. in anul 2008 a fost focalizata pe cresterea valorii adaugate demonstrabile in domeniul CDI si in sectorul industrial de textile si pielarie-incaltaminte-cauciuc.

Pornind de la ideea ca excelenta si inovarea sunt cheia competitivitatii industriale, s-au avut in vedere urmatoarele directii strategice:

- abordarea de cercetari complexe, cu caracter multidisciplinar, in domenii nisa de inalt nivel stiintific - textile tehnice, industriale, textile inteligente, textile strategice, medicale, in cadrul proiectelor de cercetare din Planul national si programele europene de cercetare;
- intensificarea contactelor si parteneriatelor cu mediul universitar si economic;
- alinierea la obiectivele Platformei Tehnologice pentru Textile si Confectii si ale ERA.

x

x x

5.1 Research at national level

The year 2008 marked the point of finalizing the projects from the CEEX- Excellence Research Program, which were focused by domains of a high scientific level:
- intelligent textiles for identifying and processing the mobile personalized information;
- intelligent mobile mechatronic systems having an ecologic impact for the textile equipment;
- integrated technologic systems playing a part in the environment protection: a complex system of technologies and products meant for the textile printing digitizing, a technologic system of producing the ecologic 3D sealing cord for various industrial applications, competitive technologies of processing the textile and leather waste into products having a high added value;
- invasive and non-invasive medical devices made of high-tech textile materials;
- multifunctional technical textiles meant for protective garments;
- new technologies applied to the bast fibre products by using chemical and enzymatic processes in ultrasounds.

The obtained results, characterized by the direct application in various domains (the chemical industry, metallurgy, environment protection, medicine, etc) demonstrate the INCDTP decision of consolidating its position within the R-DI system from Romania and at the European level by Excellence and Efficiency.

As part of the Program "Partnerships in the priority domains", INCDTP run, in the year 2008, a number of 21 projects, out of which 12 in coordination. The dwelt upon research domains aimed at complex researches, in priority fields: medicine, advanced technologies of environment protection, bio fertilizers for plant protection & complex photo catalytic systems for the advanced treating of effluents. Also, the research/industry partnership stimulating and the ensuring of the conditions for implementing the research results were aimed at. INCDTP participated, in the year 2008, in the launched competitions in the Programs INNOVATION, Partnerships in the priority domains, Capacities, SECTORIAL, succeeding to obtain financing for a number of 17 projects, the objectives of these targeting:
- the knowledge developing in the field of advanced biomaterials for the sake of life quality increasing;
- the developing of new materials, products and processes having a high added value, having in view the diagnosing and the medical treatments having an impact over the health state and the increasing of the hope for a longer life time;
- the developing of the infrastructure and the increasing of the R-DI performance by the endowment with last generation performant equipment;
- the developing of the garment internal market by using the 3D scanning method and the identifying of the anthropometric characteristics specific to the Romanian population;
- the elaborating of collaborative systems and mechanisms

Anul 2008 a constituit punctul de finalizare a proiectelor din cadrul Programului CEEX – Cercetare de Excelenta, focalizate pe domenii de inalt nivel stiintific:
- textile inteligente pentru identificarea si procesarea informatiei personalizate mobile;
- sisteme mecatronice mobile inteligente cu impact ecologic pentru echipamente textile;
- sisteme tehnologice integrate cu rol in protectia mediului - sistem complex de tehnologii si produse destinate digitalizarii imprimarii textile, sistem tehnologic de producere a snurului de etansare 3D ecologic, pentru diferite aplicatii industriale;
- tehnologii competitive de prelucrare a deseurilor textile si din piele in produse cu valoare adaugata mare;
- dispozitive medicale invazive si neinvazive din materiale textile high-tech;
- textile tehnice multifunctionale pentru imbracaminte de protectie;
- tehnologii noi aplicate produselor din fibre liberiene utilizand procese chimice si enzimatice in ultrasunete.

Rezultatele obtinute, caracterizate prin aplicabilitate directa in domenii diverse (industria chimica, metalurgie, protectia mediului, medicina etc) demonstreaza decizia INCDTP de a-si consolida pozitia in sistemul CDI din Romania si la nivel european prin Excelenta si Eficienta.

In cadrul Programului Parteneriate in domeniile prioritare, INCDTP a derulat in anul 2008 un numar de 21 de proiecte, dintre care 12 in coordonare. Domeniile de cercetare abordate au vizat cercetari complexe, in domenii prioritare: medicina, tehnologii avansate de protectia mediului, biofertilizatori pentru protectia plantelor, sisteme fotocatalitice complexe pentru epurarea avansata a apelor reziduale. De asemenea, s-au avut in vedere stimularea parteneriatelor cercetare/industrie si asigurarea conditiilor pentru implementarea rezultatelor cercetarii.

INCDTP a participat in anul 2008 la competitiile lansate in programul INOVARE, Parteneriate in domeniile prioritare, Capacitati si programul SECTORIAL, reusind sa obtina finantare pentru un numar de 17 proiecte, obiectivele acestora vizand:
- dezvoltarea cunoasterii in domeniul biomaterialelor avansate pentru cresterea calitatii vietii;
- dezvoltarea de noi materiale, produse si procese cu valoare adaugata ridicata, pentru diagnosticare si tratamente medicale cu impact asupra starii de sanatate si cresterii sperantei de viata;
- dezvoltarea infrastructurii si cresterea performantei CDI, prin dotarea cu echipamente performante, de ultima generatie;
- dezvoltarea pietei interne de confectii prin utilizarea metodei de scanare 3D si identificarea caracteristicilor antropometrice specifice populatiei din Romania;
- elaborarea de sisteme si mecanisme colaborative specifice

that are specific to the economic clusters and the company networks within the knowledge – based economy;
- the obtaining of certain excellence scientific results, reflected in the increasing of the number of articles appeared in the publications belonging to the main knowledge flow.
The year 2008 was also a start for INCDTP from the point of view of accessing the non reimbursable public funds allocated to Romania by the Structural Funds, as part of the Operational Sectorial Program POS CCE, Priority Axis 2 "The Increasing of the economic competitiveness by research – development and innovation", this demonstrating the efforts taken by the specialists from the Institute for applying with projects in all the open competitions.
In this respect, it is to be noted the submitting of 2 projects as part of the program POS DRU – Human Resources, and of an innovative spin-off project – Operation 2.3.1, which is in course of evaluation, and the winning of a project as part of Operation 2.2.3 "The Developing of certain R-D centre networks, coordinated at the national level and connected to the European and international networks of the same type (GRID, GEANT)".
Having in view the improving of the scientific research by developing the infrastructure of R-D centres within the GRID type networks, the infrastructure needed for doing the connection to the GRID network will be accomplished, being made up of two knots that are interconnected by means of the RoEduNet network, a thing that will lead to:
- the increasing of the number of complex, national and European projects, which dwell upon advanced and frontier researches, at the border of knowledge;
- the increasing of the number of researchers involved in the fundamental research activity from top domains such as: aeronautics, medicine, nanotechnologies, bio materials and, implicitly, information technology;
- the intensifying of the Romanian researchers' participation in big national research infrastructures, excellence networks, technology platforms, excellence poles;
- the enhancing of the important share of doctors and candidates for a doctor's degree within the total number of Romanian researchers;
- the increment of the international visibility and of the international acknowledging degree for the Romanian research from the textile field;
- the obtaining of certain scientific results of excellence, reflected in the increasing of the number of articles appeared in publications from the main knowledge flow, ISI rated scientific magazines.

x

x x

INCDTP, being accredited as a national institute, finalized, in 2008, the Program NUCLEUS – "The Increasing of the competitiveness of the textile and leather - footwear industry from Romania – COMTEXPEL", within which 37 projects

clusterelor economice si retelelor de firme in economia bazata pe cunoastere;
- obtinerea unor rezultate stiintifice de excelenta, reflectate in cresterea numarului de articole in publicatii din fluxul principal de cunoastere.
Anul 2008 a constituit de asemenea un start pentru INCDTP din punct de vedere al accesarii fondurilor publice nerambursabile alocate Romaniei prin Fondurile Structurale, in cadrul Programului Operational Sectorial POS CCE, Axa prioritara 2 "Cresterea Competitivitatii Economice prin cercetare-dezvoltare si inovare", aceasta demonstrand eforturile depuse de specialistii institutului pentru aplicarea cu proiecte la toate competiile deschise.
In acest sens, se evidentiaza depunerea a 2 proiecte in cadrul programului POS DRU –Resurse umane si a unui proiect infiintare spinn-off inovativ – Operatiunea 2.3.1, care se afla in evaluare si castigarea unui proiect in cadrul Operatiunii 2.2.3 "Dezvoltarea unor retele de centre C-D, coordonate la nivel national si racordate la retele europene si internationale de profil (GRID, GEANT)".
Urmarind imbunatatirea performantei stiintifice prin dezvoltarea infrastructurii de centre de C-D in cadrul retelelor de tip GRID, in cadrul proiectului se va realiza infrastructura necesara conectarii la reteaua GRID, formata din doua noduri interconectate prin intermediul retelei RoEduNet, ceea ce va conduce la:
- cresterea numarului de proiecte complexe, nationale si europene, ce abordeaza cercetari avansate si cercetari de frontiera, la granita cunoasterii;
- cresterea numarului de cercetatori implicati in cercetarea fundamentala din domenii de varf cum sunt aeronautica, medicina, nanotehnologiile, biomaterialele si implicit tehnologia informatiei;
- intensificarea participarii cercetatorilor romani la mari infrastructuri internationale de cercetare, retele de excelenta, platforme tehnologice, poli de excelenta;
- cresterea ponderii numarului de doctori si doctoranzi in totalitatea cercetatorilor romani;
- cresterea vizibilitatii internationale si a gradului de recunoastere internationala a cercetarii romanesti din domeniul textil;
-obtinerea unor rezultate stiintifice de excelenta, reflectate in cresterea numarului de articole in publicatii din fluxul principal de cunoastere, reviste stiintifice cotate ISI.

x

x x

INCDTP, acreditat ca institut national, a finalizat in anul 2008 Programul NUCLEU.
"Cresterea Competitivitatii industriei textile si de pielarie –incaltaminte din Romania – COMTEXPEL", in cadrul car-

5.1 Research at national level

were going on. The obtained results, materialized by innovative technologies and products, methodologies, technical plans and normatives, patent applications, published articles and books, will contribute to:
- the strengthening of the research capacity of the institute and the supporting of re-launching and enhancing the competitiveness of the economic textile – leather units by implementing R-DI projects;
- the connecting to the priorities, objectives and activities that are specific to the European research area and the preparing of the Romanian participation in the FRAMEWORK PROGRAM 7;
- the correlating of the thematic directions of the research activity to the objectives of the technology platforms developed at the European level.

For the purpose of a better knowledge concerning the activity, the promoting of the results and the experience of the Romanian researchers in the textile-leather domain, and the opening towards new opportunities of accessing the information and of integrating into the European research consortia, the managerial strategy of the institute promotes the consolidating of the partnership relationships, the affiliating to the national and international bodies, the inserting of INCDTP into various data bases, institution networks and bodies that can become sources of scientific competence of reference, able to determine a visible impact in the quality of the research from Romania.

Special attention was paid, during the year 2008, to accessing the European projects by participating in the TEPPIES calls launched by EURATEX, brokerage, meetings of the experts from the work groups; thus, 16 international projects were run (FRAMEWORK 7 – 2 projects, Leonardo da Vinci – 2 projects, bilateral cooperation – 8 projects, EUREKA –10 projects).

Considering the difficult economic and financial context, due to the global crisis, that started in 2009, the INCDTP priorities will be channelled in the direction of exploiting all the opportunities offered by the Structural Funds by way of the calls from the Sectorial Operational Program, the competition from the NUCLEUS Program, the European research programs FRAMEWORK 7, EURO STARS, continuing, at the same time, the activity of identifying new themes and partners for future research projects in PNCDI II.

uia s-au derulat 37 de proiecte. Rezultatele obtinute, concretizate prin tehnologii si produse inovative, metodologii, planuri si normative tehnice, cereri de brevete, articole si carti publicate, vor contribui la:
- intarirea capacitatii de cercetare a institutului si sprijinirea relansarii si cresterii competitivitatii unitatilor economice cu profil textile-pielarie prin implementarea de proiecte CDI;
- racordarea la prioritatile, obiectivele si activitatile specifice ariei europene de cercetare si pregatirea participarii romanesti la Programul CADRU 7;
- corelarea directiilor tematice ale activitatii de cercetare cu obiectivele platformelor tehnologice dezvoltate la nivel european.

In scopul unei mai bune cunoasteri a activitatii, promovarii rezultatelor si a experientei cercetatorilor romani in domeniul textile-pielarie si deschiderii spre noi oportunitati de accesare a informatiilor si integrare in consortii europene de cercetare, strategia manageriala a institutului promoveaza consolidarea relatiilor parteneriale, afilierea la organisme nationale si internationale, inscrierea I.N.C.D.T.P. in diferite baze de date, retele de institutii si organisme care pot deveni surse de competenta stiintifica de referinta, in masura sa determine un impact vizibil in calitatea cercetarii in Romania.

O atentie deosebita a fost acordata in cursul anului 2008 accesarii proiectelor europene, prin participarea la apelurile TEPPIES lansate de EURATEX, brokerage, intalniri ale expertilor din cadrul grupurilor de lucru; astfel au fost derulate 16 proiecte internationale (CADRU 7 -2 proiecte, Leonardo da Vinci - 2 proiecte, cooperare bilaterala - 8 proiecte, EUREKA - 10 proiecte).

In contextul economic si financiar dificil cu care a debutat anul 2009, datorat crizei mondiale, prioritatile I.N.C.DT.P. se vor canaliza in directia exploatarii tuturor oportunitatilor oferite de Fondurile Structurale prin apelurile din Programul Operational Sectorial, competitiei din Programul NUCLEU, programelor europene de cercetare Program Cadru 7, EURO STARS, continuandu-se totodata activitatea de identificare de noi tematici si parteneri pentru viitoare proiecte de cercetare in PNCDI II.

5.1.1 Performant products and technologies

Global trends and achievements

The XXI century, the materials century!

Materials 'surrounding', 'on' and 'inside' the body will focus on convergence, health, biology, polymers and electronics, more and more driven by individual needs towards security and safety, by means of smart and intelligent textiles. When referring to textiles the term could be either smart or intelligent, thus being associated to two different meanings – novelty, innovation, contemporaneity, but also ingenious, smart, and even wise, acting smart or created intelligently. The two words can be employed from one of the extremities to the utmost other. What exactly smart or intelligent materials mean? They are the ones capable to perceive and sense the environmental stimuli, and medium stimuli, in other words inside and outside stimuli, and react to them, adapt to changes by functionalities embedded in their structures. Stimuli and reactions could be electrical, chemical, thermal, magnetic, radiant or other in nature.

In the XX century, plenty of physical phenomena and properties, unconceivable before, were discovered. Among the digged up phenomena piezoelectricity, ferroelectricity, electro-luminescence, mechanoluminescence and other could be listed.

The aim of the XXI century is the very application of everything was discovered before, for the more complex structures called smart or intelligent, so that the new structures cover such properties as the ones proven within and included under the umbrella of smart/intelligent materials. Memory, hysteresis, external or internal stimuli reaction are but a few functions proved for these materials used as sensors or actuators.

Many of the researches describe the new 'user friendly' products as the result of a 'marriage' between fashion and technology. The approach was recently changed from a technically oriented to a customer-oriented, thus a strategic thinking was needed and equally a development process for what New Product Development means. Therefore, the so-called NPD approach should encourage the development of multi-disciplinary teams in the sense of a different conceptual re-thinking going beyond to surpass the creative boundaries. Embed the 'invisible functionalities' into textile structures, use of functional components integrated into clothing assemblies are but a couple of things defining creation 'freedom' of expression into textile products field.

Purposeful to give birth to a new conceptual model of addressing the intelligent design, it is foremost needed to define – the inter-dependency controlling the convergent elements-NPD processes bonds, yet also trends, lifestyle, preferences, and corporative culture etc.

Tendinte si realizari pe plan mondial

Secolul XXI va fi secolul materialelor! Materialele „in jurul corpului", „pe corp" si „in corp" se vor axa pe convergenta medicinei, biologiei, polimerilor si electronicii, care va fi actionata din ce in ce mai mult de necesitatile individului, prin intermediul textilelor inteligente pentru obtinerea sigurantei si securitatii. Termenul de inteligent este utilizat cu doua sensuri. Primul este in sensul de nou, modern, iar al doilea in sensul de destept, ingenios si inteligent. Termenul de inteligent poate fi utilizat de la o extrema pana la cealalta. Ce inseamna exact materiale inteligente? Sunt materialele care sunt capabile sa perceapa si sa simta stimulii din partea mediului, precum si din interior, sa reactioneze la stimuli si sa se adapteze la acestia prin integrarea functionalitatilor in structurile lor. Stimulii si raspunsurile pot fi electrice, chimice, termice, magnetice, radiante si de alta natura.

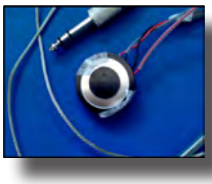
In secolul al XX-lea s-au descoperit multe proprietati si fenomene fizice, care nu au putut fi descoperite anterior. Dintre fenomenele nou aparute se numara piezoelectricitatea, feroelectricitatea, electroluminiscenta, mecanoluminiscenta si multe altele. Scopul secolului XXI este sa aplice tot ce s-a descoperit pentru structurile mai complexe numite inteligente, astfel incat aceste noi structuri sa cuprinda astfel de proprietati care au fost demonstrate si sunt prezente sub denumirea de inteligenta materialelor. Acestor materiale le sunt demonstrate memoria, histereza, reactia la stimularea externa sau interna si sunt utilizate ca senzori, precum si ca elemente de actionare.

Multe cercetari descriu noile produse - user friendly - ca rezultatul unui "mariaj" dintre moda/fashion si tehnolgie. Modul de abordare a fost schimbat de curand, dintr-unul tehnic in unul orientat spre consumator, fiind necesara o gandire strategica si un proces de dezvoltare de nou produs. Noua abordare a dezvoltarii de produse noi trebuie sa incurajeze dezvoltarea echipelor multidisciplinare, in sensul gandirii conceptuale diferite mergand pana la depasirea granitelor creative. Inserarea "functionalitatilor invizibile" in structuri textile, utilizarea elementelor functionale ca parte integranta a ansamblului vestimentar sunt doar cateva instrumente de lucru care definesc "libertatea" creatiei in domeniul produselor textile.

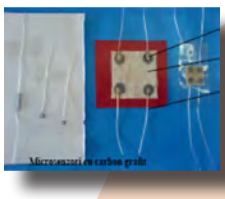
Pentru formularea unui nou model conceptual de abordare a designului inteligent se impune definirea interdependentelor elementelor convergente/procese dezvoltarii de produse noi, trenduri, stil de viata, preferinte, criterii convergente, noi cunostinte, cultura corporativa

– all components of smart/intelligent garments.
The functionalized products, smart or interactive, represent a new market segment resulted from the necessity of employing them into specific products, along with the continuous process of advance experimented by the textiles invented and their properties.

1. Project: "Smart textiles – Convergent Platform for The Identification and Processing of Mobile Personalized Information, IET" (2006-2008)
• **Objectives:** IET conceiving, demonstration of functionality and applicability, dissemination
• **Results:** Manufacture technology: Sensor with graphite electrodes, Piezoelectric sensor
- **Product**: Interactive clothing meant to monitor some biophysiological signals
Components:
a) Two pieces underwear product: sleeveless sports shirt and/or stretch pants
The knitted textile support with multifunctional/ecologic, bioactive properties and psycho-sensorial comfort is made of yarns in the count range 50Nm-70Nm, fibrous composition - 60% Amicor / 40% Cotton, 100% fireproofed and bioactive Trevira PES, 100% Lyocell, 100-140 g/m2 in mass.
b) Non-invasive micro-sensors meant to monitor the physiological signs, attached to the textile support
• Piezoelectric sensor for breath monitoring
Characteristics:
Load voltage: 0-1000 mV; Sizes/Φ35 mm, H = 5 mm;
Power capacity: Cs=24 nF ± 10%, with f=100 Hz;
K = piezoelectric module: 250pC/N (PbTiO3);
Temperature variation threshold: 0-80°C
• Lead carbon sensor meant to monitor moisture
Characteristics:
- moisture range: 20-60% (60 – 100%);
- range of resistance variance: 6-12 ohm.
Benefits:
• substantiation centered on the convergence of the smart textiles concept
• competitiveness and creativity increase;
• sustainable economic growth of businesses;
• improvement of the synthetic indicators showing the health state (mean life expectancy at birth, mean healthy life expectancy, death rate);
• 10% reduction of health and medical-social expenses, life quality enhancement, performances improvement and the improvement of social integration capacity



Micro-sensors



etc., componente ale imbracamintei inteligente.
Produsele functionalizate, inteligente sau interactive reprezinta un nou segment de piata, care rezulta din necesitatea existentei produselor specifice pe masura ce textilele si proprietatile textilelor noi sunt inventate.

1. Proiect: "Smart textile – platforma convergenta pentru identificarea si procesarea informatiei personalizate mobile, IET" (2006-2008)
• **Obiective:** realizarea, demonstrarea functionalitatii si utilitatii IET, diseminarea
• **Rezultate: Tehnologie** de realizare: Senzor cu electrozi de grafit, Senzor piezoelectric
- **Produs**: Imbracaminte interactiva destinata monitorizarii unor semnale biofiziologice
Elemente componente:
a) Produs subvestimentar realizat din doua piese: maieu si/sau colant
Suportul textil tricotat cu proprietati multifunctionale/ecologic, bioactiv, confort psihosenzorial, realizat din fire in gama de finete Nm 50 - 70, avand compozitia fibroasa: 60% amicor/40% bumbac,100% PES tip Trevira ignifug si bioactiv, 100% lyocell, cu masa 100 - 140 g/m2.
b) Microsenzori noninvazivi pentru monitorizarea semnalelor fiziologice, atasati pe suportul textil
• Senzor piezoelectric pentru monitorizarea respiratiei:
Caracterisitici:
Tensiunea de iesire: 0 -1000 mV;
Dimensiunile: Φ = 35 mm, H = 5 mm;
Capacitatea electrica: Cs= 24 nF ± 10%, cu f = 100 Hz; K = modul piezoelectric: 250 pC/N (PbTiO3);
Limita de variatie a temperaturii: 0 - 80°C
• Senzor cu carbon grafit destinat monitorizarii umiditatii:
Caracteristici:
- domeniul de umiditate: 20 - 60% (60 – 100%);
- domeniul de variatie a rezistentei: 6 - 12 Ohm.
Beneficii:
• fundamentarea convergenta a conceptului de smart textile;
• cresterea competitivitatii si a creativitatii;
• dezvoltarea economica durabila a agentilor economici;
• imbunatatirea indicatorilor sintetici ai starii de sanatate (speranta medie a vietii la nastere, speranta medie de viata sanatoasa, mortalitatea);
• reducerea cu 10% a cheltuielilor de sanatate si medico-sociale, cresterea calitatii vietii, a performantelor si a capacitatii de integrare sociala.

Application fields: vital functions monitoring, e-health.

2. Project: "Smart textiles used in medical/patients physiological monitoring" (2006-2008)

• **Objectives**

- Technical studies for the manufacture of protective equipments meant for the medical/physiological monitoring of patients, and a comparative analysis of physical-mechanical, chemical and structural characteristics for the fibers/yarns with biomedical properties;
- Design and manufacture of textile products with biomedical properties;
- Conceive the technical manufacturing regulations for the interactive textile supports;
- Information dissemination

• **Results:** Technical study – Identification of manufacturing technologies for the protective equipment meant for the medical/physiological monitoring

- **Product** – Knitted clothing subassembly with bioactive properties

Characteristics:

- raw material: yarns with silver molecules content
- knit: mass: 350-400 g/m2;
- structure: double stitches in two wales, index i=4, arranged in the 2x2 rate
- bactericide and fungicide effect by means of its active component
- thermal-regulating and moisture transfer capacity
- wear comfort and hygiene

Novelty elements: application of the "seamless" technology for the achievement of knits with biomedical properties, made of yarns with silver molecules content

Benefits: functionalization of textile products (bactericide and fungicide effect by means of the active component; long-lasting anti-bacteria effect which is not washed away; thermal-regulating and moisture transfer capacity; smell forming-resistant; protection against pathogens pollution; wear comfort and hygiene).

Knitted clothing subassembly

Application fields: manufacture of – protective equipments, sports wear, underwear, household items, technical non-woven articles, hygienic products

3. Project: „Comfort and Performance vs. Multifunctional Textile Materials in Sports and Leisure Activities" (2005-2008)

• **Objectives:**

Domenii de utilizare: monitorizare functiilor vitale, e-health.

2. Proiect: "Textile inteligente utilizate in monitorizarea medicala/fiziologica a pacientilor" (2006-2008)

• **Obiective**

- studii tehnice privind tehnologiile de realizare a imbracamintei de protectie pentru monitorizarea medicala/ fiziologica a pacientilor, analiza comparativa a caracteristicilor fizico-mecanice, chimice si de structura a fibrelor/firelor cu proprietati biomedicale;
- proiectarea si realizarea produselor textile cu proprietati biomedicale;
- elaborarea de reglementari tehnice de realizare a suporturilor textile interactive;
- diseminarea informatiilor.

• **Rezultate:** Studiu tehnic - Identificarea tehnologiilor de realizare a imbracamintei de protectie pentru monitorizarea medicala/ fiziologica

- **Produs** - Subansamblu vestimentar tricotat cu proprietati bioactive

Caracteristici:

- materie prima: fire cu conținut de molecule de argint ;
- tricot: masa: 350-400 g/m2;
- structura: ochiuri duble pe doua siruri, de indice i = 4, dispuse in raport 2 x 2
- efect bactericid si fungicid prin componenta activa;
- capacitate de termoreglare si transfer de umiditate;
- confort in utilizare si igiena.

Elemente de noutate: aplicarea tehnologiei "seamless", pentru obtinerea tricoturilor cu proprietati biomedicale, din fire cu continut de molecule de argint

Beneficii: functionalizarea produselor textile (efect bactericid si fungicid - prin componenta activa; efect antibacterian durabil - care nu dispare prin spalare; capacitate de termoreglare si transfer de umiditate; reducerea formarii mirosului; protectia fata de poluarea cu germeni patogeni; confort in utilizare si igiena)

Domenii de utilizare: realizarea de echipamente de protectie, imbracaminte pentru sport, lenjerie de corp, textile de casa, netesute tehnice, produse igienice

3. Proiect: „Confort si performanta versus materiale textile multifunctionale destinate activitatilor sportive si de timp liber" (2005-2008)

• **Obiective:**

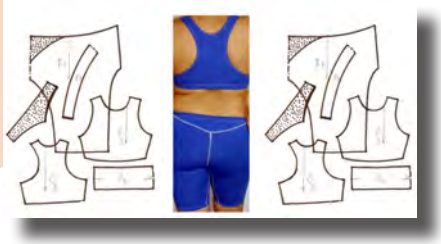
- pilot reproduction of the multifunctional and smart concepts for the laboratory level solutions;
- assignment of intellectual and industrial property rights, as well as trading rights among partners; large scale dissemination

• Results:

Product: Athletics equipment for short and long distances

Characteristics:

- Specific mass: max. 235 g*m-2
- Coefficient of thermal conductibility for
φ = 65% / φ = 100% – 0.036-0.040 kcal/m*h*C
- Coefficient of thermal resistance, m²*h*C/kcal,
for φ = 65% / φ = 100% – 0.0310-0.0325
- Air permeability: over 150 mm/sec
- Water vapor permeability: over 50%



Athletics equipment

Product: Martial arts equipment for training and competition

- Specific mass: max. 315 g*m-2;
- Minimal tensile strength in weft direction: 1400 N/5cm;
- Minimal tearing resistance in weft direction: 50 N/5cm;
- Air permeability: over 150 mm/sec
- Water vapor permeability: over 50%

Product: Leisure and Recovery equipment **Novelty elements:** Fibrous compositions, textile structures and design able to assure the reliability and the wear comfort of the textile products with specific destinations (sports and leisure activities).

Benefits:

- contribute to a wellness state
- performance improvement due to discomfort decrease
- raise the awareness of young population over the benefits of comfortable clothing

Application fields: Sports, Leisure and Recovery activities

- reproducerea in pilot, pentru solutiile de laborator, a conceptelor de multifunctional si inteligent;
- repartizare drepturilor de proprietate intelectuala, industriala si de comercializare intre parteneri si diseminare pe scara larga.

• Rezultate:

Produs: Echipament pentru atletism, pe distante scurte si distante lungi

Caracteristici:

- masa specifica: max. 235 g*m-2
- coeficientul conductibilitatii termice, la φ = 65%,
la φ = 100% - 0,036-0,040 kcal/m*h*C;
- coeficientul rezistentei termice, m²*h*C/kcal,
la φ = 65% / φ = 100% - 0,0310 – 0,0325;
- permeabilitatea la aer - peste 150 mm/s.;
- permeabilitate la vapori de apã - peste 50%.

Produs: Echipament pentru arte martiale, pentru antrenament si competitie

- masa specifica – max. 315 g*m-2;
- rezistenta la tractiune, minimum in batatura, 1 400 N/5 cm;
- rezistenta la sfasiere, minimum in batatura, 50 N/5 cm;
- permeabilitate la aer - peste 150 mm/s.;
- permeabilitate la vapori de apã - peste 50%;

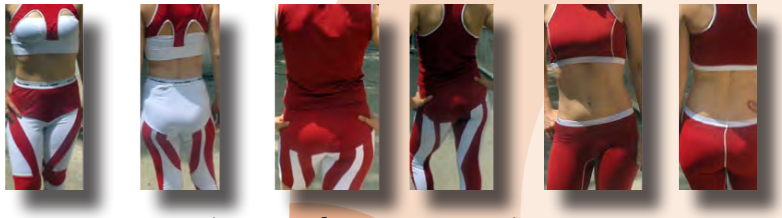
Produs: Echipament pentru timp liber si recuperare

Elemente de noutate: Compozitii fibroase, structuri textile si design - care sa asigure fiabilitate si confort in purtarea produselor textile orientate (sport si timp liber)

Beneficii:

- imbunatatirea starii de bine;
- imbunatatirea performantelor prin diminuarea disconfortului;
- educarea populatiei tinere pentru a purta o imbracaminte confortabila.

Domenii de utilizare: sport, timp liber, recuperare



Leisure and Recovery equipment

4. Project: "Textile covers for agricultural crops protection" (2007-2009)

• Objectives:

- Agro-technological experimentation of the textile covers meant to protect the agricultural crops against freezing, hail, excessive insolation and insects;
- Research results patenting and dissemination;
- Elaboration of company standards

• Results:

Products: a) Woven fabrics with different covering degrees ranging between 35-60%

b) CERTEX C textile composite made of 100% polyethylene, for crops protection against freezing;

c) Cover for plants protection, on the field, against insects, rain, wind, hail, birds and excessive insolation, made of CERTEX 35-60 woven fabrics, 8 m long, with incorporated arches and metal cables;

d) Shadowing/Protective covers for the plants in the greenhouses directed against excessive insolation, made of CERTEX 35-60 woven fabrics, 17 m long, with incorporated metal and textile cables;

e) Mulching cover, for field application, made of CERTEX 60 woven fabric;

f) Mulching cover, for greenhouse application, made of CERTEX 55 woven fabric;

g) Cover for plants protection against freezing, made of CERTEX C composite and fastening systems of the classical zip type;

Agrotextile

h) Textile modular cover for plants protection, on the field, against insects, rain, wind, hail, birds and excessive insolation made of CERTEX 45 woven fabric, with incorporated metal arches and bilateral openings.

Technologies: - Weaving technology for CERTEX 35-60 fabrics, with differentiated covering degrees (35-60%), on non-conventional weaving machines;

- Weaving technology for the CERTEX C composite reinforcement and lamination on classical weaving machines;
- Manufacturing technologies for the textile covers meant to protect crops against insects, rain, wind, hail, birds, excessive insolation, freezing, and for mulching, by means of sewing with resistant polyester thread;

Experimentation methodologies:- Agro-technological experimentation of the textile covers for the agricultural crops protection against hail, excessive insolation, insects, birds, wind, and rainfalls

- Agro-technological experimentation of the textile covers for crops protection against freezing.

4. Proiect: „Invelitori textile pentru protejarea culturilor agricole" (2007-2009)

• Obiective:

- experimentarea agrotehnologica a invelitorilor textile pentru protectia culturilor agricole la frig, grindina, insolatie excesiva, insecte;
- brevetarea si comunicarea rezultatelor cercetarii;
- elaborarea standardelor de firma.

• Rezultate:

Produse: a) Tesaturi cu grade diferentiate de acoperire, cuprinse intre 35-60%

b) Compozit textil CERTEX C din polietilena 100%, pentru protectia plantelor la frig

c) Invelitoare de protectie a plantelor in camp contra insectelor, ploii, vantului, grindinii, pasarilot, insolatiei excesive - realizata din tesaturile CERTEX 35-60, cu lungimea de 8 m, cu arce si cabluri metalice incorporate;

d) Invelitoarea de umbrire/protectie a plantelor in sera la insolatia excesiva, realizata din tesaturile CERTEX 35-60, cu lungimea de 17 m, cu cabluri metalice si textile incorporate;

e) Invelitoare de mulcire in camp, realizata din tesatura CERTEX 60;

f) Invelitoare de mulcire in sera, realizata din tesatura CERTEX 55;

g) Invelitoarea pentru protectia plantelor la frig, realizata din compozit CERTEX C si sisteme de inchidere prin fermoar clasic;

h) Invelitoare textila modulara, pentru protectia plantelor in camp contra insectelor, ploii, vantului, grindinii, pasarilot, insolatiei excesive – realizata din tesatura CERTEX 45, cu arce metalice incorporate si deschideri bilaterale de acces.

Tehnologii: - Tehnologie de tesere a tesaturilor CERTEX 35-60, cu grade diferentiate de acoperire (35-60%), pe masini neconventionale de tesut;

- Tehnologie de tesere a ranfortului si de laminare a compozitului CERTEX C, pe masini clasice de tesut;
- Tehnologii de confectionare a invelitorilor textile pentru protectia plantelor contra insectelor, ploii, vantului, grindinei, pasarilor, insolatiei excesive, frigului, prin mulcire si coasere cu ata rezistenta, de poliester.

Metodologii de experimentare: - experimentarea agrotehnologica a invelitorilor textile pentru protectia culturilor agricole contra grindinei, insolatiei excesive, insectelor, pasarilor, vantului, averselor de ploaie;

- experimentarea agrotehnologica a invelitorii textile pentru protectia culturilor agricole la frig.

Benefits: - yield increase of eggplant crops grown in greenhouses by shadowing (3.1-4.0 kg/m2) and mulching (3.7 kg/m2), as compared to normally 2.3 kg/m2, the standard culture without shadowing and mulching;
- reduction of maintenance manpower needed for the crops by mulching;
- increase of agricultural production, water consumption reduction and the reduction of manpower needed for the maintenance – in the case of biological/ecological vegetables; the potential of earlier harvesting for crops grown;
- for crops protection against freezing, average increase of temperature inside the premises by 6°C, as compared to the temperature of the outside surrounding environment and an estimated earlier harvesting by 14-21 days
Application fields: Horticulture – the protection of agricultural crops in the field against hail, excessive insolation, insects, birds, wind, and rainfalls; crops mulching in the field, and in the greenhouses; agricultural crops shadowing inside the greenhouses

5. Project: "Woven performance structures covered with elastomer polymers for strategic shipping purposes " (2007-2008)
• **Objectives:** - Identification and assignment of intellectual property rights
- Results dissemination and publishing at national and/or international level
• **Results:**
Product: Woven fabric covered with CERTEX RT polyvinylchloride based mixture
Characteristics:
- Mass: 1015 g/m2
- Breaking resistance in warp and weft direction: min.450 daN
Novelty elements:
- Reinforcement - woven of high tenacity 1670 dtex polyester yarns, according to global present trends; heat-set; one-side hot-melt pre-adhering of the fabric with co-polyester powders; unilateral coating with PVC
- Woven and heat-set reinforcements:
a) RC – of 1100 dtex Terom polyester yarns;
b) RT – of 1100 dtex Terom polyester yarns;
c) RTD – of 1670 dtex HT Toray polyester yarns, twill woven;
d) RC – of 1670 dtex HT Toray polyester yarns, plain woven;
e) RCD – of 1670 dtex HT Toray polyester yarns, twill woven
Technology for weaving, heat-setting, pre-adhering and unilateral coating of the fabric covered with CERTEX RT polyvinylchloride

Protection textile envelope

Beneficii: - cresterea productiei agricole de vinete in sera prin umbrire (3.1 - 4.0 kg/m2) si mulcire (3.7 kg/m2), fata de 2.3 kg/m2, la cultura martor fara umbrire si mulcire;
- reducerea manoperei de intretinere a culturilor, prin mulcire;
- recolta de legume biologice/ecologice; cresterea productiei agricole; reducerea consumului de apa si a manoperei de intretinere a culturilor; devansarea obtinerii recoltelor. La invelitoarea pentru protectia plantelor la frig - cresterea medie a temperaturii in interiorul incintei cu 6°C, fata de temperatura aerului din mediul exterior si devansarea estimata a obtinerii recoltelor cu 14 - 21 zile;
Domenii de utilizare: horticultura - protectia culturilor agricole in camp la grindina, insolatie excesiva, insecte, pasari, vant, averse de ploaie; mulcirea culturilor in camp si sera; umbrirea culturilor agricole in sera.

5. Proiect: "Structuri performante tesute acoperite cu polimeri elastomeri pentru transport maritim strategic" (2007-2008)
• **Obiective:** - identificarea si atribuirea drepturilor de proprietate intelectuala;
- comunicarea si publicarea nationala si/sau internationala a rezultatelor
• **Rezultate:**
Produs: Tesatura acoperita cu amestec pe baza de polivinil clorura CERTEX RT
Caracteristici:
- masa: 1 015 g/m2;
- rezistenta la rupere in urzeala si batatura: min.450 daN
Element de noutate:
- Ranfort tesut din fire 1670 dtex poliester de inalta tenacitate, in concordanta cu tendintele actuale pe plan mondial, termofixat, preaderizat hot-melt cu pulberi copliesterice pe o singura parte a tesaturii, peliculizat unilaterala cu PVC;
- Ranforturi tesute si termofixate:
a) RC - din fire 1100 dtex, poliester Terom;
b) RT - din fire 1100 dtex, poliester Terom;
c) RTD - din fire 1670 dtex, poliester HT Toray, cu legatura diagonal;
d) RC - din fire 1670 dtex, poliester HT Toray, cu legatura panza;
e) RCD - din fire 1670 dtex, poliester HT Toray, cu legatura diagonal.
Tehnologii: de tesere, termofixare, preaderizare si peliculizare unilaterala a tesaturii acoperite cu amestec pe baza

based mixture; hot-melt pre-adhering; particles size 200-400 µm; powder melting point 105-115ºC; powder layered quantity 90-100g/m2;

Novelty elements:

Classical weaving of the reinforcement made of 1670 dtex HT polyester yarns; heat-setting; hot-melt pre-adhering with co-polyester powders on a single part of the fabric; unilateral coating with PVC;

Benefits:

- exploit the production capacities in the textile industry, chemical industry and technical garments manufacturing industry from the country
- protect the surrounding environment

Application fields:

- Complex naval transportation systems – ocean/sea/river/lake, taking the form of a protective tyre for the segmented inflatable structures, in short-term applications with military or civil purposes (fishing boats, rafts and inflatable toboggans etc);
- Textile industry, chemical industry and technical garments manufacturing industry

6. Project: "Development of new photovoltaic systems based on polymeric materials applied to flexible substrates" (2005-2008)

• Objectives:

- Optimization of manufacturing processes for the polymer-based solar cells
- Performance evaluation for the manufacturing processes and the resulted photovoltaic structures

• Results:

* Syntheses and characterization of conductive polymers: mixtures of poly-aniline (PA) / DBS / poly-acrylate; poly-aniline / DBS / poly(methyl-metacryllate); poly-aniline / DBS / polyurethanes; polypirrole (PP):

Products: Poly-aniline and Polypirrole

General characteristics: high reversible redox (PA) and conductivity, easy transforming into colored films and high air stability and thermal stability (PP)

*** Syntheses and characterization of dyes:** phtalocyanic syntheses, dye syntheses of mixed chromophores – azoic and phtalocyanic, water soluble phtalocyanine syntheses, syntheses of tetra-phenyl-porphyrin dyes

Products: phtalocyanic dyes

Characteristics: solubility and high photovoltaic activity

*** Technological processes** for the application of the conductive polymers and of dyes, either on glass, or on flexible substrates:

Product:Photovoltaic cells

- Flexible photovoltaic cells for applications like the wireless type of electronics and personal & portable electronics

de polivinil clorura CERTEX RT; Preaderizare hot melt; dimensiunea particulelor: 200 - 400 µm; punctul de topire al pulberii: 105 - 115ºC; cantitatea de pulbere depusa este de 90 - 100 g/m2;

Elemente de noutate:

- Tesere clasica ranfort din fire 1670 dtex poliester HT; termofixare; preaderizare hot-melt cu pulberi copliesterice pe o singura parte a tesaturii; peliculizare unilaterala cu PVC

Beneficii:

- utilizarea capacitatilor de productie din industria textila, industria chimica si de confectii tehnice din tara;
- protectia mediului inconjurator.

Domenii de utilizare:

- Sisteme complexe de transport maritim/fluvial/lacustru, ca anvelopa de protectie a camerelor gonflabile segmentate, in utilizari de scurta durata, militare sau civile (barci de pescuit, plute si tobogane gonflabile etc.);
- industria textila; industria chimica; industria de confectii tehnice.

6. Proiect: "Dezvoltarea de noi sisteme fotovoltaice pe baza de materiale polimerice pe substraturi flexibile" (2005-2008)

• Obiective:

- Optimizarea proceselor pentru realizarea celulelor solare pe baza de polimeri;
- Evaluarea performantelor proceselor si a structurilor fotovoltaice rezultate;

• Rezultate:

* Sinteze si caracterizari polimeri conductivi: amestecuri polianiline (PA)/DBS/ poliacrilat; polianiline/DBS /poli(metil-metacrilat); polianiline/ DBS /poliuretani; polipiroli (PP):

Produse: Polianiline si polipiroli

Caracteristici generale: conductivitate si reversibilitate redox(PA) ridicata, transformare usoara in filme colorate si stabilitate ridicata la aer, stabilitate termica (PP)

*** Sinteze si caracterizare coloranti:** sinteze ftalocianine, sinteze de coloranti cu cromofor mixt azoic si ftalocianinic, sintetize ftalocianine solubile in apa, sinteze de coloranti tetra fenil porfirinici, produse: coloranti ftalocianinici

Caracteristici: solubilitate si activitate fotovoltaica ridicata.

*** Procese tehnologice** de aplicare a polimerilor conductivi si colorantilor pe sticla si substraturi flexibile

Produs: Celule fotovoltaice

- celule fotovoltaice flexibile, pentru aplicatii tip electronice wireless si electronice personale portabile;

- Sports and leisure activities, as well as sailing, caravan and camping;
- Portable accumulators for batteries, including car batteries, battery charging and storage for emergency cases, for military uniforms, clothing items (T-shirts, canadians), climbers, professional photographers for communications, car ventilation, seats ventilation, solar tents, solar ovens, carpet bags etc.

- activitati de sport si timp liber - sporturi nautice, caravane, camping;
- incarcatoare portabile pentru baterii inclusiv auto, incarcarea si mentinerea bateriilor in cazuri de urgenta, uniforme militare, confectii (tricouri, canadiene), alpinisti, fotografi profesionisti, comunicatii, ventilatie auto, ventilatie scaune, corturi solare, cuptoare solare, genti voiaj etc.

Nr.	Celule fotovoltaice realizate	Performante
I	sticla/ ITO/TiO_2 / colorant – UPB5 / I_2/KI / Au/ sticla	Tensiunea: 130 – 150 mV
II	sticla optica/ ZnO/ ftalocianina de cupru /Au	R_s: 371,81 Ω; R_{sh}: 36 kΩ; n: 3,44; I ~ 200-300 μA
III	sticla/ITO/TiO_2/ ftalocianina de cupru/ITO/sticla	I ~ 200-300 μA
IV	Sticla/ITO/TiO_2/rutheniu 535 / platina / sticla electrolit iodolyte AN50	Tensiunea in gol: 0,6 V Randamentul cuantic: 60%
V	Polietilena tereftalat / ITO/TiO_2/rutheniu 535/ platina/ sticla electrolit iodolyte AN50	Tensiunea in gol: 0,58 V Randamentul cuantic: 54%

Application fields:
Poly-aniline and Polypirrole
- Optoelectronics industry: solar cells, electrodes, antistatic packaging for components, printed circuits
- Textile industry: conductive and antistatic materials, electromagnetic screening
- Automotive industry: antistatic products and paints (electric charges dissipation), electro-chrome windows
- Building and constructions: antistatic floorings and carpets, metal surface protection against corrosion
- Mining: conductive piping/tubes used against explosions
- Windows: 'smart' electro-chrome windows for buildings and automobiles
- Packaging: antistatic films and other products

Domenii de utilizare:
Polianiline si polipiroli
- industria opto/electronica: celule solare, electrozi, ambalare antistatica a componentelor, circuite imprimate;
- industria textila - materiale conductive, antistatice, ecranare electromagnetica;
- industria de automobile - produse si vopsele antistatice (disipare sarcini electrice), lunete electrocromice;
- constructii - mochete si podele antistatice, protectie suprafete metalice contra coroziunii;
- mine - conducte/tuburi conductive contra exploziilor;
- ferestre - geamuri "inteligente" electrocromice pentru cladiri si automobile;
- ambalaje - filme si produse antistatice.

7. Project: "STUDY CONCERNING THE USAGE OF INORGANIC COMPOUNDS, IN PROCESSING NATURAL LEATHERS, FOR THE PURPOSE OF PREVENTING THE POLLUTION OF THE ENVIRONMENT" - 2006 - 2008
• **Objectives:** obtaining and using inorganic by-products meant to totally or partially replace chrome tanning salts, for the purpose of creating ecological technologies of processing natural leathers.
• **Results:**
- pilot technologies of obtaining chrome-free tanning compounds P1 and P2;

7. Proiect: "STUDIU PRIVIND UTILIZAREA UNOR COMPUSI ANORGANICI LA PRELUCRAREA PIEILOR NATURALE, IN VEDEREA PREVENIRII POLUARII MEDIULUI" - 2006 - 2008
• **Obiective:** obtinerea si utilizarea unor produse auxiliare anorganice, menite sa inlocuiasca total sau partial sarurile tanante de crom, in scopul realizarii unor tehnologii ecologice de prelucrare a pieilor naturale
• **Rezultate:**
- tehnologii pilot de obtinere a compusilor tananti fara crom P1 si P2;
- tehnologii pilot de pre/tanare a pieilor naturale cu noile ma-

- pilot technologies of pre/tanning natural leathers with the new tanning materials;
- wet finishing technologies for the leathers tanned with the new materials;
- surface finishing technologies for the leathers processed with the materials and technologies resulted within the project;
- reducing the costs of effluents treating resulted from tanning with up to 118,8 euro/to of tanned leather.

Ecologic leather

*** Product and Technology:** ecologic tanning agents and application technology
- Fields of usage: in the leather industry
- benefits/effects: by using non-recyclable wastes from the non-ferrous metal industry (titanium) in order to increase eco-efficiency of the natural leathers processing industry, two tanning materials less expensive than currently used chrome salts have been obtained.

teriale tanante;
- tehnologii de finisare umeda a pieilor tabacite cu noile materiale ;
- tehnologii de finisare de suprafata a pieilor prelucrate cu materialele si tehnologiile propuse in cadrul proiectului;
- scaderea cheltuielilor cu epurarea efluentilor rezultati la tabacire cu pana la 118,8 euro/tona de piele tabacita.

*** Produs si Tehnologie:** agenti de tabacire ecologica si tehnologie de aplicare
- domenii de utilizare: in industria de pielarie
- beneficii/efecte: utilizarea unor deseuri nereciclabile rezultate in industria metalelor neferoase (titan) pentru cresterea eco-eficientei industriei de prelucrare a pieilor naturale., s-au obtinut doua materiale cu caracter tanant mai ieftine decat sarurile de crom utilizate in prezent.

8. Project: "MULTIDISCIPLINARY RESEARCH FOR ESTABLISHING THE DETERIORATION MECHANISMS OF HISTORIC AND CULTURAL PARCHMENT DOCUMENTS" PERGAMO
20.07.2006-08.08.2008

• Objectives:
- Creating and experimenting various types of parchments necessary for museums;

• Results: - Complex analysis system for characterizing heritage documents;
- Increasing vocational training and further training museum staff, preservers and restorers for the leather field;
- Production of parchment meant for restoring museum items and/or art or luxury items;
- Combining information technology with laboratory work in preservation-restoration, using the national and/or European network;
- Articles, papers.

Finished parchments

*** Product/Technology:** parchment for restoring historic documents

8. Proiect: "CERCETARI MULTIDISCIPLINARE PENTRU STABILIREA MECANISMELOR DE DETERIORARE A DOCUMENTELOR ISTORICE SI CULTURALE DIN PERGAMENT" PERGAMO
20.07.2006-08.08.2008

• Obiective:
- Realizarea si experimentarea diferitelor tipuri de pergamente necesare in muzee;

• Rezultate: - Sistem complex de analize pentru caracterizarea documentelor de patrimoniu;
- Cresterea pregatirii profesionale si perfectionarea cadrelor din domeniul muzeal, conservatori si restauratori pentru domeniul pielarie
- Productie de pergamente destinate restaurarii obiectelor muzeale si/sau obiectelor de arta sau de lux
- Introducerea in practica de laborator in conservare-restaurare a utilizarii tehnicilor informatice, utilizand reteaua nationala si/sau europeana
- Articole, comunicari

*** Produs/Tehnologie:** pergament pentru restaurarea documentelor istorice

9.Project: "ADVANCED MULTIFUNCTIONAL POLYMERIC MICROSTRUCTURES, WITH VARIABLE CONTENT OF STRUCTURED ELASTOMER AND PLASTIC" 2006-2008

• Objectives: Transfer and improvement of technologies in order to obtain advanced polymer microstructures

9. Proiect: "MICROSTRUCTURI POLIMERICE AVANSATE, MULTIFUNCTIONALE, CU CONTINUT VARIABIL DE ELASTOMER STRUCTURAT SI MASE PLASTICE" 2006-2008

• Obiective: Transfer si valorificare tehnologii pentru obtinerea de microstructuri polimerice avansate

• **Results:** Technology for creating polymeric microstructures, improved, approved, and transferred to the economic agent partner and co-financer SC CARDINAL SRL

*** Product: Polymeric microstructures based on ethylene propylene terpolymer and high-density polyethylene.**

• **New elements:**

- vulcanization of elastomer takes place together with polymer compounding;
- multifunctional materials, with elastoplastic properties which can be processed as plastic.

• **Fields of usage:**

- footwear, electro-techniques, auto, aeronautics, textile and poly-graphic industry etc.

Technology : Technology of creating polymer microstructures

• **Benefits/effects:**

- increases the quality and duration of using the new products due to the technical and morphological performances of polymer microstructures;
- the refuse and wastes resulted from obtaining various finished products can be totally recycled due to the thermo-processing ability of micro-structured materials

• **Rezultate:** Tehnologie de realizare a microstructurilor polimerice, omologata, transferata si valorificata la agentul economic partener-cofinantator SC CARDINAL SRL

*** Produs: Microstructuri polimerice pe baza de etilen propilen terpolimer si polietilena de inalta densitate.**

• **Elemente de noutate:**

- vulcanizarea elastomerului are loc concomitent cu compoundarea polimerilor;
- materiale multifunctionale, cu proprietati elasto-plastice si prelucrabile ca o masa plastica.

• **Domenii de utilizare:**

- incaltaminte, electrotehnica, auto, aeronautica, industria textila si poligrafica etc.

Tehnologie : Tehnologie de realizare a microstructurilor polimerice

• **Beneficii/efecte:**

- creste calitatea si durata de utilizare a noilor produselor obtinute datorita performantelor tehnice si morfologice a microstructurilor polimerice;
- rebuturile si deseurile rezultate la obtinerea a diverse produse finite pot fi reciclate in totalitate datorita termoprelucrabilitatii materialelor microstructurate

Polymeric microstructures

10. Project: "Rubber materials obtained by new and complex methods of reticulating and grafting elastomers by irradiance with accelerated electrons and microwave in the presence of polyfunctional monomers" - 2006-2008

• **Objectives:**

Implementation/transfer of technology to applier/co-financer

• **Results:**

Rubber materials reticulated and grafted by irradiance in the presence of polyfunctional monomers meant for manufacturing rubber goods.

Materials obtained from the process of "reticulation and grafting" induced by the combined interaction of accelerated electrons (AE) and microwaves (MW) in the presence of polyfunctional monomers.

The new materials present a high degree of purity and unique or improved properties compared to those obtained by classic vulcanization.

• **Benefits/effects**

- energy and material costs are reduced;
- human health is protected by creating products with a low toxicity degree.

*** Technology / Method**

Grafting and reticulating elastomers with the help of radia-

10. Proiect: "Materiale din cauciuc obtinute prin metode noi, complexe de reticulare si grefare a elastomerilor prin iradiere cu electroni accelerati si microunde in prezenta de monomeri polifunctionali" - 2006-2008

• **Obiective:**

Implementare/transfer tehnologie la aplicator/cofinantator

• **Rezultate:**

Materialele din cauciuc reticulate si grefate prin iradiere in prezenta de monomeri polifunctionali destinate fabricarii de bunuri de consum din cauciuc.

Materiale obtinute prin procesul de "reticulare si grefare" indus de interactia combinata a electronilor accelerati (EA) si a microundelor (MU) in prezenta unor monomeri polifunctionali.

Noile materiale prezinta un grad inalt de puritate si prezinta proprietati unice sau imbunatatite in comparatie cu cele obtinute prin vulcanizarea clasica.

• **Beneficii/efecte**

- Se reduc cheltuielile materiale si energetice;
- Protectia sanatatii omului prin realizarea unor produse cu grad scazut de toxicitate.

*** Tehnologie / Metoda**

Grefarea si reticularea elastomerilor cu ajutorul radiatiilor

tions is a modern technology based on the ability of radiations of directly tearing chemical links and of forming free radicals, for the purpose of obtaining new elastomer materials with high quality properties, using an average energy 2 MeV accelerator and average nominal power in 20 kW electron beam.

este o tehnologie moderna care se bazeaza pe capacitatea radiatiilor de a rupe direct legaturile chimice si de a forma radicali liberi, in scopul obtinerii de noi materiale elastomerice cu proprietati performante, folosind un accelerator de energie medie 2 MeV si putere medie nominala in fascicul de electroni de 20 kW.

11. Project: "New materials and technologies for creating advanced polymers for the purpose of reducing harmful effects on the environment and health in the rubber and plastic processing industry" 2007-2008

• Objectives:

Creating advanced polymers with non-toxic materials and elaborating non-pollutant technologies in order to ecologize the sector of producing and processing rubber and plastic especially for footwear, protection footwear and consumer goods

Grafting and reticulating system

• Results:

- Identifying non-toxic materials for creating advanced polymers;
- Creating a database with new types of ingredients of blending non-toxic rubber and plastics;
- Elaborating/ experimenting of non-toxic processing recipes for creating advanced polymers.

*** Product and technology** for creating polymeric compounds based on PVC and proteic waste used to make footwear soles

• Fields of usage

- Soles for protection footwear.
- Protection boots in the oil industry.

• Benefits/effects

- Ecologic technology, at the level of European requirements, in continuous flow, with high productivity;
- Technology without technological loss, with the possibility of recycling grains due to thermoplastic properties.

11. Proiect: "Materiale si tehnologii noi de realizare a unor polimeri avansati in vederea reducerii efectelor nocive pentru mediu si sanatate in industria de prelucrare a cauciucului si maselor plastice" 2007-2008

• Obiective:

Realizarea unor polimeri avansati cu materiale non-toxice si de elaborare a unor tehnologii nepoluante in vederea ecologizarii sectorului de producere si prelucrare cauciuc si mase plastice in special pentru incaltaminte, incaltaminte de protectie si bunuri de consum

• Rezultate:

- Identificarea materialelor non-toxice pentru realizarea polimerilor avansati;
- Realizarea unei baze de date cu noi tipuri de ingrediente de amestecare cauciuc si mase plastice non-toxice;
- Elaborare/ experimentare recepturi de prelucrare non-toxica pentru realizare polimeri avansati.

*** Produs si tehnologie** pentru realizarea compoundurilor polimerice pe baza de pvc si deseu proteic utilizate pentru confectia talpilor de incaltaminte

• Domenii de utilizare

- Talpi pentru incaltaminte de protectie.
- Cizme pentru protectie in industria petroliera.

• Beneficii/efecte

- Tehnologie ecologica, la nivelul cerintelor europene, in flux continuu, cu productivitate ridicata;
-Tehnologie fara pierderi tehnologice, cu posibilitatea reciclarii granulelor datorita proprietatilor termoplastice.

12. Project: "Design and achievement of manufacturing technologies for the prophylactic footwear meant for diabetics" 2006 - 2008

• Objectives:

- Achievement of footwear prototypes for prophylaxis and verification of these by put on and wearing tests
- Validation of footwear for diabetics II degree;
- Set up the designing and manufacturing technology for this sort, based on results achieved

• Results:

- experimental batch of the footwear;
- validation of footwear for diabetics II degree;

12. Proiect: „Proiectarea si elaborarea tehnologiilor de realizare a incaltamintei profilactice destinate persoanelor bolnave de diabet" 2006 - 2008

• Obiective:

- Realizarea de prototipuri de incaltaminte profilactica si verificare, prin probe de incaltare si purtare
- Validarea incaltamintei pentru diabetici gradul II;
- Definitivarea pe baza rezultatelor obtinute a proiectarii si tehnologiei de realizare a acestui sortiment.

• Rezultate:

- lot experimental de incaltaminte;
- validarea incaltamintei pentru diabetici gr.II;

5.1.1 Performant products and technologies

- manufacturing technology for the diabetics footwear;
- technical specifications 402/20 Oct. 2008.

*** Product/Technology:**

- Footwear confection according to system IL and IF, meant for diabetes patients;
- Manufacturing technology for the footwear meant for diabetes patients.

- tehnologia de realizare a incaltamintei pentru diabetici;
- specificatia tehnica 402/20 oct.2008.

*** Produs/Tehnologie:**

- Incaltaminte fabricata in sistem de confectie IL si IF, destinata persoanelor bolnave de diabet;
- Tehnologie de realizare a incaltamintei pentru persoane bolnave de diabet.

Footwear confection according to system IL and IF, meant for diabetes patients

5.1.2 Security and protection equipment

GLOBAL TRENDS AND ACCOMPLISHMENTS

The users of protection clothing and equipment from Europe are among the most sophisticated and exigent beneficiaries; the specifications of the protection products, commercialized in EU, are defined by various laws and standards that are regularly adapted to the technical progress. Moreover, in order to achieve an optimum equilibrium between protection and performance, the improved comfort and ergonomic properties are getting more and more essential.
Contributing to the European domination as regards quality and innovation, the textile industry and the scientific community develop new accomplishments in the domains of special fibres, textile material functionalization and integration of micro-electronic components into intelligent textiles, as well as in production technologies, including the accomplishing of customized prototypes and products.
The development of intelligent EIP is mainly directed towards:
• The protection of the user's life in an aggressive environment
• The monitoring of the person from the point of view of location and/or vital signs
These established priorities are solved by:
• researches regarding the protection ensuring in a hostile environment: intelligent insulation being able of adapting to the evolution of the surrounding conditions; reactivity in the case of the work environment particularities (harmful agents);
• researches for the creation of equipment endowed with elements for the localization of persons;
• researches regarding the maintaining/monitoring of the body vital functions.
At global level the following can be mentioned:
• the sequential approaching of the problems related to the protection equipment in correlation with the involved environment factors;
• the preoccupation for the compatible-rendering of the user-intelligent protection equipment for the purpose of maintaining the human operational capacities;
• directed approaches, at the nanotechnology level, for the obtaining of new generations of programmable, miniaturized, multifunctional substances, with high maintenance and durability, having a friendly utilization and an acceptable production cost;
• the approaching of this domain by means of the environment ecology, the biodegradable components being chosen;
• conceptual and practical accomplishments of certain devices that use the human energy for activation.

TENDINTE SI REALIZARI PE PLAN MONDIAL

Utilizatorii de îmbracaminte şi echipamente de protecţie din Europa, se afla printre cei mai sofisticaţi şi pretenţioşi beneficiari; specificaţiile produselor de protecţie, comercializate în UE, sunt definite de diverse legislaţii şi standarde care sunt în mod regulat adaptate la progresul tehnic. În plus, pentru a realiza un echilibru optim între protecţie şi performanţa, devin esenţiale proprietaţile de confort şi ergonomice îmbunataţite.
Contribuind la dominatia europeana în ceea ce priveşte calitatea şi inovaţia, industria textila şi comunitatea ştiinţifica dezvolta noi realizari în domeniile fibrelor speciale, funcţionalizarii materialelor textile şi integrarii componentelor micro-electronice în textilele inteligente, precum şi în tehnologiile de producţie, inclusiv realizarea de prototipuri şi produse personalizate.
Dezvoltarea EIP inteligente este dirijata cu prioritate spre:
• protectia vietii purtatorului in mediu agresiv
• monitorizarea persoanei din punct de vedere al locatiei si/sau semnelor vitale
Aceste prioritati stabilite sunt solutionate prin:
• cercetari pentru asigurarea protectiei in mediu ostil: izolare inteligenta capabila de adaptare la evolutia conditiilor ambientale ; reactivitatea in cazul particularitatilor mediului de lucru (agenti nocivi)
• cercetari pentru crearea de echipamente dotate cu elemente de localizare a persoanei
• cercetari privind mentinerea / monitorizarea functiilor vitale ale corpului
La nivel mondial se distinge:
• abordarea secventiala a problematicii echipamentelor de protectie in corelare cu factorul de mediu implicat;
• preocuparea pentru compatibilizarea purtator-echipament inteligent de protectie in scopul mentinerii capacitatilor operationale umane;
• abordari dirijate, la nivelul nanotehnologiilor, pentru obtinerea de noi generatii de substante programabile, miniaturizate, multifunctionale cu mentenanta si durabilitate mare, cu utilizare prietenoasa si un cost de productie acceptabil;
• abordarea acestui domeniu prin prisma ecologiei mediului inconjurator, optandu-se pentru componente bio-degradabile;
• realizari conceptuale si practice ale unor dispozitive ce utilizeaza pentru activare energia umana

5.1.2 Security and protection equipment

1. Project – Multifunctional technical textiles for protection clothing - 2005-2008

Objectives:

• the technical-scientific substantiation of the solutions for accomplishing multifunctional technical textile materials meant for the protection clothing;

• the elaboration of methods for inducing certain functionalities to the technical textile materials, and the scientific designing of these;

• the accomplishing of laboratory technologies for inducing certain selective functionalities to the textile materials meant for the protection clothing;

• the accomplishing of multifunctional technical textile materials meant for the protection clothing;

• the experimenting of the multifunctional textile materials and the accomplished protection clothing ME;

• the accomplishing and experimenting of protection clothing prototypes made of multifunctional textile materials.

Results:

Product: Antistatic and protection costume against thermal risks

It ensures protection against heat and/or fire combined with the signalling when it is too close to the heat source and the signalling of the user's presence when it is too close to certain moving machinery (semi-finished transport cranes, casting ladles, etc.)

Raw material: fire-proof woven fabric made of 100% cotton fibers

Mechanical characteristics of the woven fabric:

• break resistance: min. 800 N in the warp
min. 400 N in the weft

• tear resistance: min. 15 N

a)

Characteristics of protection against heat and/or fire:

• resistance to the limited flame propagation

- average duration of flame persistence: 0 s
- average duration of post-incandescence: 0 s

• resistance to the convection heat

- time of temperature increasing of the inner side by 24 °C: HTI = 7s
- performance level B1 (out of maximum 5)

• resistance to the radiant heat

- average time for reaching level t2 (threshold temperature) min. 23 s, performance level C1 (out of maximum 5)

1. Proiect – Textile tehnice multifunctionale pentru imbracaminte de protectie - 2005-2008

Obiective :

• fundamentarea tehnico-stiintifica a solutiilor de realizare a materialelor textile tehnice multifunctionale destinate imbracamintei de protectie

• elaborare metode de inducere a unor functionalitati materialelor textile tehnice si proiectarea stiintifica a acestora

• realizare tehnologii de laborator de inducere a unor functionalitati selective materialelor textile destinate imbracamintei de protectie

• realizare materiale textile tehnice multifunctionale destinate imbracamintei de protectie

• experimentarea materialelor textile multifunctionale si a ME de imbracaminte de protectie realizate

• realizarea si experimentarea de prototipuri de imbracaminte de protectie din materiale textile multifunctionale

Rezultate:

Produs: Costum de protectie antistatic si impotriva riscurilor termice

Asigura protecție împotriva caldurii şi/sau focului combinat cu semnalizarea apropierii prea mari de sursa de caldura si semnalizarea prezenței utilizatorului în apropierea unor utililaje în mişcare (de ex. macarale de transport semifabricate, oale de turnare etc.)

Materia prima: tesatura din 100% fibre bumbac ignifugata

Caracteristici mecanice tesatura:

• rezistenta la rupere: min. 800 N în urzeala
min. 400 N în batatura

• rezistenta la sfasiere: min. 15 N

Caracteristici de protectie împotriva caldurii si/sau focului:

• rezistenta la propagarea limitata a flacarii

- durata medie de persistenta a flacarii: 0 s
- durata medie de post-incandescenta: 0 s

• rezistenta la caldura de convectie

- timp de crestere a temperaturii fetei interioare cu 24 °C: HTI = 7s
- nivel de performanta B1 (din maxim 5)

• rezistenta la caldura radianta

- timp mediu pentru atingerea nivelului t2 (temperaturii de prag) min. 23 s, nivel de performanta C1 (din maxim 5)

5.1.2 Security and protection equipment

Utilization domain
• industry: metallurgic industry, iron and steel industry, glass industry
• hot construction sectors

Product: Protection costume against electrostatic risks and electromagnetic radiation
It ensures protection against electromagnetic radiation combined with antistatic properties
Raw material: woven fabric having conductive properties
Mechanical characteristics of the woven fabric:
• Traction resistance (in conformity with EN 14325: 2004)
- min. 1000 N in the direction of warp and weft- performance level – class 6 (of maximum 6)
• tear resistance (according to EN 14325: 2004)
- min. 120 N in the warp
- min. 70 N in the weft performance level –class 3 (of maximum 5)
• resistance to abrasion (in conformity with EN 14325: 2004)
- min. 700 cycles – performance level –class 3 (of maximum 6)
Protection characteristics:
• surface resistivity (in conformity with SR EN 1149:2002) - 7,22x104 Ω (requirement < 109 Ω)

Domeniu de utilizare
• industrie: metalurgica, siderurgica, a sticlei
• sectoare calde din constructii

Produs: Costum de protectie impotriva riscurilor electrostatice si a radiatiilor electromagnetice
Asigura protecție împotriva radiațiilor electromagnetice combinat cu propietați antistatice
Materia prima: tesatura cu proprietati conductive
Caracteristici mecanice tesatura:
• rezistenta la tractiune (conform EN 14325: 2004)
- min. 1000 N pe directia urzelii si bataturii- nivel de performanta – clasa 6 (din maxim 6)
• rezistenta la sfasiere (conform EN 14325: 2004)
- min. 120 N in urzeala
- min. 70 N in batatura nivel de performanta –clasa 3 (din maxim 5)
• rezistenta la abraziune (conform EN 14325: 2004)
- min. 700 cicluri - nivel de performanta – clasa 3 (din maxim 6)
Caracteristici de protectie:
• rezistivitatea de suprafata (conform SR EN 1149:2002) - 7,22x104 Ω (cerinta < 109 Ω)

b)

Utilization domain
• pharmaceutical industry, electrotechnical industry, petrochemical or pyrotechnical industry

Domeniu de utilizare
• industria farmaceutica, industria electrotehnica, industria petrochimica sau pirotehnica

Product: Protection costume against chemical risks with antistatic properties and characteristics of signalling the presence of the worker
It ensures protection against spraying with liquid chemical substances combined with antistatic properties and the signalling of the user's presence on roads or near moving machinery (for example semi-finished transport cranes etc.)
Raw material: woven fabric made of 100% PES with conductive properties

c)

Produs: Costum de protectie impotriva riscurilor chimice cu proprietati antistatice si caracteristici de semnalizare a prezentei lucratorului
Asigura protecție împotriva stropirii cu substanțe chimice lichide combinat cu propietați antistatice si semnalizarea prezenței utilizatorului pe cai de circulatie rutiera sau în apropierea unor utililaje în mișcare (de ex. macarale de transport semifabricate etc.)
Materia prima: tesatura din 100% PES cu proprietati conductive

Legend:
a) Antistatic and protection costume against thermal risks
b) Protection costume against electrostatic risks and electromagnetic radiation
c) Protection costume against chemical risks with antistatic properties and characteristics of signalling the presence of the worker

5.1.2 Security and protection equipment

Mechanical characteristics of the woven fabric (in conformity with SR EN 14325:2004):
• break resistance: min. 1000 N in the warp and weft
• performance level – class 6 (of maximum 6)
• tear resistance: min. 100 N (in conformity with SR EN 14325:2004)
• performance level – class 5 (of maximum 6)
Protection characteristics:
• index of chemical substance rejection: min. 95%, as compared with: sulphuric acid 30%; sodium hydrate 10%, p-xilen
• index of chemical substance penetration: max. 1%, as compared with sulphuric acid 30%; sodium hydrate 10%, p-xilen
• surface resistivity (in conformity with SR EN 1149-1:2002) - under 5x109 Ω

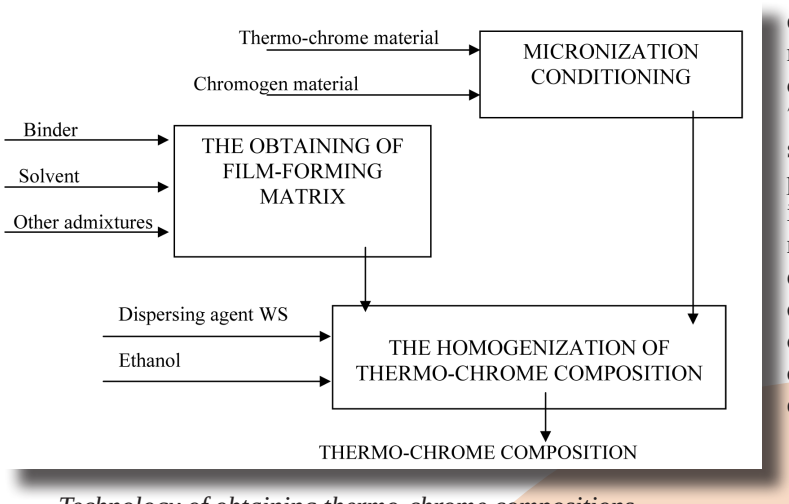
Utilization domain
• Petrochemical industry, chemical industry

Technologies:
Technology of obtaining thermo-chrome compositions
The obtained thermo-chrome compositions are reversible in the temperature domain 30-70ºC, are stable to storage and preserve their property of thermal reversibility for minimum 10 cycles of thermal excitation (heating-cooling). The chart of operations in the obtaining of thermo-chrome compositions

Caracteristici mecanice tesatura (conform SR EN 14325:2004):
• rezistenta la rupere: min. 1000 N în urzeala si batatura
• nivel de performanta – clasa 6 (din maxim 6)
• rezistenta la sfasiere: min. 100 N (conform SR EN 14325:2004)
• nivel de performanta – clasa 5 (din maxim 6)
Caracteristici de protectie:
• indice de respingere substante chimice : min. 95% fata de: acidul sulfuric 30%; hidroxid de sodiu 10%, p-xilen
• indice de penetrare substante chimice : max. 1% fata de acidul sulfuric 30%; hidroxid de sodiu 10%, p-xilen
• rezistivitatea de suprafata (conform SR EN 1149-1:2002) - sub 5x109 Ω

Domeniu de utilizare
• industria petrochimica, chimica

Tehnologii:
Tehnologie de obtinere compozitii termocrome
Compozitiile termocrome obtinute sunt reversibile in domeniul de temperatura 30-70 0C, sunt stabile la stocare si isi conserva proprietatea de reversibilitate termica pentru minim 10 cicluri de excitare termica (incalzire-racire). Schema operațiilor la obținerea compozițiilor termocrome



Technology of obtaining thermo-chrome compositions

Articles :
• Lucica Cioara, Ioan Cioara, Doina Toma , Analysis of the functionality of woven fabrics used for protective clothing for shielding against electromagnetic waves, The Bulletin of the Polytechnic Institute, Iasi /LVII, Fasc.1-4, 2007
• Lucica. Cioara, Ioan Cioara, Doina Toma , The relationship between structure-properties for antistatic woven fabrics meant for protection equipment, Industria Textila / vol 60

Patents

Articole :
• Lucica Cioara, Ioan Cioara, Doina Toma , Analysis of the functionality of woven fabrics used for protective clothing for shielding against electromagnetic waves, Buletinul Institutului Politehnic Iasi /LVII, Fasc.1-4, 2007
• Lucica. Cioara, Ioan Cioara, Doina Toma , Relația structura-proprietați pentru țesaturi antistatice destinate echipamentelor de protecție, Industria Textila / vol 60

Brevete
• Cerere brevet de inventie- A00455/16.06.2008- Tesatura cu structura compusa pentru echipamente de protectie

5.1.2 Security and protection equipment

• Patent Application- A00455/16.06.2008- Woven fabric with compound structure meant for the protection equipment
Benefits/ effects generated by the project
• the competitiveness increasing of SC STIMPEX S.A and INCDTP, producers of protection clothing made of multifunctional technical textile materials; the adapting of their activity to the market requirements by the accomplishing of personal protection equipment aligned to the EU standards
• the competitiveness increasing of ICECHIM, producer of reversible thermo-chrome compositions
• the safety increasing for the human being, by ensuring the protection characteristics imposed to each type of protection clothing, by the European Norms;
• the reducing of expenses from the budget of social insurances by approx. 1%, as a result of the diminishing and/or elimination of the accidents and/or professional sicknesses, by the endowment of the workers with personal protection equipment of high performance, from the point of view of the protection level, as well as from the point of view of the functional characteristics
• the environment protection, by the accomplishing of certain non-polluting technologies that use non-toxic, pure polymers, and the obtaining of certain "clean" products that offer a high comfort degree
• the protection of the population health from Romania by creating better work and life conditions, by ensuring a physical, mental and social well-being

2. Project – The substantiation of the directed synergies of the nano-/micro-components integrated into composite textile materials, with the purpose of ensuring certain intelligent functions of the protection equipment concerning the aggressive media - 2006-2008
Objectives:
• the analysis of the complex of requirements imposed to the protection equipment, the identifying of the conventional (passive) functions and the estimation of their level;
• the theoretical substantiation of the physical and chemical processes carried out at the environment – protection equipment interface and the effecting of certain studies for simulating the behaviour of component synergy in the structure of composite textile materials for the ensuring of intelligent functions;
• the accomplishing of impervious composite textile materials and textile materials having an electromagnetic shield effect;
• the functional characterization of the accomplished textile composite materials;
• the identifying of the technical solutions for the technologic integration of the components at the level of the protec-

Beneficii/ efecte generate de proiect
• cresterea competitivitatii SC STIMPEX S.A si INCDTP producatori de imbracaminte de protectie din materiale textile tehnice multifunctionale; adaptarea activitatii acestora la cerintele pietii prin realizarea de echipamente individuale de protectie aliniate standardelor UE
• cresterea competitivitatii ICECHIM producator de compozitii temocrome reversibile
• creşterea siguranţei pentru om prin asigurarea caracteristicilor de protecţie impuse fiecarui tip de imbracaminte de protectie prin Normativele Europene;
• reducerea cheltuielilor de la bugetul asigurarilor sociale cu cca 1% ca urmare a diminuarii si/sau eliminarii accidentelor si/sau îmbolnavirilor profesionale prin dotarea lucratorilor cu echipamente individuale de protectie performante atat din punct de vedere al nivelului de protectie asigurat cat si din punct de vedere al caracteristicilor functionale
• protectia mediului prin realizarea unor tehnologii nepoluante ce utilizeaza polimeri netoxici, puri şi obţinerea unor produse "curate" ce confera un grad înalt de confort
• protejarea sanatatii populaţiei din România prin crearea de condiţii mai bune de munca şi viaţa prin asigurarea unei bunastari fizice , mentale şi sociale

2. Proiect – Fundamentarea sinergiei dirijate a nano-/ microcomponentelor integrate în materiale textile compozite, în scopul asigurarii unor funcţii inteligente ale echipamentelor de protecţie pentru medii agresive - 2006-2008
Obiective:
• analiza complexului de cerinţe impuse echipamentelor de protecţie, identificarea funcţiilor convenţionale (pasive) şi estimarea nivelului acestora
• fundamentarea teoretica a proceselor fizice şi chimice desfaşurate la interfaţa mediu – echipament de protecţie si efectuarea unor studii de simulare a manifestarii sinergiei componentelor în structura materialelor textile compozite, pentru asigurarea funcţiilor inteligente
• realizarea de materiale textile compozite impermeabile si materiale textile cu efect de ecranare electromagnetica
• caracterizarea funcţionala a materialelor textile compozite realizate
• identificarea soluţiilor tehnice pentru integrarea tehnologica a componentelor la nivelul echipamentelor de protecţie.
Rezultate:
• Metodologie de caracterizarea funcţionala a materialelor

tion equipment.

Results:

• Functional characterization method of the impervious composite textile materials resistant to chemical agents (100% PES woven fabric coated with chloroprene rubber and 100% PA woven fabric coated with PVC), electroconductive textile materials (woven fabrics/knitted fabrics containing metallic fibres/yarns, cotton/Cu, PES/stainless steel)- with the purpose of evaluating the modality of correlating these material characteristics with the functions ensured by the protection equipment;

• The metodology of structural and technologic designing of the protection equipment with intelligent functions – projects for 3 EIP models.

3. Project – The developing of new technologies regarding the obtaining of non-asbestos fireproof materials covered with elastomers for thermal protections and insulations - 2006- 2008

Objectives:

• the orientation of the research towards the accomplishing of advanced products and technologies which should lead to the modernization and to the increasing of the economy competitiveness, imposed by the requirements of the integration into the EU economic area;

• the developing of a new range of ecologic materials for thermal protections and insulations, in conformity with the EU Directives regarding the asbestos substitution;

• the effecting of integrated/interdisciplinary researches which aim at the whole cycle of „research-technologic achievement under ecologic conditions-utilization";

• knowledge development in the domain of science and new material engineering, by collaborations with higher education institutes;

• the developing of a partnership between higher education institutes, R-D units and economic units that are beneficiaries of the research results;

• the increasing of the economic unit capacity of absorbing and assimilating the results of the research activity by technologic transfer;

• the increasing of performances by adapting the activity to the market requirements and demands;

• the increasing of the conscious-rendering degree for the trading companies as regards the harmful effects of the asbestos and the importance of its replacing by new, ecologic materials;

• the developing of research activities and the simulation of the technologic reorganization at regional level, having an economic and social impact.

textile compozite impermeabile rezistente la agenti chimici (tesatura 100% PES peliculizare cu cauciuc cloroprenic si tesatura 100% PA peliculizate cu PVC), materiale textile electroconductive (tesaturi/tricoturi cu continut de fibre/fire metalice, bbc/Cu, PES/inox)- in scopul evaluarii modului de corelare a caracteristicilor acestor materiale cu functiile asigurate de echipamentul de protectie;

• Metodologie de proiectare structurala si tehnologica a echipamentelor de protecție cu funcții inteligente- proiecte pentru 3 modele de EIP.

3. Proiect - Dezvoltarea de tehnologii noi privind obtinerea de materiale ignifuge non azbest acoperite cu elastomeri pentru protectii si izolatii termice - 2006- 2008

Obiective:

• orientarea cercetarii spre realizarea de produse si tehnologii avansate care sa conduca la modernizarea si cresterea competitivitatii economiei, impusa de cerintele integrarii in spatiul economic al UE;

• dezvoltarea unei noi game de materiale ecologice pentru protectii si izolatii termice, in conformitate cu Directivele UE privind inlocuirea azbestului;

• efectuarea unor cercetari integrate/interdisciplinare care urmaresc intreg ciclul "cercetare-realizare tehnologica in conditii ecologice-utilizare";

• dezvoltarea cunoasterii in domeniul stiintei si ingineriei materialelor noi, prin colaborari cu institute de invatamant superior;

• dezvoltarea parteneriatului intre institute de invatamant superior, unitati de C-D si unitati economice beneficiare a rezultatelor cercetarii;

• cresterea capacitatii unitatilor economice de a absorbi si asimila rezultatele activitatii de cercetare prin transfer tehnologic;

• cresterea performantelor prin adaptarea activitatii la cerintele si exigentele pietei;

• cresterea gradului de constientizare a societatilor comerciale cu privire la efectele nocive ale azbestului si importanta inlocuirii acestuia cu materiale noi, ecologice;

• dezvoltarea de activitati de cercetare si stimularea restructurarii tehnologice la nivel regional, cu impact economic si social.

5.1.2 Security and protection equipment

Results:

Product/Technology:

• Technical woven fabrics of multilayer-architecture type based on non-asbestos woven fabrics impregnated with elastomer blends used in high temperature or dangerous areas as concerns the exposure to attacks/thermal accidents.

• Woven fabric made of heat-resisting acrylic fibres (waterproof fibres) with variable textures and thicknesses, coated with elastomer compound solutions. By superposing more material layers, layered materials for the construction of certain performant thermal screens, having the role of protection to fire, were obtained.

• Main characteristics:

- resistance to high temperatures;
- break resistance;
- resistance to repeated bending;
- combustibility class (fireproof).

Utilization domains

• The accomplishing of protection equipment (gloves, aprons), cord packing, diaphragms, gaskets, protection covers and curtains

Rezultate:

Produs/Tehnologie:

• Tesaturi tehnice de tipul arhitecturilor multistrat pe baza de tesaturi non azbest impregnate cu blenduri elastomerice, utilizate in zone de lucru cu temperaturi ridicate sau cu pericol de expunere la atacuri./accidente termice.

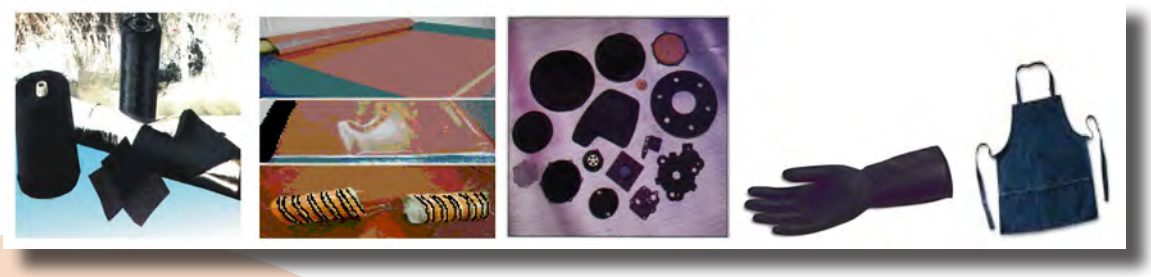
• Tesatura formata din fibre acrilice termostabilizate (ignifuge) cu contexturi si grosimi variabile, peliculizate cu solutii de compounduri elastomerice . Prin suprapunerea mai multor straturi de material s-au obtinut materiale stratificate pentru construirea unor ecrane termice performante cu rol de protectie la foc

• Caracteristici principale:

- rezistenta la temperaturi inalte;
- rezistenta la rupere;
- rezistenta la indoiri repetate;
- clasa de combustibilitate (ignifug).

Domenii de utilizare

• realizarea de echipamente de protectie (manusi, sorturi), garnituri de etansare, diafragme, mansoane, huse si perdele de protectie



Fireproof protection equipment

Benefits/effects

• the increasing of the economic unit capacity of absorbing and assimilating the results of the research activity by technologic transfer;

• the increasing of performances by adapting the activity to the market requirements and demands;

• the increasing of the conscious-rendering degree for the trading companies as regards the harmful effects of the asbestos and the importance of its replacing by new, ecologic materials;

• the developing of research activities and the simulation of the technologic reorganization at regional level, having an economic and social impact.

Beneficii/efecte

• cresterea capacitatii unitatilor economice de a absorbi si asimila rezultatele activitatii de cercetare prin transfer tehnologic;

• cresterea performantelor prin adaptarea activitatii la cerintele si exigentele pietei;

• cresterea gradului de constientizare a societatilor comerciale cu privire la efectele nocive ale azbestului si importanta inlocuirii acestuia cu materiale noi, ecologice;

• dezvoltarea de activitati de cercetare si stimularea restructurarii tehnologice la nivel regional, cu impact economic si social.

5.1.2 Security and protection equipment

Technology
• Technologic process of obtaining non-azbestos fireproof materials covered with elastomers meant for thermal protection and insulations

Tehnologie
• Proces tehnologic de obtinere a materialelor ignifuge non azbest acoperite cu elastomeri pentru protectii si izolatii termice

STRATEGIC DIRECTIONS 2009

The development and integration of new technologies for the advanced personal protection systems will lead to a significant reducing of labour accidents, including the emergency and rescue operations. As a result, the professional accidents and diseases related to working in risk media will be considerably reduced.
The general objective of RDI - INCDTP strategy in the domain of security and protection equipment, in accordance with the strategy in this domain at European level, is represented by the developing of improved solutions for an efficient protecting and ensuring of citizens' health on the basis of innovative and intelligent textiles.
For fulfilling this general objective, the priorities of the R-DI activity carried out as part of the national research programmes (PNCDI II) and the European research programmes (FP7), in 2009 the following will be achieved:
• The developing of intelligent protection textiles
• The developing of personal protection equipment for intervention and rescue operations.

DIRECTII STRATEGICE 2009

Dezvoltarea şi integrarea noilor tehnologii pentru sistemele avansate de protecţie individuala vor conduce la o reducere semnificativa a accidentelor de munca, inclusiv a operaţiilor de urgenţa şi salvare. Ca rezultat, se vor reduce semnificativ accidentele şi bolile profesionale legate de munca în medii de risc.
Obiectivul general al strategiei CDI- INCDTP in domeniul echipamentelor de securitate si protectie, in acord cu strategia la nivel european in acest domeniu, il constitue dezvoltarea de solutii imbunatatite pentru o protectie eficienta si asigurarea sanatatii cetatenilor pe baza textilelor inovatoare si inteligente.
Pentru atingerea acestui obiectiv general, prioritatile activitatii CDI desfasurata in cadrul in programelor nationale de cercetare (PNCDI II) si programelor europene de cercetare (FP7), in anul 2009 sunt:
• dezvoltatea de textile de protectie inteligente
• dezvoltarea de echipamente individuale de protectie pentru operatiuni de interventie si salvare.

5.1.3 Medical destination articles

GLOBAL TRENDS AND ACCOMPLISHMENTS

Materials engineering is directly involved in activity fields whose diversity supports a permanent enlargement. Next to the traditional fields, increasingly more applications emerge in the medical field, informatics, spatial techniques and electronics. The applications in the medical field are generated both by the special requests imposed by practices, and by the continuous evolution of medical sciences. Together with the biocompatibility concept emerged, the use of materials compatible with human body (biomaterials) is needed for a large array of properties and their transfer into medical devices, which should correspond to some strict functional parameters imposed.

Medical techniques supposing the use of biomaterials compatible with the human body as well as clinical methods of intervention and investigation became, in their turn, extremely sophisticated. The applications employing biomaterials are diverse: from bio-resorbable implants to joint prostheses, and from wheelchairs to artificial organs, from the modeling of dialysis therapy to the one of the cardiovascular system, and even going up to assure the hospital management technology and population health monitoring means.

All the researches directed to these need the collaboration of specialists with complementary expertise. Such preoccupations match the assembly of researches and achievements that gave birth to biological and medical engineering, technological support indispensable for medical advances.

In close connection to the strategic objectives highlighted on global level, researches carried out by INCDTP within the PNCDI projects were focused on the analysis and development of medical devices based on textile and polymeric materials with advanced functionality, respectively:

1. **Project**: « Invasive and non-invasive medical devices of high-tech textile materials » – 2005-2008

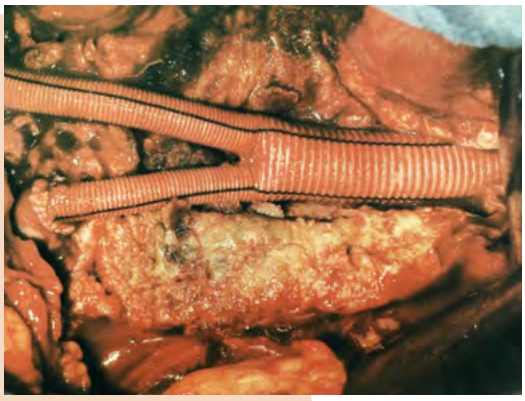
Results in 2008:

- 3 products homologated

1. **Product**: Woven vascular prosthesis

Characteristics:

- weight: 56 ± 2,8 g;
- thickness: 3,6± 0,2 mm;
- breaking force: min.45 daN – base, min.30 daN – ramification;



Woven vascular prosthesis

TENDINTE SI REALIZARI PE PLAN MONDIAL

Ingineria materialelor este direct implicata in acele domenii de activitate a caror diversitate suporta o permanenta expansiune. Alaturi de domeniile traditionale apar tot mai multe aplicatii in medicina, informatica, tehnica spatiala, electronica. Aplicatiile din domeniul medical sunt generate atat de cerintele deosebite impuse de practica, cat si de continua evolutie a medicinei ca stiinta. Aparitia conceptului de biocompatibilitate impune folosirea unor materiale compatibile cu corpul uman (biomateriale), cu un spectru larg de proprietati si transformarea lor in dispozitive medicale, care sa corespunda unor parametri functionali strict impusi.

La randul lor, tehnicile medicale care presupun folosirea biomaterialelor, compatibile cu corpul uman, precum si metodele de interventii si investigatii clinice au devenit extrem de sofisticate. Aplicatiile care utilizeaza biomateriale sunt diverse: de la implanturi bioresorbabile la proteze articulare, de la scaunele cu rotile pana la organele artificiale, de la modelarea terapiei de dializa pana la modelarea sistemului cardiovascular, ajungand chiar la asigurarea tehnologiei managementului in spitale si urmarirea starii de sanatate a populatiei.

Toate aceste cercetari necesita colaborarea specialistilor cu expertiza complementara. Preocuparile se incadreaza in ansamblul cercetarilor si realizarilor care au dat nastere ingineriei biologice si medicale, ca suport tehnologic indispensabil progreselor din medicina.

In stransa legatura cu obiectivele strategice evidentiate pe plan mondial, cercetarile derulate de I.N.C.D.T.P., in cadrul proiectelor din PNCDI, au fost directionate spre analiza si dezvoltarea de dispozitive medicale pe baza de materiale textile si materiale polimerice cu functionalitate avansata, respectiv:

1. **Proiect**: « Dispozitive medicale invazive si neinvazive din materiale textile high-tech » - 2005 – 2008

Rezultate in anul 2008: 3 produse omologate

1. **Produs**: Proteza vasculara tesuta

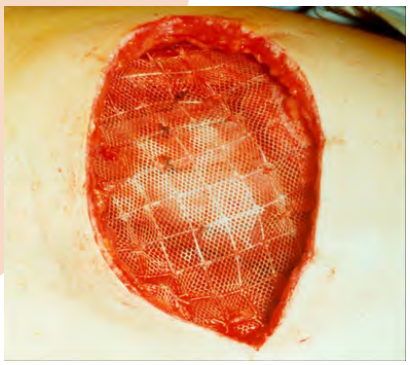
Caracteristici:

- masa: 56 ± 2,8 g;
- grosime: 3,6± 0,2 mm;
- sarcina de rupere: min.45 daN – baza, min.30 daN – ramificatie;
- alungirea la rupere: max.50% - baza, max.55% - ramificatie;

- breaking elongation: max.50% - base, max.55% - ramification;
- warp thickness: 436 ± 22 yarns/10 cm;
- weft thickness: 230 ± 13 yarns/10 cm.

2. **Product**: Invasive medical device with textile structures meant for thoracic surgery
Characteristics:
- strong support of the wound and higher supporting degree of thoracic cavity during post-surgery physiotherapy;
- maintain the breathing function; endothoracic structure protection;
- keep a certain degree of the wall extension;
- remove the potential retentions of fluids and blood accumulation inside thoracic cavity
Domeniul de utilizare: chirurgie toracica

- desime in urzeala: 436 ± 22 fire/10 cm;
- desime in batatura: 230 ± 13 fire/10 cm.



Surgical net

2. **Produs** : Dispozitiv medical invaziv cu structuri textile destinate chirurgiei toracice
Caracteristici:
- suport puternic al ranii si grad marit de sustinere a cavitatii toracice;
- mentinerea functiei respiratorii si protejarea structurii endotoracice;
- eliminarea posibilitatilor de retinere a fluidelor si de acumulare a sangelui in interiorul cavitatii toracice.
Domeniul de utilizare: chirurgie toracica

3. **Product**: Elastic bandage for post-surgery recovery
Characteristics:
- non-irritating skin contact surface;
- the possibility of adapting the body movements to the requirements imposed by the morphologic characteristics of the various organs.
The utilisation field: treatment and prevention of vein and tromboses, leg ulceration and vein varics.

Elastic bandage

3. **Produs**: Pansament elastic pentru recuperare postoperatorie
Caracteristici:
- suprafata de contact cu pielea neiritanta;
- posibilitatea adaptarii la miscarile corpului si la cerintele impuse de caracteristicile morfologice ale diferitelor organe;
Domeniul de utilizare: tratamentul si prevenirea trombozelor venoase, a ulceratiei picioarelor si a varicelor venoase.

2. **Project**: « Assistance / Recovery of orthostatism and of severely disabled walk for old people and patients with cardio-respiratory dysfunctions and/or serious neural-locomotive deficiencies by the help of robotized orthetic systems» - 2005-2008

• **Results**: technology transfer documentation for a number of 4 knits made of yarns and support fabric

•**Products**: Unisex underwear
Characteristics
- textile raw materials (fibers, yarns) thus selected to optimally satisfy the reliability and wear comfort requests of disabled persons
Novelty elements:
- design and achievement of high value-added knitted or wo-

Unisex underwear

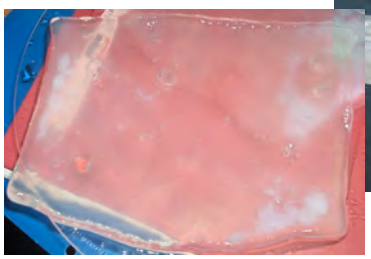
2. **Proiect**: "Asistarea / Recuperarea ortostatismului si a mersului la batranii cu severe dezabilitati si la bolnavii cu insuficiente cardio-respiratorii si /sau deficiente neuro-locomotorii grave cu ajutorul unor sisteme ortetice robotizate" - 2005-2008

• **Rezultate**: documentatie de transfer tehnologic pentru 4 tricoturi din fire si tesatura suport;
• **Produse**: Lenjerie de corp unisex
Caracteristici principale:
- materii prime textile (fibre, fire) selectionate astfel incat sa satisfaca optimal cerinte de fiabilitate si de confort in purtare, pentru persoanele cu dizabilitati
Elemente de noutate:
proiectarea si realizarea de elemente textile tricoate sau tesute cu valoare adugata mare;

ven textile elements;
- elaboration of embossed solution, part of the exoskeleton
Application fields: health – medical field, recovery, leisure activities
Benefits:
- enhance and maintain the comfort state of disabled persons
- textile products diversification

- elaborare solutii de gofre, parte componenta a exoscheletului
Domenii de utilizare: sanatate - medicina, recuperare, timp liber
Beneficii:
- imbunatatirea si mentinerea starii de confort la persoanele cu dizabilitati;
- diversificare produse textile

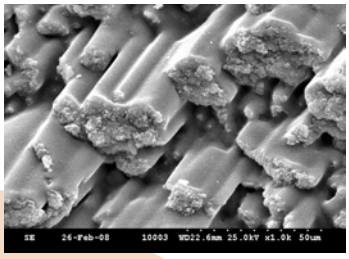
3. **Project**: « Set of in vitro testing methods for the controlled releasing capacity of various medicine substances from collagen hydro-gels » – 2006-2008
Results:
Products: Drug delivery type of collagen hydro-gels – achieved of collagen febrile gels type I, reticulated with glutaraldehyde to form some in vitro and in vivo stable structural meshes. In the composition of CG-GA hydro-gel achieved, the gradually released active substance is gentamicyn.



Collagen hydro-gel

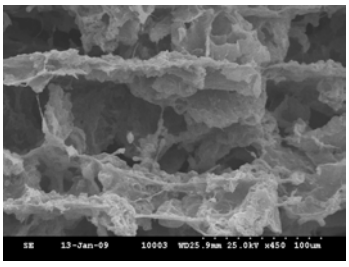
3. **Proiect**: "Stabilirea metodelor de testare in vitro a capacitatii de cedare controlata a diverselor substante medicamentoase din hidrogeluri colagenice", 2006-2008
Rezultate:
Produse: Hidrogelurile de colagen – tip drug delivery - se obtin din geluri fibrilare de colagen tip I reticulate cu glutaraldehida pentru formarea unor retele structurale stabile in vitro si in vivo. In compozitia hidrogelului CG-GA realizat, substanta activa cedata gradat este gentamicina.

4. **Project**: « Achievement of new biomaterials with doped supra-molecular collagen structures displaying the piezoelectric properties of liquid crystals, and either electrical and magnetic properties, used in bio-engineering » – 2007-2010
Results: 5 doped collagen supra-structures: matrices and membranes; 2 models of sensors and actuators; laboratory technology for the achievement of doped supra-molecular collagen structures; dopers compatible with the collagen structures



Doped supra-molecular collagen structures

4. **Proiect**: "Realizarea de noi biomateriale cu structuri colagenice supramoleculare dopate, cu proprietati piezoelectrice, de cristale lichide, electrice si magnetice, utilizate in bioinginerie", 2007-2010
Rezultate: 5 suprastructuri colagenice dopate: matrici si membrane; 2 modele de senzori si actuatori; tehnologie de laborator pentru realizarea structurilor colagenice supramoleculare dopate; dopanti compatibili cu structurile colagenice



5. **Project**: « Bio-functionalization of surface for the osteosynthesis implants » – 2006-2008
Results: Laboratory technology for surface bio-functionalization of metal and ceramics implants by means of covers made of OSTEOMEM multi-layered collagen membrane.

OSTEOMEM collagenated implants for orthopedics

5. **Proiect**: "Biofunctionalizarea suprafetei implanturilor pentru osteosinteza", 2006 - 2008
Rezultate: Tehnologie de laborator pentru biofunctionalizarea suprafetei implanturilor metalice si ceramice prin acoperire cu membrana colagenica multistratificata OSTEOMEM. Membrana OSTEOMEM mareste biocompatibilitatea implanturilor utilizate in chirurgia osoasa, prin

5.1.3 Medical destination articles

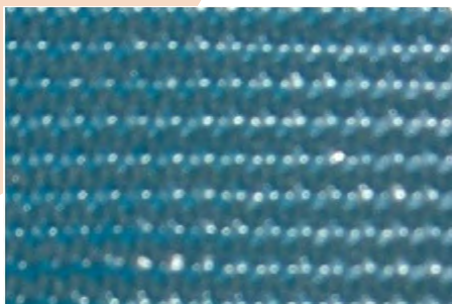
The OSTEOMEM membrane increases the biocompatibility of implants used in bone surgery, by means of its surface functionalization. It also assures osteoblasts adhering and growth, these showing a normal development on its surface.

6. Project: « Development of innovative techniques for the abdominal surgery based on the use of some bio-integrative structures and on the development of new assessing methods for their bio-degradability » – 2006-2008

Results:

Product: Collagenated textile mesh

The MEBIOS collagenated textile meshes are microporous, hydrophilic and biocompatible structures. The preponderant nano-porous structure of the multi-layered collagen membranes allows no penetration of the fibroblast cells (<10mm) inside the meshes.



Plasa textila colagenata

7. Project: « Advanced biomaterials based on bioactive proteic structures, nano-structures doped with metal nano-particles » – 2007-2010

Results:

- Processing technology and leather and fur samples of articles for medical use, as well as experimental models of colloidal solutions;
-Technology for the achievement of experimental models embedding colloidal solutions with antiseptic properties, based on silver nano-particles.

a ***b*** ***c***

Nano-silver colloidal solutions (a) made for medical furs processing (b) and for the manufacture of a microbiologically resistant material (c)

biofunctionalizarea suprafetei acestora. Asigura aderarea si dezvoltarea celulelor osteoblaste, acestea dezvoltandu-se normal pe suprafata ei.

6. Proiect: „Dezvoltarea de tehnici inovative in chirurgia abdominala bazate pe utilizarea unor structuri biointegrabile si dezvoltarea de noi metode de evaluare a biodegradabilitatii acestora", 2006-2008

Rezultate:

Produs: Plasa textile colagenata

Plasele textile colagenate MEBIOS sunt structuri microporoase, hidrofile si biocompatibile. Structura preponderent nanoporoasa a membranelor de colagen multistratificate nu permite patrunderea celulelor fibroblaste (<10 mm) in interiorul plaselor.

7. Proiect: „Biomateriale avansate pe baza de structuri proteice bioactive, nanostructurate dopate cu nanoparticule metalice", 2007-2010

Rezultate:

- Tehnologie de prelucrare si modele de articole de piele si blana pentru uz medical si modele experimentale de solutii coloidale;
- Tehnologie de obtinere a unor modele experimentale de solutii coloidale cu proprietati antiseptice pe baza de nanoparticule de argint.

STRATEGIC OBJECTIVES 2009

- Development of invasive medical devices made of bio-synthetic materials (bio-artificial) and of totally absorbable biocomposites, achievable of absorbable fibers plus an absorbable general matrix;
- Use of bio-sensors for the assessment and monitoring of clinical parameters specific to each category of medical devices, depending on the clinical localization area;
- Deepen the studies on complex phenomena relevant for biomaterials learning and processing;
- Elaboration of some new conceptual models regarding the interaction on the interface joining the bio-fluid and the invasive bio-structure with variable geometry;
- Prediction of optimal parameters for the medical invasive devices type of bio-structures;
- Emerge into new perspectives by means of IT applications in the field of in-vivo and in-vitro analyses processing concerning invasive and non-invasive medical devices behavior when in contact with the human body.

OBIECTIVE STRATEGICE 2009

- dezvoltarea de dispozitive medicale invazive din materiale biosintetice (bioartificiale) si din biocompozite total absorbabile, realizabile din fibre si o matrice generala absorbabile;
- utilizarea de biosenzori pentru evaluarea si monitorizarea parametrilor clinici specifici fiecarei categorii de dispozitive medicale, in functie de zona de amplasare clinica;
- aprofundarea fenomenelor complexe relevante pentru studierea si procesarea biomaterialelor;
- elaborarea unor noi modele conceptuale privind interactiunea la interfata biofluid-biostructura, invazive, cu geometrie variabila;
- predictia parametrilor optimali ai biostructurilor de tip dispozitive medicale invazive;
- deschiderea de noi orizonturi prin aplicatii IT in domeniul procesarii de analize in-vivo si in-vitro, privind comportarea la contactul cu organismul uman a dispozitivelor medicale invazive si neinvazive.

5.1.4 Biotechnologies

GLOBAL TRENDS AND ACCOMPLISHMENTS IN THE TEXTILE FIELD

The developing of certain „clean" technologies and products for the totality of the economic activity sectors is a major objective for the industrialized countries, as well as for the countries in course of development.

The present researches in the environment protection domain are directed towards the elaborating of certain "clean technologies" and the obtaining of certain eco-labeled products. The innovation is the key that ensures the observing of the environment requirements, thus the research has a role of promoter of new technologies, new products, new methods/ procedures which should evaluate the observing of the environment criteria.

The elaborating of the research programs aiming at the environment protection are of the biggest importance in the textile-leather sector, having in view the strong impact of this industry over the environment. The approaching of the ecologic aspects in the practice of the industrial units will lead to the promoting of a favorable image, to the increasing of the consumers' trust in the products
of this industry.

The responsibility for applying a durable society development equally belongs to research, as a factor of technologic innovations and to the productive sector, as a means of implementing this policy.

It is very important that the Romanian research should solve the environment problems caused by this industry, and the results of the researches should be immediately applied, even if the benefic effects
are not visible on short term.

Trends and achievements at global level in the domain of biotechnologies with applications in the textile industry

Specialists from the textile industry are among the first enzyme users. It can be mentioned that the flax and hemp melting is an enzymatic process par excellence. These first utilizations were accomplished without the isolation of enzymes from microorganisms. Since the beginning of our century, amylase, able to hydrolyze the starch, was the first isolated enzyme and was used on industrial scale for the desizing of the starch sized woven fabrics. For 70 years, amylase remained the only example of the biocatalysts' utilization in the textile industry.

The 60's represent the beginning of the protease utilization as a component part of the organic protein detergents meant for stain removing. At the beginning of 70's, the enzyme market is collapsing because of the lack of protection against the allergic character of proteases (the utilization of

TENDINTE SI REALIZARI PE PLAN MONDIAL IN DOMENIUL TEXTIL

Dezvoltarea unor tehnologii si produse „curate" pentru ansamblul sectoarelor activitatii economice este un obiectiv major, atat pentru tarile industrializate, cat si pentru tarile in curs de dezvoltare.

Cercetarile actuale in domeniul protectiei mediului sunt directionate catre elaborarea unor „tehnologii curate" si obtinerea unor produse eco-etichetate. Inovarea este cheia care asigura respectarea cerintelor de mediu, astfel ca cercetarea are rol de promotor de noi tehnologii, noi produse, noi metode/proceduri care sa evalueze respectarea criteriilor de mediu.

Elaborarea programelor de cercetare vizand protectia mediului sunt de cea mai mare importanta in sectorul textile-pielarie, avand in vedere impactul puternic al acestei industrii asupra mediului. Abordarea aspectelor ecologice in practica unitatilor industriale va duce la promovarea unei imagini favorabile, la cresterea increderii consumatorilor in produsele acestei industrii.

Responsabilitatea pentru aplicarea unei dezvoltari durabile a societatii apartine in egala masura cercetarii, ca factor de inovari tehnologice si sectorului productiv, ca aplicator al acestei politici.

Este foarte important ca cercetarea romaneasca sa rezolve problemele de mediu cauzate de aceasta industrie, iar rezultatele cercetarilor sa fie imediat aplicate, chiar daca pe termen scurt efectele benefice nu sunt vizibile.

Tendinte si realizari pe plan mondial in domeniul biotehnologiilor cu aplicare in industria de textila

Specialistii din industria textila sunt printre primii utilizatori de enzime. Se aminteste ca topirea inului si a canepii sunt procese enzimatice prin excelenta. Aceste prime utilizari au fost realizate fara izolarea enzimelor din microorganisme. De la inceputul secolului nostru, amilaza, capabila de a hidroliza amidonul, a fost prima enzima izolata si utilizata pe scara industriala pentru descleierea tesaturilor incleiate cu amidon. Timp de 70 de ani, amilaza a ramas singurul exemplu de utilizare a biocatalizatorilor in industria textila.

Anii '60 marcheza inceputul utilizarii proteazelor ca parte componenta a detergentilor pentru indepartarea petelor pe baza de proteine organice. La inceputul anilor '70 piata enzimelor se prabuseste din cauza lipsei protectiei fata de caracterul alergic al proteazelor (utilizarea de enzime pudra).

powder enzymes). The encapsulation of this enzyme into the fat alcohol (with a low melting point) allowed the utilization without any danger of the alkaline proteases into the washing products.

At the end of 70's, it was discovered that the cellulases added in the process of washing the cotton materials increase their detergency and help the removing of fibrils which occur after repeated washings at the surface of the manufactured textile materials.

The 3rd large stage of enzyme utilization in the textile industry started at the end of the 80's, with the emerging of the market of the certain new isolated (purified) enzymes.

Today, cellulases are included into the formula of many household detergents. Cellulases were successfully launched in the cotton industry in the 80's for "biopolish" (the removing of fibre ends) and "biowash-out" (finishing of Jeans-type articles) treatments, and later for the processing of de Lyocell or Tencel containing materials.

At the beginning of the 20th century, the potential of proteolytic enzymes of removing the wool fibre scales was demonstrated, with a view to reducing the felting tendency. With all the efforts until now, no industrial process was achieved. The reason could be ascribed to the heterogeneous nature of the textile fibers and the non-acceptable resistance losses.

Besides hydrolases (cellulase, amylases, pectinases and proteases), other enzymes with applicability at various stages of the textile finishing were also obtained, such as oxido-reductases. Also, lignolitic enzymes (lacases, lignitic peroxidases and manganic peroxidases) can be used for the decolorizing and detoxifying of waste waters containing azoic compounds coming from dye houses. Another application of enzymes is the catalase utilization for the deterioration of hydrogen peroxide remained in the waste waters after bleaching with H2O2 and its transformation into oxygen and water.

The processes for the impurity elimination and pure fibre (cotton, flax, jute, ramie) isolation present the highest changes for the biotechnology development. The primary (melting) and final purification possibilities with the help of enzymes are very high.

The second group of treatments which can be developed are the procedures that induce new properties to textile materials, for example the preliminary treatments that lead to the improving of the tinctorial properties or those that can change the textile product surface aspect or handle. From the ecologic point of view, biotechnology will surely be present in the recycling domain.

The factors which will influence the development of the textile biotechnologies in the future are:

a. – the development of enzymes with high specificity and

Incapsularea acestei enzime in alcool gras (cu punct de topire scazut) a permis utilizarea fara pericol a proteazelor alcaline in produsele de spalare.

La sfarsitul anilor '70, s-a descoperit ca celulazele adaugate in procesul de spalare a materialelor din bumbac, sporesc detergenta si ajuta la indepartarea fibrilelor care apar dupa spalari repetate la suprafata materialelor textile confectionate.

A treia mare etapa de utilizare a enzimelor in industria textila, a debutat la sfarsitul anilor '80, cu aparitia pe piata a unor enzime izolate (purificate) noi.

Astazi, celulazele sunt incluse in formula multor detergenti casnici. Celulazele au fost introduse cu succes in industria bumbacului in anii '80, pentru tratamente "biopolish" (indepartarea capetelor de fibra) si "biowash-out" (finisarea articolelor tip Jeans), iar mai tarziu pentru prelucrarea materialelor cu continut de Lyocell sau Tencel.

La inceputul secolului XX, s-a demonstrat potentialul enzimelor proteolitice de a indeparta solzii fibrelor de lana, in vederea reducerii tendintei de impaslire. Cu toate eforturile depuse pana in prezent, nu s-a realizat inca un proces industrial. Motivul ar putea fi atribuit naturii eterogene a fibrelor textile si pierderilor neacceptabile de rezistenta.

Pe langa hidrolaze (celulaze, amilaze, pectinaze si proteaze) s-au realizat si alte enzime cu aplicabilitate in diferite faze ale finisarii textile, cum ar fi oxido-reductazele. De asemenea, enzimele lignolitice (lacazele, peroxidazele ligninice si peroxidazele manganice) pot fi utilizate pentru decolorarea si detoxificarea apelor reziduale cu continut de compusi azoici provenite din vopsitorii. O alta aplicatie a enzimelor este utilizarea catalazelor pentru degradarea peroxidului de hidrogen remanent in apele reziduale dupa albirea cu H2O2 si transformarea acestuia in oxigen si apa.

Cele mai mari sanse de dezvoltare a biotehnologiilor le au procesele de eliminare a impuritatilor si de izolare a fibrelor pure (bumbac, in, iuta, ramie). Posibilitatile de purificare primare (topire) si finale cu ajutorul enzimelor sunt foarte mari.

A doua grupa de tratamente care se pot dezvolta, sunt procedeele care induc materialelor textile proprietati noi, de exemplu tratamentele preliminare care conduc la imbunatatirea proprietatilor tinctoriale sau acelea care pot schimba aspectul de suprafata sau de tuseu al produsului textil. Din punct de vedere ecologic, biotehnologia va fi cu siguranta prezenta in domeniul reciclarii.

Factorii care vor influenta dezvoltarea biotehnologiilor textile in viitor sunt:

a. – dezvoltarea enzimelor cu specificitate si puritate ridi-

purity; today people work with enzyme blends that are not all of them necessary for a certain treatment and many times have a negative effect; the utilization of enzymes as pure as possible would allow the process optimization;
b. – the utilization of water insoluble enzymes that are immobilized on soluble supports; these techniques allow the adjusting of enzymatic activity at the requested level and, on the other hand, the enzyme reutilization, a fact that reduces the utilization costs;
c. – the third factor and the most obvious one: biotechnologies that will be developed will represent an ecologic alternative for the chemical industry.

GLOBAL TRENDS AND ACCOMPLISHMENTS IN THE LEATHER PROCESSING FIELD

Most of the leather from all over the world is tanned with chrome basic salt (over 90%), which is toxic for the environment and human beings (carcerigenic). Although remarkable progresses were made regarding the reducing of chrome consumption and the reducing of pollution degree of waters and residual sludge, by the optimization of conventional processes of chrome tanning and bz the accomplishing of tannings combined with chrome and other tanning substances, the problems regarding environment pollution being just partially solved. Also, the problems with the chrome leather wastes and especially the shavings obtained from the equaliying of leather, as well as waste waters and sludge containing chrome are not solved. These wastes represent a big ballast for the tanning houses and need extremelz high expenses for their storing/removing. The only solution for solving this problems is finding an ecologic alternative to chrome tanning. In this sense, the specialists from tanning houses make great efforts for finding a tanning agent that should replace chrome.
On the other hand, tanning houses, by the organic wastes they eliminate, represent a source of raw materials for composts because the composition of solid (non-tanned) wastes offer enough elements to improve the soil composition, and for the plants to valorize certain elements: nitrogen, calcium, magnesium, potassium etc. As there is well-known from the technologic practice, from 1000 kg raw leather (raw material), 250 kg are in the finished leatehr, and the rest of 750 Kg are leather wastes. Having in view that now 99% of the leather wastes are stored in the dust hole, and the quantity of processed leather in a tanning house s of about 10 t /day, there is very important to find certain solutions for the recovery of waste coming from tanning houses.
At global level, leather processing industry is looking for the

cata; astazi se lucreaza cu amestecuri de enzime care nu sunt toate necesare pentru un tratament urmarit si care adeseori au un efect negativ; utilizarea de enzime din ce in ce mai pure ar permite optimizarea procesului;
b. – utilizarea enzimelor imobilizate pe suporturi solubile si insolubile in apa; aceste tehnici permit, pe de o parte, reglarea activitatii enzimatice la nivelul dorit si pe de alta parte, reutilizarea enzimelor, ceea ce diminueaza costurile de utilizare;
c. – al treilea factor si cel mai evident: biotehnologiile care se vor dezvolta vor constitui o alternativa ecologica pentru industria chimica.

TENDINTE SI REALIZARI PE PLAN MONDIAL IN DOMENIUL PRELUCRARII PIEILOR

Cea mai mare parte a pieilor din intreaga lume este tabacita cu saruri bazice de crom (peste 90%), care este considerat toxic pentru mediu si om (cancerigen). Desi s-au facut progrese remarcabile pe linia reducerii consumului de crom si a reducerii gradului de poluare a apelor si namolurilor reziduale, prin optimizarea proceselor clasice de tabacire cu crom si prin realizarea de tabaciri combinate cu crom si alte substante tanante, problemele privind poluarea mediului nu a fost rezolvate decat partial. Nu este rezolvata nici problema deseurilor de piei cromate si in special a razaturilor obtinute de la egalizarea pieilor, si nici a apelor reziduale si namolurilor cu continut de crom. Aceste deseuri constituie un balast foarte mare pentru tabacarii si necesita cheltuieli deosebit de mari pentru depozitarea / inlaturarea lor. Singura solutie pentru rezolvarea problemei este gasirea unei alternative ecologice la tabacirea cu crom. In acest sens, specialistii din tabacarii depun eforturi sustinute pentru gasirea unui agent de tabacire care sa inlocuiasca cromul.
Pe de alta parte, tabacariile, prin deseurile de natura organic pe care le elimina, reprezinta o sursa de materii prime pentru composturi, intrucat compozitia deseurilor solide (netabacite) ofera suficiente elemente care sa imbunatateasca compozitia solurilor, iar plantele sa valorifice unele elemente: azot, calciu, magneziu, potasiu etc. Dupa cum se stie din practica tehnologica, din 1000 kg de piele cruda (materie prima), 250 kg se regasesc in piele finita, iar restul de 750 Kg sunt deseuri de piele. Avand in vedere ca in acest moment 99% din deseurile din pielarie sunt depozitate la groapa de gunoi, iar cantitatea de piei prelucrate intr-o tabacarie este de circa 10 t /zi , se poate aprecia importanta gasirii unor solutii de valorificare a deseurilor provenite din tabacarii.
Pe plan mondial, industria de prelucrare a pieilor cauta solutii

elimination of polluting agents. Thus, for natural leather finishing there are the following purposes:
- The replacing of natural polymers with nanodispersions of aqueous synthetic polymers and the replacing of dispersing agents, plasticizers and reticulants used for the natural polymers.
- The replacing of nitrocellulose lacquers in organic solvents with polymer aqueous nanodispersions with a thermo-reticulation capacity
- Equipment designing and automation for the natural leather surface nanofinishing, ventilation and thermo-reticulation system modification.
- The monitoring of emissions by a sensor system that should determine the volatile organic compounds; sensors used both for the producing of finishing nanodispersions, as well as for their applications
- The neutralizing of the dangerous chemical agents, equipment and techniques for their detection and identification.

x x x

In the present context of scientific knowledge, the projects achieved within I.N.C.D.T.P. tackle at a higher scientific level the problems of the environment protection and the reducing of the negative impact of the textile and leather industry over the environment.
The research projects tackle the economic development strategic objectives of the textile sector from Romania and the European Technology Platform for the Future of Textiles and Garment, by applying the biotechnologies, the "clean" finishing technologies, the advanced technologies of waste water treating, with benefic effects over the environment and human health protection.

1. **Project**: "Advanced Environment Technologies in the textile industry and integrated surveillance and waste water poluting prevention systems " – acronym ECOTEXENV - 2007 – 2010
• **Objectives**: the elaborating and accomplishing of new ecologic technologies for finishing the textile materials, the elaborating of environment integrated systems, the monitoring, simulating of treating technologic processes, the elaborating of advanced treating technologies, with a view to observing the provisions of the environment community Acquis, the diminishing of risks for the environment, the reducing of water, energy consumption and possibilities of re-using the waste waters.

• **Results**:
- „clean" technologies for textile finishing and biotechnolo-

pentru eliminarea agentilor poluanti. Astfel, pentru finisarea pieilor naturale se urmareste:
- inlocuirea polimerilor naturali cu nanodispersii de polimeri sintetici aposi si inlocuirea dispersantilor, plastifiantilor si reticulantilor utilizati pentru polimerii naturali.
- inlocuirea lacurilor nitrocelulozice in solventi organici cu nanodispersii apoase de polimeri cu capacitate de termoreticulare.
- proiectarea si automatizarea echipamentelor pentru nanofinisarea suprafetelor pieilor naturale, modificarea sistemelor de ventilatie si termoreticulare.
- monitorizarea emisiilor cu un sistem de senzori care sa determine compusii organici volatili ; senzori utilizati atat la producerea de nanodispersii pentru finisare cat si la aplicarea lor.
- neutralizarea agentilor chimici periculosi, echipamente si tehnici pentru detectia si identificarea lor.

x x x

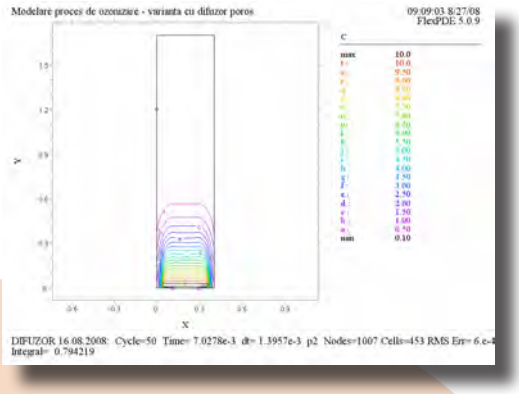
In actualul context al cunoasterii stiintifice, proiectele realizate in cadrul INCDTP abordeaza la un nivel stiintific superior problematica protectiei mediului si reducerea impactului negativ al industriei de textile si de pielarie asupra mediului.
Proiectele de cercetare abordeaza obiective strategice de dezvoltare economica a sectorului textil din Romania si ale Platformelor Tehnologice Europene, prin aplicarea biotehnologiilor, a tehnologiilor „curate" de finisare, a tehnologiilor avansate de epurare a apelor reziduale, cu efecte benefice asupra protectiei mediului si sanatatii umane.

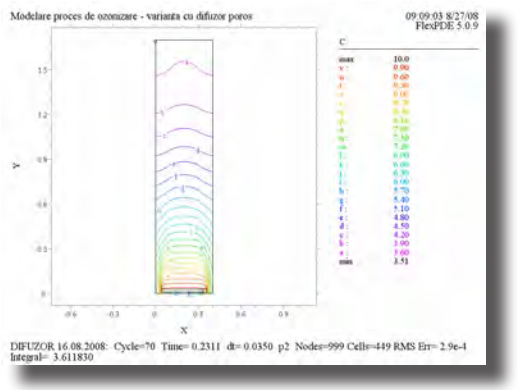
1. **Proiect**: "Tehnologii avansate de mediu in industria textila si sisteme integrate de supraveghere si prevenire a poluarii apelor reziduale" – acronim ECOTEXENV - 2007 – 2010
• **Obiective**: elaborarea si realizarea de noi tehnologii ecologice de finisare a materialelor textile, elaborarea de sisteme integrate de mediu, monitorizare, simulare procese tehnologice de epurare, elaborare tehnologii avansate de epurare, in vederea respectarii prevederilor Aquis-ului comunitar de mediu, atenuarea riscurilor pentru mediul inconjurator, reducerea consumului de apa, energie si posibilitati de reutilizare a apelor epurate.

• **Rezultate**:
- tehnologii „curate" de finisare textila si biotehnologii pen-

gies for attenuating the risk factors for the environment, the situating within national and European environment norms, by the ecologic rendering of the technologies for preliminary preparation-dyeing;
- programs for modeling the finishing biotechnologies and programs for modeling and simulating the modern treatment processes having efficient implications on pollution preventing, finishing and treating network optimizing and possibilities of controlling and automating the treating processes;
- modern waste water treating technologies from the textile industry, by using: last generation ion-changing resins, calixarene class macrocyclic compounds, physical-chemical methods with an ozonization, electroflocculation stage, new types of adsorbent (natural, artificial, synthetic) materials and agricultural and industrial waste products.
• **Product/Technology/Methodologies:** Solutions and conceptual models for:
- Finishing ecotechnologies and biotechnologies for avoiding and limiting the discharging of pollutants in the waste waters
- Nanofiltration and ultrafiltration treatment technologies based on last generation ion exchanging resins

tru atenuarea factorilor de risc pentru mediu, incadrarea in normativele nationale si europene de mediu prin ecologizarea tehnologiilor de pregatire preliminara/vopsire;
- programe de modelare a biotehnologiilor de finisare si programe de modelare si simulare a proceselor moderne de epurare cu implicatii eficiente asupra prevenirii poluarii, optimizarii retetelor de finisare si epurare si posibilitati de control si automatizare a proceselor de epurare;
- tehnologii moderne de epurare a apelor reziduale din industria textila prin utilizarea de: rasini schimbatoare de ioni de ultima generatie, compusi macrociclici din clasa calixarenelor, metode fizico – chimice cu treapta de ozonizare, electrofloculare, noi tipuri de materiale adsorbante (naturale, artificiale, sintetice si produse reziduale agricole si industriale)
• **Produs/Tehnologie/Metodologii:** Solutii si modele conceptuale pentru:
- Ecotehnologii si biotehnologii de finisare pentru evitarea si limitarea evacuarilor de poluanti in apele reziduale
- Tehnologii de epurare prin nanofiltrare si ultrafiltrare pe baza de raşini schimbatoare de ioni de ultima generatie si/ sau compusi macrociclici din clasa calixarenelor





- Treatment technologies by physical-chemical methods – ozonization and electroflocculation stage
- Modeling and simulation of the ozonization treatment process

- Tehnologii de epurare prin metode fizico chimice- treapta de ozonizare si electrofloculare
- Modelarea si simularea procesului de epurare prin ozonizare

2. **Project**: „Complex photocatalytic systems for the advanced treating of waters resulted from the textile industry" – acronym FOTO-COMPLEX - 2007– 2010
• **General objective**: the increasing of the Romanian RD competitiveness in the domains of advanced materials, used in processes that protect the environment, especially of the materials with controlled properties, integrated in complex systems for treating the effluents resulted from the textile

2. **Proiect**: „Sisteme fotocatalitice complexe pentru epurarea avansata a apelor rezultate din industria textila" – acronim FOTO-COMPLEX - 2007– 2010
• **Obiectiv general**: cresterea competitivitatii CD romanesti in domeniul materialelor avansate, utilizate in procese care protejeaza mediul inconjurator, cu precadere al materialelor cu proprietati controlate, integrate in sisteme complexe pentru epurarea efluentilor rezultati din finisajul textil si indepar-

finishing and the simultaneous removing of the organic dyes and heavy metals.

• **Specific objectives**:

- the developing and optimizing of photocatalysis and adsorption complex systems, their modeling, testing and optimizing, the integration into advanced treating processes;
- the developing and optimizing of complex systems of micro-emulsion type, their modeling, testing and optimizing, the integration into advanced treating processes;
- the developing and optimizing of complex systems of micro-emulsion type, their modeling, testing and optimizing, the integration into advanced treating processes;

• **Results**:

- scientific study regarding the photocatalytic processes and photocatalysis applications in the waste water treatment;
- study regarding the pollutant impact over waste waters resulted from the processes of finishing (dyeing with various dye classes) the cellulose textile materials from trade companies before and after treatment with a view to establishing the complex treatment systems and the introduction of photocatalysis module in the technologic treatment flows;
- new photocatalysis technologies which are integrated into complex systems for treating the effluents resulted from the textile finishing and the simultaneous removing of organic dyes and heavy metals

• **Product/Technology/Methodologies**: new technologies for treating the waste waters coming from dyeing with reactive dyes by: photocatalysis, coagulation- flocculation-photocatalysis, in the presence of titanium dioxide films obatined by doctor blade technique on the photoreactor made by Transilvania University Brasov

Photoreactor characteristics: Capacity - 500 ml; endowed with - 3 tubes (Philips) with black light circularily laid in the photoreactor ; Each tube emitts a wide domain of UVA light of 340-400 nm, cu λmax (emission) =365 nm; Average value of 3 Lx (Mavolux 5032 C/B USM).

Photoreactor

• **Utilization domains**: waste wasters treating by photocatalysis integrated into complex systems for treating the effluents resulted from the textile finishing and the simultaneous removing of organic dyes and heavy metals.

tarea simultana a colorantilor organici si a metalelor grele.

• **Obiective specifice**:

- dezvoltarea si optimizarea de sisteme complexe de fotocataliza si adsorbtie, modelarea, testarea si optimizarea lor, integrarea in procese de epurare avansata;
- dezvoltarea si optimizarea de sisteme complexe de tip microemulsie, modelarea, testarea si optimizarea lor, integrarea in procese de epurare avansata;
- realizarea sistemului micro-pilot pentru testarea si optimizarea proceselor de fotocataliza si adsorbtie si pregatire pentru transfer tehnologic;
- valorificarea rezultatelor cercetarii si cresterea vizibilitatii cercetarii romanesti in domeniul sistemelor avansate pentru epurarea apelor industriale, cu precadere a celor din industria textila.

• **Rezultate**:

- studiu ştiinţific privind procesele fotocatalitice şi aplicaţiile fotocatalizei în epurarea apelor reziduale;
- studiu privind impactul poluanţilor asupra apelor reziduale rezultate de la procesele de finisare (vopsire cu diverse clase de coloranţi) a materialelor textile celulozice din societăţi comerciale inainte si după epurare în vederea stabilirii sistemelor complexe de epurare şi introducerii modulului de fotocataliză în fluxurile tehnologice de epurare;
- tehnologii noi de fotocataliza integrate in sisteme complexe pentru epurarea efluentilor rezultati din finisajul textil si indepartarea simultana a colorantilor organici si a metalelor grele.

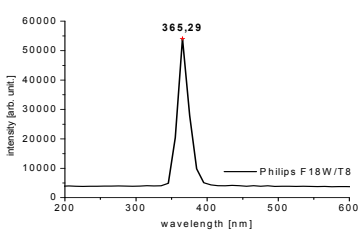
• **Produs/Tehnologie/Metodologii**: noi tehnologii de tratare a apelor reziduale provenite de la vopsirea cu coloranti reactivi prin: fotocataliza, coagulare- floculare-fotocataliză, în prezenţa filmelor de dioxid de titan obţinute prin tehnica doctor blade pe fotoreactorul realizat de Universitatea Transilvania Brasov

Caracteristicile fotoreactorului: Capacitate - 500 ml; echipat cu - 3 tuburi (Philips) cu lumină neagră aşezate circular în fotoreactor; Fiecare tub emite un domeniu larg de lumină UVA , de 340-400 nm, cu λmax (emisia) =365 nm; Valoarea medie de 3 Lx (Mavolux 5032 C/B USM).

• **Domenii de utilizare**: tratarea apelor reziduale prin fotocataliza integrata in sisteme complexe pentru epurarea efluentilor rezultati din finisajul textil si indepartarea simultana a colorantilor organici si a metalelor grele.

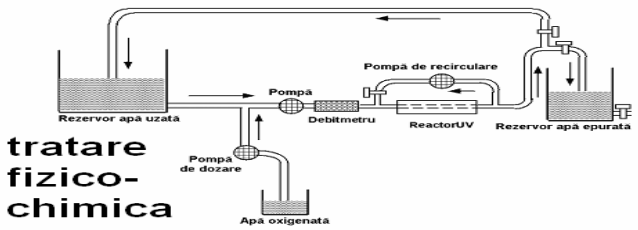
5.1.4 Biotechnologies

• **Benefits**:
- the reducing of pollutants from the textile waste waters and the situating within the values of the quality indices foreseen in national and European NTPA ;
- the obtaining of maximum discharging yields of the waste waters treated on complex photocatalytic systems, being able to emphasize the values of the rubbing off yield of 75 - 92.3%;



- the reducing of the consumption of chemicals for treatment;
- the reducing of the sludge quantity;
- the reducing of CCOCr, CBO5 value by 50 ÷ 60
- the reducing of the metal quantity;
- the recirculation of the treated waters;
- the modernization of the waste water installations by in-line integration of a photo-reactor.

• **Beneficii**:
- reducerea impurificatorilor din apele reziduale textile si incadrarea in valorile indicatorilor de calitate prevazuti in NTPA nationale si europene;
- obtinerea unor randamente de epurare maxime a apelor reziduale tratate pe sistemele fotocatalitice complexe evidentiind valorile randamentului de decolorare de 75 – 92,3%;
- reducerea consumului de chimicale pentru tratare;
- - reducerea cantității de nămol;
- reducerea valorii CCOCr, CBO5 cu 50 ÷ 60%;
- reducerea cantitatii de metale;
- recircularea apelor tratate.
- modernizarea instalatiilor de epurare prin integrarea in flux a unui fotoreactor.



3. **Project**: "The impact of biotechnologies for processing textile materials made of natural fibres over waste waters"- 2006-2008
• **Objectives**: The evaluation of the impact of biotechnologies for processing textile materials made of natural fibres over waste waters, with a view to promoting the most efficient solutions from the ecologic and economic point of view
• **Results**:
- Enzymatic process for the biocleaning of flax textile materials;
- The attenuation of the risk factors over the environment and people health;
- The reducing of raw material, material, water and energy

3. **Proiect**: "Impactul biotehnologiilor de prelucrare a materialelor textile din fibre naturale asupra apelor reziduale" - 2006-2008
• **Obiective**: Evaluarea impactului asupra apelor reziduale a biotehnologiilor de prelucrare a materialelor textile din fibre naturale, in vederea promovarii celor mai eficiente solutii din punct de vedere ecologic si economic.
• **Rezultate**:
- Procedeu enzimatic de biocuratare a materialelor textile din in;
- Atenuarea factorilor de risc asupra mediului inconjurator si sanatatii oamenilor;
- Reducerea consumului de materii prime, materiale, apa si

consumption;
- The reducing of waste water treating expenses.
• **Product/Technology/Methodologies**: „Enzymatic process for the biocleaning of flax textile materials".
Novelty elements:
- The attenuation of the risk factors for the environment by using enzymatic products and ecologic chemical auxiliaries;
- The evaluation of the impact of biotechnology for the preliminary preparation of the flax woven fibres over waste waters;
Main characteristics:
- The removing of natural extraneous matters of the flax fibres;
- The improving of the textile material quality enzymatically treated;
- Uniformity in subsequent dyeing;
- Higher resistance to traction as compared with the conventional treatments;
Utilization domains: Preliminary treatment of textile materials made of flax fibres
Benefits:
- The reducing of energy/water/gas/chemical auxiliary consumption;
- The reducing of total duration of the process for the preliminary preparation of flax woven fibres;
- The reducing of the values of waste water quality indices;
- The reducing of the negative impact over the environment by the utilization of biodegradable auxiliaries;
- The elimination of the sodium hydroxide from the residual floats.

4. **Project**: "Researches regarding the achieving of eco-technologies ,meant for the leather sector which shall contribute to the environment protection, life quality improvement and technologic competitiveness" - 2005-2008
• **General objective**: the accomplishing and validation of a sustainable production meant for the Romanian leather sector
• **Main objectives**:
- The achieving of a technology for eco-friendly leather tanning, the alternative of the chrome tanning
- The achieving of new agents for treating the pollu-tants from the effluents resulted from the leather processing
• **Novelty and innovation elements**:
- The synthesis of certain new pre-polymer and/or olygomer tanning agents.
- The achieving of new tanning agents at the pilot scale laboratory level;
- The achieving of certain eco-technologies for the leather

energie;
- Reducerea cheltuielilor de epurare a apelor reziduale.
• **Produs/Tehnologie/Metodologii**: „Procedeu enzimatic de biocuratare a materialelor textile din in".
Elemente de noutate:
- Atenuarea factorilor de risc pentru mediu prin utilizarea de produse enzimatice si auxiliari chimici ecologici;
- Evaluarea impactului asupra apelor uzate a biotehnologiei de pregatire preliminara a tesaturilor din in;
Caracteristici principale:
- Indepartarea insotitorilor naturali ai fibrei de in;
- Imbunatatirea calitatii materialelor textile tratate enzimatic;
- Uniformitate la vopsirea ulterioara;
- Rezistente la tractiune mai mari in comparatie cu tratamentele clasice;
Domenii de utilizare: Tratamentul preliminar al materialelor textile din fibre de in
Beneficii:
- Reducerea consumului de energie/apa/gaze/auxiliari chimici;
- Reducerea duratei totale a procesului de pregatire preliminara a tesaturilor din in;
- Reducerea valorilor indicatorilor de calitate a apelor uzate;
- Reducerea impactului negativ asupra mediului inconjurator prin utilizarea de auxiliari biodegradabili;
- Eliminarea hidroxidului de sodiu din flotele reziduale.

4. **Proiect**: "Cercetari privind realizarea de eco-tehnologii destinate sectorului de pielarie, care sa contribuie la protectia mediului, imbunatatirea calitatii vietii si competitivitatii tehnologice" - 2005-2008
• **Obiectivul general**: realizarea si validarea unei productii durabile destinata sectorului de pielarie din Romania.
• **Obiective principale**:
- Realizarea unei tehnologii de tabacire a pieilor eco – prietenoase, alternativa tabacirii in crom
- Realizarea unor noi agenti pentru tratarea poluantilor din efluentii rezultati la prelucrarea pieilor
• **Elemente de noutate si inovare**:
- Sinteza unor noi agenti de tabacire pe baza de pre- polimeri si / sau oligomeri.
- Realizarea noilor agenti de tabacire de la nivel laborator, la scara pilot;
- Realizarea unor eco – tehnologii pentru prelucrarea pieilor,

processing, by using new tanning agents and their implementation in production at semi-industrial scale
- The synthesis of new agents for treating the effluents coming from tanning houses
- The achieving of eco-technologies for treating the effluents coming from tanning houses
• **Results**:
- new ecologic technologies for leather tanning, „wet-white" leather being obtained;
- new tanning agents;
- a new type of leather meant for the restoration of the historical patrimony objects;
- new agents for treating the effluents coming from tanning houses
• **Potential users**:
- co-financing partners of the project – 2 tanning houses– SC ROMBOX SA and SC TAMIV SA

• **Technical-economic impact**: The new ecologic technologies lead to economic effects by:
- The reducing of waste water treating costs by 35%; it has to be mentioned that the elimination of neutral salts (NaCl) and chrome salts is difficult and expensive;
- Leather wastes without chrome that can be used in other domains, there being obtained high added value products and the increasing of life cycle of the initial products (animal skin);
- By the implementing of new new technologies, a new high performance market niche for the leather industry is created, for the selling of leather meant for the restoration of long-lasting museum products and technical performances that shall fulfill the users' requirements.
All these effects will contribute to the leather sector competitiveness increasing.
• The reducing of the leather sector impact over the environment, by:
- The elimination of chrome wastes (chrome dust), which results in a sub-product of the chrome tanning process and represents 5 – 10 % of the leather weight
- Wet-white wastes resulted from tanning with organic compounds, according

utilizand noi agenti tananti si implementarea lor in productie la scara semi-industriala.
- Sinteza unor noi agenti de tratare a efluentilor proveniti din tabacarii.
- Realizarea unor eco – tehnologii de tratare a efluentilor din tabacarii.
• **Rezultate**:
- noi tehnologii ecologice pentru tabacirea pieilor, obtinandu-se piei „wet-white";
- noi agenti de tabacire;
- un nou sortiment de piele destinat restaurarii obiectelor istorice de patrimoniu;
- noi agenti de tratare a efluentilor.proveniti din tabacarii
• **Potentiali utilizatori**:
- partenerii cofinantatori ai proiectului – 2 tabacarii – SC ROMBOX SA si SC TAMIV SA

• **Impact tehnico-economic**: Noile tehnologii ecologice conduc la efecte economice prin:
- Reducerea costurilor de epurare a apelor reziduale cu 35%; trebuie facuta precizarea ca eliminarea sarurilor neutre (NaCl) si a sarurilor de crom este dificila si costisitoare;
- Deseuri de piele fara crom care pot fi utilizate in alte domenii, obtinandu-se produse cu valoare adaugata si cresterea ciclului de viata al produselor initiale (piei animale);
- Prin implementarea noilor tehnologii se creaza o noua nisa de piata de mare performanta pentru industria de pielarie pentru vanzarea de piei destinate restaurarii obiectelor muzeale cu durabilitate indelungata si performante tehnice care sa intruneasca cerintele utilizatorilor.
Toate aceste efecte vor contribui la cresterea competitivitatii sectorului de pielarie.
• Reducerea impactului sectorului de pielarie asupra mediului, prin:
- Eliminarea deseurilor cromate (razatura de crom), care rezulta ca un sub-produs al procesului de tabacire cu crom si reprezinta 5 – 10 % din greutatea pieilor.
- Deseurile wet-white rezultate in urma tabacirii cu compusi organici, conform studiilor efectuate,



Aspects of leather processing in tanning houses

to the effected studies, the skin protein having the possibility to be recovered and these can be used as fertilizers and for the obtaining of gelatin, glue and other biodegradable industrial products. The recovery of leather wastes without chrome will contribute to the sustainable development of the leather sector;
- Effluents without chrome that will reduce the treatment costs and the stored sludge volume.
• **Social impact**: The new ecologic leather assortments will contribute to the maintaining of population health.

5. **Project**: " Biofertilizers and growing biostimulators, with additives obtained by protein subproduct biorefining, for a sustainable plant culture" – acronym BIODURAFERT - 2006-2008
• **Objectives**: The accomplishing of foliar plant biofertilizers and growing biostimulators, with protein additives extracted from protein subproducts from the leather industry; the recovery of non-tanned leather wastes by the accomplishing of heating fuel and additives for concretes; the recovery of the chrome separated from tanned leather wastes by its inclusion into vitreous masses, the accomplishing of pigments or tanning materials.
• **Results**:
- New created products 4
- New created technologies 6
- Studies 5
- Number of homologated products/technologies 3
• **Product/Technology**: Technology for accomplishing protein additives, biofertilizers and biostimulators for a sustainable horticulture culture
Novelty elements:
- Technologies for processing chrome leather wastes to atmospheric pressure with the obtaining of a collagen hydrolysate containing 0,3 ppm - 0,8 ppm chrome, under the limit from the specialty literature for the collagen hydrolysates extracted from tanned leather wastes, of about 200 ppm;
- Technology for accomplishing a new foliar biofertilizer containing protein additive for the nutrition and biostimulation of horticultural plants, having typical properties for a foliar product, namely: dilution stability, adequate viscosity, film-forming properties, superficial tension adequate for spreading, capacity of foliar membrane film penetration and macro and micronutrient releasing.
Main characteristics:
- Chemical hydrolysis of the tanned leather wastes at atmospheric pressure, temperature of 800C, time duration of 6.4 hours, in a hydrolysed alkaline reaction medium (pH=9-11) of collagen with the molecular mass ranging between 8000-12000 Da, free aminoacid content (glycine, aspartic acid, glutamic acid, serine, histidine, tyrosine and proline).
- Protein additive biofertilizer with nitrogen content, approx. 2 mol/L urea, according to the formula N-P-K 4-0-4 and microelement, as follows: B 0.2 g/l, Zn 0.2 g/l, Cu 0.2 g/l, Mo

nu numai ca se poate recupera proteina pielii, dar acestea pot fi utilizate ca fertilizatori si pentru obtinerea gelatinei, cleiului si altor produse industriale biodegradabile. Valorificarea deseurilor de piei fara crom va contribui la dezvoltarea durabila a sectorului de pielarie;
- Efluenti fara crom care vor reduce costurile de tratare si a volumului de namol depozitat.
• **Impact social**: Noile sortimente ecologice de piele vor contribui la pastrarea sanatatii populatiei.

5. **Proiect**: "Biofertilizatori si biostimulatori de crestere, cu aditivi obtinuti prin biorafinarea subproduselor proteice, pentru cultura durabila a plantelor" – acronim BIODURAFERT - 2006-2008
• **Obiective**: Realizarea de biofertilizatori si biostimulatori de crestere a plantelor, de tip foliar, cu aditivi proteici extrasi din subproduse proteice din industria de pielarie; valorificarea deseurilor de piele netabacita prin realizarea de combustibili de incalzire si aditivi pentru betoane; valorificarea cromului separat din deseuri de piele tabacita prin inglobare in mas vitroase, realizarea de pigmenti sau tananti.
• **Rezultate**:
- Produse noi create 4
- Tehnologii noi create 6
- Studii realizate 5
- Numar produse/tehnologii omologate 3
• **Produs/Tehnologie**: Tehnologiii de realizare a aditivilor proteici, a biofertilizatorilor si biostimulatorilor pentru cultura durabila in horticultura
Elemente de noutate:
- Tehnologii de procesare a deseurilor de piele cromata la presiune atmosferica cu obtinerea unui hidrolizat de colagen cu care are un continut de crom cuprins intre 0,3 ppm - 0,8 ppm, sub limita care este raportata in literature de specialitate pentru hidrolizate de colagen extrase din deseuri de piele tabacita, de circa 200 ppm;
- Tehnologie de realizare a unui nou biofertilizator foliar cu continut de aditiv proteic pentru nutritia si biostimularea plantelor horticole, cu proprietati tipice pentru un produs foliar, respectiv: stabilitate la dilutie, vascozitate adecvata, proprietati peliculogene, tensiune superficiala adecvata etalarii, capacitate de penetrare a cuticulei membranei foliare si de eliberare a macro si micronutrientilor.

Caracteristici principale:
- Hidroliza chimica a deseurilor de piele tabacita la presiune atmosferica, temperatura de 800C, timp de 6,4 ore, in mediu de reactie alcalin (pH=9-11). hidrolizat de colagen cu masa moleculara cuprinsa intre 8000-12000 Da, continut de aminoacizi liberi (glicina, acid aspartic, acid glutamic, serina, histidina, tirozina si prolina).
- Biofertilizator cu aditiv proteic cu continutul de azot aproximativ 2 mol/L uree, corespunzator formulei N-P-K 4-0-4 si continutul de microelemente dupa cum urmeaza: B 0.2 g/l,

0.1 g/l.
Utilization domains: tanning houses, agriculture
Benefits/effects:
From the ecologic effieciency point of view, the implementing of the RD results reduces the quantity of solid wastes by about 2,500 tons/year, out of which 7-8 tons are chrome derivatives. The depollution costs (about 100.000 Euro/year) are recovered from the production valorization.

Zn 0.2 g/l, Cu 0.2 g/l, Mo 0.1 g/l.
Domenii de utilizare: Tabacarii, agricultura
Beneficii/efecte:
Din punct de vedere al eficientei ecologice, implementarea rezultatelor CD reduce cantitatea de deseuri solide cu circa 2.500 tone/an, din care 7-8 tone de derivati ai cromului. Costurile cu depoluarea (circa 100.000 Euro/an) sunt recuperate din valorificarea productiei.



a


b


c

Plant for processing leather waste (a), protein additive (b) and fertilized tomatoes (c)

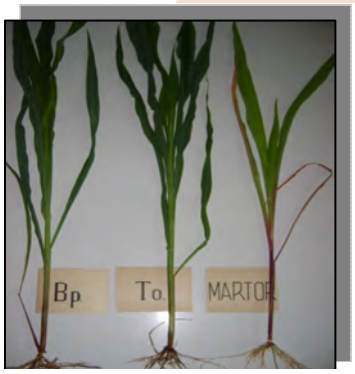
6. **Project**: "Biocompost containing organic (protein and cellulose) wastes for a competitve agriculture " - 2006-2008
• **Objectives**: the obtaining of complex products – biocomposts, for the improving of soil composition, subject to a strong erosion process or with a low content of organic substances.
• **Results**:
- The experimenting of organic wastes in the Soil Model Hall
- The establishing and the testing of the organic source effects over the damaged soils and tested plants.
- The optimization of the organic product applications for damaged soils, which have a low content of organic substances
- The evaluation of the effects of applying complex organic products on the damaged soils and cultivated plants
- Technologic transfer and the valorization of results in agriculture

Patent application no. A 00655 - 26.08.2008 "Innovative procedure for obtaining leather waste biocompost".
Finally, there has been elaborated a technology for obtaining complex products and for biorecovering the poor soils and their stabilization by the help of organic waste biocomposts (Finalization Protocol no. 1750/12.09.2008).

6. **Proiect**: "Biocompost pe baza de deseuri organice (proteice si celulozice) pentru o agricultura competitiva" - 2006-2008
• **Obiective**: obtinerea de produse complexe – biocompost pentru imbunatatirea compozitiei solurilor, supuse unui puternic proces de eroziune, sau cu un continut sarac in substante organice.
• **Rezultate**:
- Experimentarea deseurilor organice in Hala Modele Sol
- Stabilirea si testarea efectelor surselor organice asupra solurilor erodate si plantelor testate.
- Optimizarea aplicarii produselor organice pentru soluri erodate si sarace in substante organice
- Evaluarea efectelor aplicarii produselor organice complexe pe solurile erodate si plantelor cultivate
- Transferul tehnologic si valorificarea rezultatelor in agricultura

Cerere brevet nr A 00655 - 26.08 2008" Procedeu inovativ de obtinere a biocompostului din deseuri de piele".
In final, s-a elaborat o tehnologie de obtinere de produse complexe si bioremediere a solurilor sarace si stabilizarea lor cu ajutorul biocomposturilor din deseuri organice. (Protocol de finalizare nr.1750/12.09.2008).

5.1.4 Biotechnologies



Leather wastes - The effects of fertilizers over soil and plant growing

7. **Project**: "Integrated system for valorizing the sludge resulted from the waste water treatment from tanninh houses" - 2008-2011

• **Objectives**: The project aims at the applying of innovative technologies for the recovery of sludge coming from the treatment of waste waters in tanning houses, in the agriculture (biofertilizer for the culture plants agent for the recovery of damaged or contaminated soils), having as main objective the obtaining of complex products – from the sludge coming from the treatment of waste waters in tanning houses.

7. **Proiect**: "Sistem integrat de valorificare a namolului rezultat de la epurarea apelor reziduale din tabacarii" - 2008-2011

• **Obiective**: Proiectul vizeaza aplicarea tehnologiilor inovative pentru valorificarea namolului, provenit de la epurarea apelor reziduale din tabacarii in agricultura –(biofertilizator pentru plantele de cultura si agent de remediere a solurilor degradate sau contaminate), propunandu-si ca obiectiv principal obtinerea de produse complexe –din namolul de la epurarea apelor uzate din tabacarii.

Treatment plant - System for the sterilization of waste sludge from tanning

• **Results**: Innovative technologies regarding the recovery of sludge coming from the treatment of waste waters in tanning houses

• **Technology / Method**:

a) the accomplishing of new complex biofertilizer products from the sludge coming from the treatment of waste waters in the tanning houses ;

b) the applying of these products in agriculture – with a view to increasing the culture plant production and for the recovery of damaged soils.

• **Rezultate**: Tehnologii inovative privind valorificarea namolului, provenit de la epurarea apelor reziduale din tabacarii

• **Tehnologie / Metoda**:

a) realizarea unor noi produse complexe biofertilizatoare din namolurile de la epurarea apelor reziduale din tabacarii;

b) aplicarea acestor produse in agricultura- in scopul cresterii productiei de plante de cultura si pentru remedierea solurilor degradate.

8. **Project**: "Integrated technologic system for the ecologic nanofinishing of surfaces and the monitoring of emissions"
- 2007-2010
• **Objectives**: The obtaining of ecologic nanodispersion, meant for the finishing of natural leather concomitantly with the monitoring of volatile organic compound emissions to their application
• **Results**:
Product/Technology:
- Technology for the obtaining of nanodispersions
- Technology for the applying of nanodispersions on natural leather and the controlling of the volatile organic compound emissions
Novelty elements: the technologies are ecologic; the emissions at the level of the finishing rooms are permanently controlled, monitored and registered
Utilization domains: in the tanning houses, for the leather finishing
Benefits/effects: the reducing of the polluting agents in the application and their permanent control

8. **Proiect**: "Sistem tehnologic integrat pentru nanofinisarea ecologica a suprafetelor si monitorizarea emisiilor"
- 2007-2010
• **Obiective**: Obtinerea de nanodispersii ecologice, destinate finisarii pieilor naturale, concomitent cu monitorizarea emisiilor de compusi organici volatili, la aplicarea lor
• **Rezultate**:
Produs/Tehnologie:
- Tehnologie pentru obtinerea nanodispersiilor
- Tehnologie pentru aplicarea nanodispersiilor pe pielea naturala si controlul emisiilor de compusi organici volatili
Elemente de noutate: tehnologiile sunt ecologice; emisiile la nivelul sectiilor de finisaj sunt controlate, monitorizate si inregistrate permanent
Domenii de utilizare: in tabacarii, la finisarea pieilor
Beneficii/efecte: reducerea noxelor la aplicare si controlul lor permanent

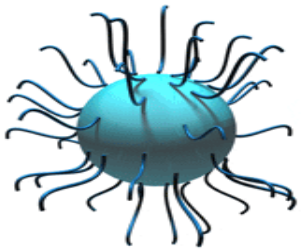
9. **Project**: "Ecologic adhesive nanodispersions accomplished by the grafting of elastomers, meant for the processing of joining leather, rubber and plastic masses"
- 2008–2011
• **Objectives**: the elaboration of a procedure for chloroprene, butadiene-co-acrylonitrile and chlorobutyl-type elastomer grafting, of product accomplishing, respectively performant adhesives with a nontoxic dispersion medium and a new very complex technology that will lead to the obtaining of advanced materials for competitive products, meaning the accomplished adhesive dispersions, as well as of finished products that will be used as a component of these.
• **Product/Technology**:
Novelty elements: The achieving of new innovative solutions of clean technologies for products and processes, as well as the creating of economic and social mechanisms for their implementation. The project will contribute to the researching of certain present hypotheses for accomplishing performant adhesive nanodispersions with an aqueous dispersion medium, which is friendly for the environment and human being (green chemistry), meant for the joining of leather, synthetic leather, rubber and plastic mass articles
Main characteristics:
- Toxicity reducing of the new adhesives accomplished;
- Adhesives having performant adherence properties;
- The hygienization of the work places by the elimination of toxic substances from the adhesive composition.
Utilization domains: clothing, footwear and morocco goods
Benefits/effects:
- The obtaining of new products, namely adhesives with a

9. **Proiect**: "Nanodispersii adezive ecologice realizate prin grefarea elastomerilor destinate procesarii imbinarilor din piele cauciuc si mase plastice"- 2008 –2011
• **Obiective**: elaborarea unui procedeu de grefare a elastomerilor de tip cloroprenic, butadiene-co-acrilonitrilic şi clorbutilic, de realizare de produse, respectiv adezivi performanti cu mediu de dispersie netoxic şi a unei tehnologii noi, de mare complexitate, care va conduce la obținerea de materiale avansate pentru produse competitive respectiv dispersiile adezive realizate precum si a produselor finite in componenta carora vor fi utilizate.
• **Produs/Tehnologie**:
Elemente de noutate: Realizarea unor noi solutii inovative de tehnologii curate pentru produse si procese, precum si crearea mecanismelor economice si sociale de implementare a acestora. Proiectul va contribui la cercetarea unor ipoteze actuale de realizare a nanodispersiilor adezive performante cu mediu de dispersie apos, prietenos pentru mediu şi om (green chemistry), destinate îmbinări articolelor din piele, piele sintetică, cauciuc şi mase plastice
Caracteristici principale:
- Reducerea toxicității adezivilor noi realizați;
- Adezivi cu proprietăți de aderenta performante;
- Igienizarea locurilor de muncă prin eliminarea substanțelor toxice din compoziția adezivilor.
Domenii de utilizare: confectie incaltaminte si marochinarie
Beneficii/efecte:
- Obținerea unor produse noi, respectiv adezivi cu grad de toxicitate redus;
- Îmbunătățirea calității produselor din cauciuc vulcanizat

low toxicity degree;
- The improving of vulcanized rubber product quality due to the high joining resistance;
- The accomplishing of products at the level of the present ecologic requirements.

STRATEGIC OBJECTIVES 2009:

- The accomplishing of finishing ecotechnologies and biotechnologies for avoiding and limiting the pollutant discharges in the waste waters;
- The accomplishing of treating technologies by nanofiltration and ultrafiltration based on last generation ion exchanging resins and /or macrocyclic compounds from the class of calixarenes;

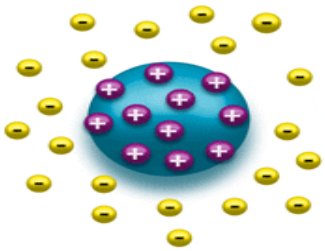


- The accomplishing of treating technologies by physical-chemical methods with an ozonization and electroflocculation stage;
- The characterizing of the effluents resulted after the advanced treating by disperse photocatalytic systems and TiO2 /WO3 films
- The accomplishing and finalizing of the pilot technology for the obtaining of nanodispersions and the technology for the application on the natural leather;
- The installing of a system for monitoring the emissions in the leather ecologic finishing by the help of nanodispersions;
- The experimenting of certain ecologic adhesive nanodispersion variants by the grafting of elastomers, meant for the processing of joining leather, rubber and plastic masses.

datorită rezistenței mărită a îmbinării;
- Realizare de produse la nivelul actualelor cerințe ecologice.

OBIECTIVE STRATEGICE 2009:

- Realizarea de ecotehnologii si biotehnologii de finisare pentru evitarea si limitarea evacuarilor de poluanti in apele reziduale;



- Realizarea de tehnologii de epurare prin nanofiltrare si ultrafiltrare pe baza de rașini schimbatoare de ioni de ultima generatie si/ sau compusi macrociclici din clasa calixarenelor;
- Realizarea de tehnologii de epurare prin metode fizico chimice cu treapta de ozonizare si electrofloculare;
- Caracterizarea efluentilor rezultati dupa epurarea avansata prin sisteme fotocatalitice disperse si filme de TiO2 /WO3
- Realizarea si definitivarea tehnologiei pilot pentru obtinerea nanodispersiilor si a tehnologiei de aplicare pe piei naturale;
- Instalarea unui sistem de monitorizare a emisiilor la finisarea ecologica a pieilor cu ajutorul nanodispersiilor;
- Experimentarea unor variante de nanodispersii adezive ecologice realizate prin grefarea de elastomeri, destinate procesarii imbinarilor din piele cauciuc si mase plastice.

5.1.5 Aeronautical and space products and technologies

GLOBAL TRENDS AND ACCOMPLISHMENTS

The aeronautic domain is considered to be a sector of strategic importance for the future competitiveness of Europe. Ensuring a leader position of Europe on the global aeronautic market, it depends on a better coordination and delivery of the researches financed on a EU, national or private level, optimization of the research facilities in a European cooperation framework, stimulation of the synergies between civil and military sectors.

The importance of this sector for Europe is proved by the initiating of the European Technological Platform for Aeronautics – ACARE and by the including into the FP7 of the research activity in aeronautics and air transportation.

At European level there have been made virtual networks in aeronautics like:

• EASN – European Aeronautic Scientific Network, composed of European universities with activity in the aeronautic field;

• SCRATCH – Support for Collaborative Aeronautical Technical Research – network of European partners with knowledge in the aeronautic research, who offer services to the SMEs for the research project proposals within the FP7;

• ASD – AeroSpace and Defense Industries Association of Europe

• SeNTRE – The Security Network for Technological research in Europe is a network that prepares the plan of strategic research on European security.

The aeronautic domain benefits from researches regarding new, advanced materials and nanomaterials based on non-ferrous alloys; new, advanced materials and nanomaterials based on composites and ceramics; coating materials and films with controlled properties; nanoparticles, shape memory materials and micro-structured with functional properties; steel and special super-alloys; powders and powder metallurgy; materials and magnetic systems with controlled properties; wooden composites; Synthesis and alteration of polymers/ nanostructured polymers; advanced carbonic materials.

The INCDTP contribution to aeronautics and security had as objective the product development in the aeronautic field and the accomplishing of pilot-less platforms for field reconnaissance, survey and information collecting.

In the activity of multidisciplinary research-development there has been used the informational technology from the stage of project, study until the phase of performance analysis.

TENDINTE SI REALIZARI PE PLAN MONDIAL

Domeniul aeronautic, este considerat un sector de importanta strategica pentru competitivitatea viitoare a Europei. Securizarea poziției globale de lider al Europei pe piața globală aeronautică depinde de o mai buna coordonare şi distribuție a cercetărilor finanțate la nivel UE, național sau privat, optimizarea facilităților cercetării intr-un cadru al colaborării europene, stimularea sinergiilor între sectoarele civile şi ale apărării.

Importanta acestui sector pentru Europa este demonstrata de initierea Platformei tehnologice Europene pentru AERONAUTICĂ – ACARE si de includerea in Programul Cadru 7 de cercetarea a domeniului Aeronautica si transport aerian.

La nivel european, s-au format retele virtuale in domeniul aeronauticii, precum:

• EASN - European Aeronautic Scientific Network, retea formata din universitati europene cu activitate in domeniul aeronautic;

• SCRATCH - Suport for Collaborative Aeronautical Technical Research - retea de parteneri europeni cu cunostinte in domeniul cercetarii aeronautice, ce ofera servicii IMM-urilor pentru propunerile de proiecte de cercetare in FP7;

• ASD - AeroSpace and Defence Industries Association of Europe;

• SeNTRE- The Security Network for Technological Research in Europe - o retea care pregateste planul de cercetare strategica in domeniul securitatii Europene.

Domeniul aeronautic beneficiaza de cercetari privind materialele noi, avansate si nanomateriale pe baza de aliaje neferoase; materiale noi, avansate si nanomateriale pe baza de compozite si ceramice; materiale pentru acoperiri si straturi cu proprietati controlate; nanoparticule, materiale cu memoria formei, nanomateriale oxidice si hibride; tehnologii pe baza de laseri si plasma pentru obtinerea de materiale nano si microstructurate cu proprietati functionale; oteluri si superaliaje speciale; pulberi si metalurgia pulberilor; materiale si sisteme magnetice cu proprietati controlate; materiale compozite lemnoase; sinteza si modificarea polimerilor/ polimeri nanostructurati; materiale carbonice avansate.

Contributia I.N.C.D.T.P. in domeniul aeronautic si de securitate a avut ca obiectiv dezvoltarea produselor in domeniul aeronautic si realizarea de platforme fara pilot pentru recunoastere, supraveghere si culegere de informatii.

In activitatea de cercetare-dezvoltare multidisciplinara, s-a folosit tehnologia informationala de la faza de proiectare, studiu si pana la faza de analiza a performantelor.

5.1.5 Aeronautical and space products and technologies

1. **Project**: Autonomous air platform with strategic combat module - 2007-2010

• **Objectives**: Accomplishing of a functional model for a robotized air platform, sustained in the air by the arch of a paraglider with reduced sizes depending on the weigh of the service load, driven by a motor, which hovers above the areas of interest both autonomously and ground commanded.

• **Results**:

Technical plan for manufacturing the experimental model for the bearing element of the platform (the paraglider) and for the rescue system in case of uncontrolled evolutions (rescue parachute)

• **New elements**:

The design of the paraglider and rescue parachute was done by exclusively using the mathematic modeling. The winning method used to solve the aerodynamic equations is known as the panel method. The entire wing configuration was divided into source panels which have been individually solved.

• **Main characteristics**:

The flight module is represented by a paraglider arch, with the wing span of 14m, made of a special fabric (ripstop) having on the inside a cell structure and intercellular walls with ventilation holes, the arch being maintained inflated during flight because of the admission sections from the entering edge of the wing profile.

The respective platform is composed of a fixing system of the thermal airscrew engine mount and a fixing system of the combat module. The thermal engine is a classic one with sparks, with a 20 HP power at 10.000 rot/min, with a 1m diameter airscrew.

The platform wing has a special configuration, because after the load launching the transported mass will decrease drastically (from 100-120 kg to 30-40 kg). For this reason the wing flies with a large load having the command surfaces partially blocked for hyper-lift.

• **Using fields**:

- Ministry of National Defense (MApN) for a wide range of missions that can involve survey, defense or occupation of a hard approachable interest area.
- In the case of rigging the vehicle just with survey elements, it could be used in civil applications for monitoring-inspection of interest areas (forests, crops, delta etc.)

• **Benefits**:

The main advantages towards the other types of UAV with plane-type wing are that because of its construction, the paraglider has the capacity of very good hovering, having thus the possibility of a long time flying over the interest area. In the

1. **Proiect**: Platforma aeriana autonoma cu modul de lupta strategic - 2007-2010

• **Obiective**: Realizarea unui model functional pentru o platforma aeriana robotizata, sustinuta in aer de cupola unei parapante reduse ca dimensiune functie de greutatea sarcinii utile, propulsata de un motor si care zboara deasupra zonelor de interes atat in regim autonom cat si comandat de la sol.

• **Rezultate**:

Plan tehnic de executie a modelului experimental pentru elementului portant al platformei (parapanta) si pentru sistemului de salvare in cazul evolutiilor necontrolate (parasuta de salvare).

• **Elemente de noutate**:

Proiectarea parapantei si a parasutei de salvare s-a realizat folosind exclusiv modelarea matematica. Metoda care s-a impus pentru rezolvarea ecuatiilor aerodinamice este cunoscuta sub denumirea de metoda panourilor. Intreaga configuratie a aripii a fost discretizata in panouri de surse care au fost rezolvate individual.

• **Caracteristici principale**:

Modulul de zbor este aripa (cupola) unei parapante, cu anvergura de 14m, confectionata din material textil special tesut (ripstop-antisfasiere) avand in interior o structura de celule si pereti intercelulari cu gauri de ventilatie, cupola mentinandu-se umflata pe parcursul zborului datorita sectiunilor de admisie din bordul de atac al profilului aripii.

Platforma propriu-zisa este constituita dintr-un sistem de prindere a batiului motorului termic cu elice si un sistem de prindere si largare a modulului de lupta. Motorul termic este clasic cu bujie, avand o putere de 20 CP la 10 000 rot./min., el antrenand o elice propulsiva cu diametrul de 1 m.

Aripa platformei are o configuratie speciala, datorita faptului ca in urma largarii incarcaturii masa transportata va scadea drastic (de la 100 – 120 kg la 30 – 40 kg). De aceea, aripa zboara la incarcare mare cu suprafetele de comanda partial bracate pentru hipersustentatie.

• **Domenii de utilizare**:

- MApN pentru o paleta larga de misiuni ce pot implica supravegerea, apararea sau ocuparea unui perimetru de interes greu accesibil
- In cazul dotarii vehiculului doar cu elemente de supraveghere poate fi folosit si in aplicatii civile pentru monitorizare - inspectia unor zone de interes (paduri, delta, recolte etc.)

• **Beneficii**:

Avantajele principale pe care le are fata de celelalte UAV cu aripa fixa (de tip avion) sunt acelea ca, datorita insasi constructiei sale, parapanta are capacitatea de a plana foarte bine, aceasta conferindu-i posibilitatea de a survola mult

case of UAV planes, in the same time with loosing control they collapse and rarely succeed to hover, being un-operable after ground impact. In the case of the paraglider, it comes toward the ground with a minimum speed just like a parachute, that means that the whole equipment is rescued and in no case the wing of the paraglider crashes because it is made of a malleable fabric and mostly suffers small scratches or tearing because of the small obstacles from landing.

2. Project: Prototype of a safety parachute for paraglider - 2006-2008"

• **Objectives**: The research, design and development of a safety system, secure and inexpensive (safety parachute) that can be offered to the paraglider owners in order to equip the flying device with the purpose of life saving in case of danger.

• **Results**:

Prototype product "Safety parachute" – 2 pcs. that meet the performance and safety level according to SR EN 12491/2001.

• **New elements**:

Rescue parachute type PDA (Pull Down Apex) with central cord with polyconical shape, has the "skirt" circumference smaller than the maximum circumference of the parachute in inflated state. This shape distributes the pulling force to an angle inclined toward the exterior of the parachute. The vertical component of the force is summed with the normal pulling force of the parachute allowing the parachute manufacture with a surface with 40% smaller for a given load. This force generated by the parachute contributes also to a considerable increase of the parachute stability because of the horizontal component of the lifting power.

• **Main Characteristics**:

- Opening time: max. 5 sec.
- Descending speed: max. 5,5 m/s
- Stable during flight, without balance (oscillations)
- Resistance to the opening shock
- Shape: Polyconical, with central cord
- Surface: 30 sqm
- Bias ply no.: 22
- Parachute cord length: 5.500 mm
- Central cord length: 4.600 mm
- Polar hole parachute cord length: 1.700 mm
- Weight: 4 Kg

timp zonele de interes. Daca in cazul avioanelor UAV, odata cu pierderea comenzii acestea se prabusesc si, rareori, reusesc sa planeze, distrugandu-se la impactul cu solul, in cazul parapantei aceasta vine spre pamant cu viteza foarte mica asemenea unei parasute, ceea ce inseamna ca intregul echipament de pe carucior este salvat si, in nici un caz, aripa de parapanta nu se distruge, ea fiind un material maleabil, textil, cel mult sufera mici zgarieturi sau sfasieri din cauza micilor obstacole de la aterizare.

2. Proiect: Parasuta de siguranta pentru parapanta, prototip - 2006-2008"

• **Obiective**: Cercetarea, proiectarea si dezvoltarea unui sistem de siguranta, sigur si ieftin (parasuta de siguranta), ce poate fi oferit detinatorilor de pararante pentru echiparea aparatului de zbor in scopul salvarii vietii in caz de pericol.

• **Rezultate**:

Produs prototip "Parasuta de siguranta" - 2 bucati, cu cerinte de performanta si siguranta conform conform SR EN 12491/2001.

• **Elemente de noutate**:

Parasuta de salvare de tip PDA (Pull Down Apex) cu cord central de forma policonică are circumferința "fustei" mai mica decât circumferința maxima a paraşutei in stare umflata. Aceasta forma distribuie forta de tragere la un unghi inclinat spre exteriorul parasutei. Componenta verticala a forței se însumează cu forța de tragere normala a paraşutei permițând confecția paraşutei cu o suprafața cu pana la 40% mai mica pentru o sarcina data. Aceasta forța generata de paraşuta contribuie si la o creştere considerabila a stabilității paraşutei, datorita componentei orizontale a forței portante.

• **Caracteristici principale**:

- Timpul de deschidere: max. 5 s;
- Viteza de coborare: max. 5,5 m/s;
- Stabila in zbor fara balans (oscilatii);
- Rezistenta la socul de deschidere;
- Forma: policonica, cu cord central
- Suprafata: 30 m2
- Nr. clini: 22
- Lungimea suspantei: 5 500 mm
- Lungimea cordului central: 4 600 mm
- Lungimea suspantei orificiu polar: 1 700 mm
- Greutatea proprie: 4 kg

Rescue parachute

• **Using fields**:
Rescuing the paraglider pilots in case of paraglider malfunction and/or rescue from dangerous evolutions.
• **Benefits**:
The parachute surface is with up to 40% smaller for a given load, decreasing considerably the fabric and manual labor consumption necessary to manufacture it.

3. Project: Flying device from technical textiles - 2007-2010"
• **Objectives**: The project has as objective the research-designing and development of a model of flying apparatus from technical textiles that would be able to execute launches from a high altitude with immediate opening HAHO (High Altitude high Opening), launches from high altitude with low opening HALO (High Altitude Low Opening) or foot-launches from the ground level, in favorable conditions.


Flying device

• **Results**:
Prototype product "Flying device of technical textiles".
• **New elements**:
The wing-type parachute with a tri-cellular surface shows a number of suspension points for a parachute with given wing
span, smaller than a wing parachute with
a classic bi-cellular structure, as well as a better structural stability of the intermediary arch rib. The high fineness allows the parachute hovering on a much longer distance than with the case of classic wing parachutes.


Flying device

• **Main characteristics**:
- Cell no.: 33 (11 tri-cells)
- Surface: 28,2 sqm
- Wing span: 11,8 m
- Cord: 2,9 m
- Planar elongation: 4,2
- Flying rate: 7,5:1
- Maximum total weight: 150 kg
- Launching speed:
o Regular: up to 280 KPH recommended speed
o Foot-launched: with the wind 21 KPH recommended speed
- Maximum launching altitude: 7800 m from sea level
- Minimum opening altitude: 900 m from sea level

• **Domenii de utilizare**:
Salvarea pilotilor de parapanta in cazul defectarii parapantei si/sau salvarea din evolutii periculoase.
• **Beneficii**:
Suprafața parasutei este cu pana la 40% mai mica pentru o sarcina data, reducanduse considerabil consumul de material si manopera necesar pentru confectie.

3. Proiect: Aparat de zbor din textile tehnice - 2007-2010"
• **Obiective**: Proiectul are ca obiectiv cercetarea-proiectarea si realizarea unui model de aparat de zbor din textile tehnice care sa poata executa lansări de la altitudine mare cu deschidere imediata HAHO (High Altitude High Opening), lansări de la altitudine mare cu deschidere joasa HALO (High Altitude Low Opening) sau lansări "foot-launched" de la nivelul solului, in condiții favorabile.
• **Rezultate**:
Produs prototip "Aparat de zbor din textile tehnice".
• **Elemente de noutate**:
Paraşuta de tip aripa cu voalura tri-celulară prezintă un număr de puncte de suspensie pentru o paraşuta de anvergura data mai mic decât o paraşuta aripa cu structura clasica bi-celulara, precum si o stabilitate structurala îmbunătățită a nervurilor intermediare. Finetea ridicata permite planarea parasutei pe o distanta mult mai mare decat in cazul parasutelor aripa clasice.
• **Caracteristici principale**:
- Nr. celule: 33 (11 tri-cell)
- Suprafața: 28.2 m2
- Anvergura: 11.8 m
- Coarda: 2.9 m
- Alungire plana: 4.2
- Rata de planare: 7.5:1
- Greutate totala maxima: 150 kg
- Viteza de lansare:
o Convențional: pana la 280 KPH viteza indicata
o "Foot-launched": in vânt la 21KPH viteza indicata
- Altitudinea maxima de lansare: 7800 m de la nivelul marii
- Altitudinea minima de deschidere: 900 m de la nivelul marii

• **Using fields**:
Domains that suppose a precision parachuting of the personnel, like:
- The Ministry of Defense (special troops)
- Aero-clubs (sport, performance)
- Amateur sport parachuters;
- Forest firefighters, etc.

• **Benefits**:
This type of construction allows wing type parachute manufacturing with a longer elongation than the classic wing parachute with the same number of cords. Also, the material consumption for manufacturing the cords will decrease.

• **Domenii de utilizare**:
Domenii care presupun parasutarea de precizie a personalului cum ar fi:
- MAPN (trupe speciale aeropurtate);
- Aerocluburi (sportive, de performanta);
- Paraşutişti sportivi amatori;
- Pompieri silvici etc.

• **Beneficii**:
Acest tip de construcţie permite realizarea de parașute de tip aripa cu o alungire mai mare fata de o parașuta aripa clasica cu acelaşi număr de suspante. De asemenea consumul de material pentru realizarea suspantelor scade.

STRATEGIC DIRECTIONS 2009

• Innovation of the technologies and textile products used in aerospace domain
• The research and development of new technologies or adapting the existent technologies to the ones used globally with the purpose of increasing the competitiveness on the European market.
• INCDTP involvement in transferring to the economic agents from this field of the newest available technologies that will allow an ecologic integration, with an energetic and technologic efficiency superior to the present technologies.
• Application of performance informatics technologies in design, technological processes and the control of textile product production used in aeronautics and space
• Development of managerial aptitudes for improving the competitiveness, development of marketing ability including the international marketing and e-commerce.
• Creation of internal links between the raw material suppliers and manufacturer, marketing/advertisement/sales, using the IT techniques.
• Introduction of CAD/CAM of the flux and distribution control will result in an enhancement of the technical level of the company and placing at a level that allows the expansion of commercial links at the European level.

DIRECTII STRATEGICE 2009

• Inovarea tehnologiilor si produselor textile folosite in domeniul aerospatial
• Cercetarea si dezvoltarea de tehnologii noi sau adaptarea tehnologiilor existente celor practicate pe plan mondial in scopul cresterii competitivitatii pe piata europeana.
• Implicarea INCDTP in transferarea la agentii economici din domeniu a celor mai noi tehnologii disponibile, care vor permite o integrare ecologica, cu o eficienta energetica si tehnologica superioara tehnologiilor curente.
• Aplicarea tehnologiilor informationale performante in proiectare, procese tehnologice si controlul productiei de produse textile folosite in aeronautica si spatiu
• Dezvoltarea aptitudinilor manageriale pentru a îmbunătăți competitivitatea, dezvoltarea capacității de marketing, inclusiv marketing internațional (incluzând şi e-commerce).
• Crearea de verigi interne între furnizorii de materii prime/producători, marketing/publicitate/vânzători utilizând tehnicile IT.
• Introducerea CAD/CAM, a controlului pe flux şi distribuție va reprezenta o creştere a nivelului tehnic al întreprinderii şi o situare la un nivel care permite extindere legăturilor comerciale pe plan european.

5.1.6 Information technologies

The projects, which approach one of the priority domains of the research-development activities: the information society technology, contributes to the achieving of the national general objective (Horizon 2013): Reaching of EU average for the basic indices that describe the structure and performance of the research, development and innovation system by:

• The achieving of the strategic objectives:

- The creating of knowledge by the obtaining of high scientific and technologic results, the increasing of the international visibility for the Romanian research and the transfer of the results in economy and society, the substantial, qualitative and quantitative improvement of the human capital performance from the research domain, inclusively by the development of excellence poles;
- The increasing of the Romanian economy competitiveness by promoting innovation, having an effective impact at the level of economic agents, the acceleration of the technologic transfer, the stimulation of partnerships with the companies from the production sectors and competitive services, the creating of competence centers and technologic platforms

• And the specific objectives:

- The increasing of the institutional capacity by reducing the present system fragmentation and the encouraging of participation to research networks at national and international level; the recognition of the Romanian education and research institutes as actors on the international market of knowledge and as viable partners of the companies.

1. Project – The simulation of the textile nanostructure deformations -2006-2008

At present, nano- technologies represent an important segment of the production sector, their results (nano-products) being used in various domains of social life (health, electronics, information technology, army, etc.). An important position in this production segment is represented by nanotextile structures (nano-fibres/yarns), so that for their utilization in accomplishing certain products at nano level, there are necessary digital simulations, which are able to behaviorally reproduce (from a technologic point of view) the approaching modalities under real utilization conditions, with the purpose of establishing the optimum achieving strategy.

• **Objectives**:

- The behavioural simulation from an elastic point of view of the textile nanostructures

• **Results**:

- methodology of designing nanotextile structures used in the accomplishing of nanotextile products, using the virtual prototype based on the behavioral simulation;
- conceptual and technical preparation with a view to methodology applying.

Proiectele, care abordeaza unul din domeniile prioritare ale activitatilor de cercetare-dezvoltare, si anume tehnologiile societatii informationale, contribuie la realizarea obiectivului national general (Orizont 2013): Atingerea mediei UE la indicatorii de baza ce descriu structura si performanta sistemului de cercetare, dezvoltare si inovare, prin:

• Realizarea obiectivelor strategice:

- crearea de cunostinte - prin obtinerea unor rezultate stiintifice si tehnologice de varf, cresterea vizibilitatii internationale a cercetarii romanesti si transferul rezultatelor in economie si societate, ameliorarea substantiala, calitativa si cantitativa, a performantei capitalului uman din cercetare, inclusiv prin dezvoltarea unor poli de excelenta;
- cresterea competitivitatii economiei romanesti prin promovarea inovarii cu impact efectiv la nivelul agentilor economici, accelerarea transferului tehnologic, stimularea parteneriatelor cu firmele din sectoarele productiei si serviciilor pe baze competitive, crearea de centre de competenta si platforme tehnologice;

• Realizarea obiectivelor specifice:

- creşterea capacităţii instituţionale - prin reducerea fragmentării actuale a sistemului şi încurajarea participării la reţele de cercetare pe plan naţional şi internaţional; afirmarea instituţiilor de învăţământ şi cercetare româneşti, ca actori pe piaţa internaţională a cunoaşterii şi ca parteneri viabili ai firmelor.

1. Proiect – Simularea deformarilor nanostructurilor textile -2006-2008

Nanotehnologiile ocupa in prezent un segment important din sectorul productiv, ale caror rezultate (nanoproduse) sunt utilizate in cele mai diverse domenii ale vietii sociale (sanatate, electronica, tehnologia informatiei, armata etc.). O pozitie semnificativa in acest segement productiv il ocupa, structurile nanotextile (nanofibre/fire) astfel incat in vederea utilizarii acestora in realizarea unor produse la nivel nano sunt necesare simulari digitale, capabile de a reproduce in mod comportamental (din punct de vedere tehnologic) modalitatile de abordare in conditii reale ale acestora in scopul stabilirii strategiei optime de realizare. Scopul lucrarii il constituie tocmai fundamentarea elementelor specifice tehnologiei nanotextile in vederea realizarii acestor tipuri de produse.

• **Obiective**:

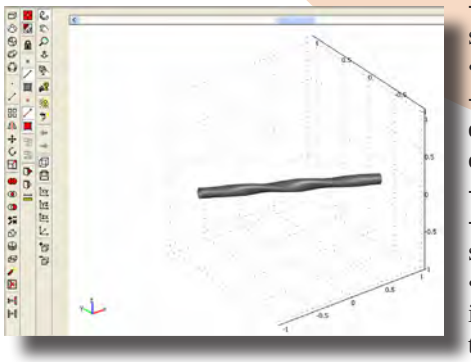
- simularea comportamentala din punct de vedere elastic a nanostructurilor textile;

• **Rezultate**:

- metodologie de proiectare a structurilor nanotextile utilizate in realizarea de produse nanotextile, utilizand prototipul virtual fundamentat pe simularea comportamentala;
- pregatirea conceptuala si tehnica in vederea aplicarii met-

• Methodology of designing textile nanostructures with the purpose of accomplishing textile nanoproducts
• **Novelty elements**: the accomplishing of nano scale virtual prototypes which can be used with this scale in the designing, as well as textile products;
• **Main characteristics** : a methodology that is based on the utilization of a CAD/CAM type system, having as input parameters the physical-mechanical characteristics of the textile nanostructures;
• **Utilization domains**: trade companies that use or/and produce nanotextile structures
• **Benefits/effects**: -the increasing of the product technical level with high added value;
- the increasing of the production quality;
- the increasing of the production capacity and profit.
• **Strategic directions**
The preparation of the methodology implementing in the daily technologic practice

odologiei.
• Metodologie de proiectare a nanostructurilor textile in vederea realizarii de nanoproduse textile;
• **Elemente de noutate**:
- realizarea de prototipuri virtuale la scara nano, utilizabile in proiectare la scara produselor cu specific textil;
• **Caracteristici principale**: metodologie care se fundamenteaza pe utilizarea unui sistem de tip CAD/CAM, avand ca parametri de intrare caracteristicile fizico-mecanice ale nanostructurilor textile;
• **Domenii de utilizare**:
- societati comerciale care utilizeaza sau/si produc structuri nanotextile;
• **Beneficii/efect**:
- cresterea nivelului tehnic a produselor cu valoare adaugata ridicata;
- cresterea calitatii productiei;
- cresterea volumului de productie si a profitului.
• **Directii strategice** - Pregatirea implementarii metodologiei in practica tehnologica cotidiana.

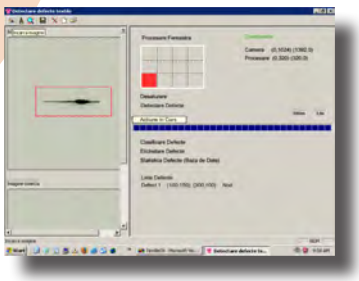


Virtual simulation

2. Project – Modern digital techniques of characterizing the textile structures (wavelet-type functions, clusters etc.**)** -2006-2008
The development of information technology (hardware – calculation speed, storing capacity etc.), as well as of certain specific methods and techniques of data processing (on the other hand) (cluster theory, datamining techniques, wavelet-type functions) allow the emphasizing of certain material properties and characteristics which 20 years ago were unapproachable. The utilization of the algorithms of this type in the textile industry domain allows the emphasizing of certain characteristics and properties that are special from the technologic point of view (the deceleration of defects from the textile structures, the objective establishing of the semifinished product and textile product quality etc.). The project themes are oriented in this direction.
• **Objectives**:
- Software product and methodology of using the modern techniques of characterizing the textile structures with the purpose of emphasizing certain characteristics and their properties.
• **Results**:
- software that is adequate for using the cluster theory and the wavelet-type functions with a view to emphasizing certain properties and characteristics which are specific to tex-

2. Proiect – Tehnici digitale moderne de caracterizare a structurilor textile (functii wavelet, clustere etc.)-2006-2008
Dezvoltarea tehnologiei informatiei pe de-o parte (hardware - viteza de calcul, capacitate de stocare etc.), precum si a unor metode si tehnici de prelucrare a datelor (pe de alta parte) specifice (teoria clusterelor, tehnici de tip datamining, functii de tip wavelet) permit evidentierea unor proprietati si caracteristici ale materialelor care acum 20 de ani erau inabordabile. Utilizarea unor algoritmi de acest tip in domeniul industriei textile permit evidentierea unor caracteristici si proprietati deosebite din punct de vedere tehnologic (decelarea defectelor din structurile textile, stabilirea in mod obiectiv a calitatii semifabricatelor si a produselor textile etc.). Tematica proiectului se inscrie pe aceasta linie.
• **Obiective**:
- Produs soft si metodologie de utilizare a tehnicilor moderne de caracterizare a structurilor textile in scopul evidentierii unor caracteristici si proprietati ale acestora;
• **Rezultate**:
- software adecvat utilizarii teoriei clusterelor si a functiilor de tip wavelet in evidentierea unor proprietati si caracteristici specifice structurilor textile (caracteristici de ordin calitativ privind structurile textile, decelare defecte specifice etc.);
- pregatirea conceptuala si tehnica in vederea aplicarii metodologiei.

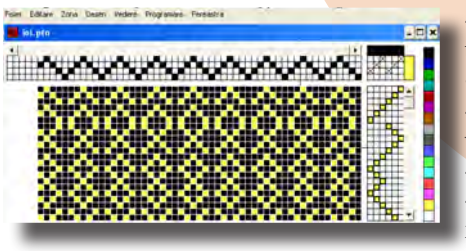
tile structures (qualitative characteristics regarding textile structures, specific defect deceleration etc.) ;
- conceptual and technical preparation for methodology applying
• Methodology of practical utilization of the software product;
• **Novelty elements**: the utilization of modern techniques for characterizing the textile structures with the purpose of their optimum efficient-rendering in the technologic process;
• **Main characteristics**: methodology which is based on the utilization of an adequate software, being based on algorithms specific to the cluster theory and wavelet-type function theory;
• **Utilization domains**: trade companies that need procedures of qualitatively identifying the textile products;
• **Benefits/effects**:
-the increasing of the technical level of the high added value products;
- the increasing of the production quality;
- the increasing of the production capacity and profit.
• **Strategic directions**
The preparation of the methodology implementation in the daily technologic practice



3. Project – Multicriterial decision system and intelligent instruments meant for acquiring sustainable competitive advantage on turbulent markets in the textile and clothing industry - SIDEMINT -2008-2011
The existing of emerging markets leads to perplexities as regards the markets from the transitional or developing countries, so that a series of "turbulences" on the market, which lead to many negative implications concerning the social-economic life (unemployment, bankruptcies, strikes etc.), produce. As the market meant for the consumer goods, in general, and the textile one, in particular, is addressed to a large group of persons, the utilization of certain methods and techniques of identifying and minimizing the negative effects specific to "turbulences", is very necessary.
• **Objectives**:
- The designing and developing of a "Virtual Factory" type system.
• **Results**:
- "Virtual Factory" type software product used in the optimization of the production from the textile companies, with a view to attenuating the influence of the turbulent character that exists on the emerging markets.
•Methodology of practical utilization of the software product;
• **Elemente de noutate**:
- utilizarea unor tehnici moderne de caracterizare a structurilor textile in scopul eficientizarii optime ale acestora in procesul tehnologic;
• **Caracteristici principale**:
- metodologie fundamentata pe utilizarea unui software adecvat, avand la baza algoritmi specifici teoriei clusterelor si
a teoriei functiilor de tip wavelet;
• **Domenii de utilizare**:
- societati comerciale care necesita proceduri de identificare de ordin calitativ a produselor textile;
• **Beneficii/efect**:
- cresterea nivelului tehnic a produselor cu valoare adaugata ridicata;
- cresterea calitatii productiei;
- cresterea volumului de productie si a profitului.
• **Directii strategice**
Pregatirea implementarii metodologiei in practica tehnologica curenta.

3. Proiect – Sistem decizional multicriterial si instrumente inteligente destinate dobandirii de avantaj competitiv durabil pe piete turbulente in industria de textile si confectii-SIDEMINT -2008-2011
Existenta pietelor emergente, conduce la bulversari privind pietele tarilor in tranzitie sau in curs de dezvoltare, astfel incat se produc o serie de "turbulente" pe piata, care la randul lor conduc la o serie de implicatii negative in ceea ce priveste viata socio-economica (somaj, falimente, greve etc.). Cum piata destinata bunurilor de consum in general si cea textila in particular se adreseaza unui cerc larg de indivizi, se impun cu necesitate, utilizarea unor metode si tehnici de identificare si minimizare a influentelor negative specifice "turbulentelor".
• **Obiective**:
- Proiectarea si dezvoltarea unui sistem de tip "Virtual Factory".
• **Rezultate**:
- produs software de tip "Virtual Factory", utilizat in optimizarea productiei din firmele cu profil textil in vederea atenuarii influentei caracterului turbulent existent in pietele emergente.
• Metodologie de utilizare practica a produsului soft;

uct;
• **Novelty elements**: the utilization of modern techniques of cluster type and fuzzy type clusters that laid at the basis of the Virtual Factory" type software product";
• **Main characteristics**: methodology with direct implications in the minimizing of the market turbulence influences from the textile and clothing domain;
• **Utilization domains**: trading companies which are producers of textiles and garments;
• **Benefits/effects**:
-the increasing of the technical level of the high added value products;
-the increasing of the production capacity and profit.



CAD CAM design

• **Elemente de noutate**:
- utilizarea unor tehnici moderne de tipul clusterelor si a multimilor de tip fuzzy care au stat la baza produsului soft de tip "Virtual Factory";
• **Caracteristici principale**:
- metodologie cu implicatii directe in minimizarea influentelor turbulentelor de piata din domeniul textile si confectii;
• **Domenii de utilizare**:
- societati comerciale, care realizeaza produse textile si confectii;
• **Beneficii/efect**:
- cresterea nivelului tehnic a produselor cu valoare adaugata ridicata;
- cresterea calitatii productiei;
- cresterea volumului de productie si a profitului.

4. Project – The accomplishing of textile information space -2006-2008
• **Objectives**:
The project objective is the accompplishing of a web portal, „the Textile Information Space", using modern designing and implementing software methods. The portal is likely to be a faithful image of what is and what INCDTP represents within the context of the Romanian and European research.
• **Results**:
The main project result is represented by the IT product, which is the web portal. This is one of the first five portals from Romania which approach the textile domain.
For a simple user, accessing for the first time the web page that hosts the portal does not offer any surprises – the access and the navigation are easy, its aspect being similar to a simple presentation web page. Looking more in detail, its structure is more complex. The technology behind it ensures flexibility in the modality of presenting the information, an easy navigation between various categories and many results as regards the finding of the requested information (the last one being achieved by the possibility of searching and by creating of cross links between various information categories). The information was showed by visitor/user, this having the possibility of selecting the desired information, of searching in the archives and interacting with the portal owner. The portal was created in two versions, English and Romanian, and comprises: general information about the institute, the constitutive departments, the projects elaborated within the research-development-innovation activity, the products and services offered by the institute, the description of the ITA-TEXCONF technologic and business incubator, the obtained accreditations, medals and distinctions, internal and interna-

4. Proiect – Realizarea spatiului informational al textilelor -2006-2008.
• **Obiective**: Proiectul si-a propus realizarea unui portal web "Spatiul informational al textilelor" folosind metode software moderne de proiectare si implementare. Portalul se doreste a fi o imagine cat mai fidela a ceea ce reprezinta si ce poate oferi INCDTP in contextul cercetarii romanesti si europene.
• **Rezultate**: Principalul rezultat al proiectului il reprezinta produsul IT portal web. Acesta este printre primele portale din Romania care abordeaza domeniul textil.
La nivel de simplu utilizator, accesarea pentru prima oara a paginii web care gazduieste portalul nu ofera surprize – accesul si navigarea se realizeaza usor, aspectul fiind asemanator unei simple pagina web de prezentare. Privit in adancime, structura castiga in complexitate. Tehnologia care sta in spatele realizarii acestuia asigura o flexibilitate in modul de prezentare a informatiilor, o navigare usoara intre diversele categorii si o rezultanta sporita in ceea ce priveste regasirea informatiilor dorite (aceasta din urma realizata prin oferirea posibilitatii de cautare si prin crearea de linkuri incrucisate intre diversele categorii de informatii). S-a realizat centrarea informatiilor pe vizitator/utilizator, acesta avand posibilitatea de a selecta informatile dorite, de a cauta in arhive si de a interactiona cu proprietarul portalului. Portalul a fost realizat in doua versiuni, in limba engleza si in limba romana si cuprinde: informatii generale despre institut, departamentele constitutive, proiectele realizate in cadrul activitatii de cercetare-dezvoltare-inovare, produsele si serviciile oferite de catre institut, descrierea incubatorul tehnologic si de afaceri ITA-TEXCONF, acreditarile detinute, medaliile si distinctiile obtinute actiuni interne si internationale, descrierea

tional actions, the description of Certex Publishing House, as well as other various information.

• **Novelty elements**: the elaboration of a data base that comprises the economic factors from the textile domain. Also, another novelty element is represented by the on-line dissemination of the institute activities, at national and international level – the constitutive portal modules integrally approach the whole range of information regarding the research activities and the connected activities.

• **Benefits**: the visibility increasing at national and international level by online description of the institute activities, as well as the interest showed by the research units from the textile domain (and not only these ones), that could easily identify partners for their own research projects.

5. Project – The modeling and processing of the footwear component graphic information by CAD/CAM type applications -2006-2008

The industrially developed countries are more advanced in the elaboration and utilization of the CAD/CAM systems in the footwear industry and by means of these systems, the manufacturing operations can be done automatically. The characteristic elements of the computer-assisted engineering systems (CAD/CAM) refer to graphics, namely to the interactive graphics.

• **Objectives**:

- The introduction of the 2D, 3D digitization and then the data processing by CAD/CAM
- the utilization of 2D digitization and the improving of the multiplication module of the superior footwear assembly

• **Results**:

- the designing by CAD 3D, having the possibility of accepting certain elements from other model, launched in the computer by 3D digitization
- the configuration of the designing and multiplication system of the superior footwear assembly;
- the conceptual and technical preparation with a view to assimilating the CAM system, a system that makes the productive jump imposed by the raising of the labour force cost

• **Product/Technology**:

- novelty elements: the transfer of the graphic information obtained in a standardized file by the programme of the 3D digitizer, for the CAD-CAM system implementation

• Technology / Method

Prel_Digit3d Programme is meant for processing the data resulted after the digitization of a tridimenional footwear model by the help of a digitizing device with a laser head.

editurii Certex precum si alte informatii diverse.

• **Elemente de noutate**: realizarea unei baze de date cuprinzand factorii economici din domeniul textil. De asemenea, un alt element de noutate o reprezinta diseminarea on-line a activitatilor institutului, atat pe plan intern, cat si international - modulele constitutive ale portalului abordeaza in mod integrat intreaga paleta de informatii privind activitatile de cercetare si conexe.

• **Beneficii**: cresterea vizibilitatii pe piata interna si internationala prin prezentarea on-line a activitatilor institutului, precum si interesul manifestat de catre unitatile de cercetare din domeniul textil (si nu numai), care vor putea identifica cu usurinta parteneri pentru proiectele de cercetare proprii.

5. Proiect – Modelarea si prelucrarea informatiilor grafice a componentelor de incaltaminte prin aplicatii de tip CAD/CAM -2006-2008.

Tarile dezvoltate din punct de vedere industrial au un avans considerabil in elaborarea si utilizarea sistemelor CAD/CAM in industria incaltamintei, pe baza acestor sisteme trecandu-se chiar la executarea automata a unor operatii de confectie. Elementele caracteristice ale sistemelor de inginerie asistata de calculator (CAD/CAM) se refera la grafica si anume la grafica interactiva.

• **Obiective**:

- introducerea digitizarii 2D, 3D si apoi prelucrarea datelor prin CAD/CAM
- utilizarea digitizarii 2D si imbunatatirea modului de multiplicare a ansamblului superior al incaltamintei;

• **Rezultate**:

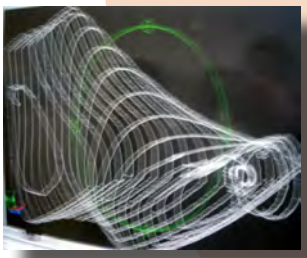
- proiectarea cu ajutorul sistemului CAD 3D cu posibilitati de acceptare a unor elemente de la un alt model, introduse in computer prin digitizarea in 3D;
- configurarea sistemului de proiectare si multiplicare al ansamblului superior al incaltamintei;
- pregatirea conceptuala si tehnica in vederea asimilarii sistemului CAM, sistem care produce saltul productiv impus de cresterea costului fortei de munca

• **Produs/Tehnologie**:

- elemente de noutate - transferul informatiilor grafice realizate de programul digitizorului 3D in fisier standardizat in scopul implementarii sistemului CAD-CAM;

• Tehnologie / Metoda - Programul Prel_Digit3d este destinat prelucarii datelor rezultate in urma digitizarii unui model de incaltaminte tridimensional cu ajutorul unui dispozitiv de digitizare cu cap laser. Dupa prelucare, datele sunt transformate intr-un fisier in format DXF pentru a putea fi importate

After processing, data is trasnformed in a DXF file, in order to be transported in various programmes that allow the 3D modelling.
• **Main characteristics**: the elaboration of the interface having various types of 3D digitization
• **Utilization domains**: trade companies which are producers of footwear and prefabs
• **Benefits/effect**:
- the increasing of the technical level
- the increasing of production quality
- the reducing of the production expenses
-the increasing of the production capacity and profit



CAD CAM design

in diverse programe care permit modelarea formelor 3D.
• **Caracteristici principale**: realizarea interfetei cu diferite tipuri de digitizare 3D;
• **Domenii de utilizare**: societati comerciale producatoare de incaltaminte si prefabricate;
• **Beneficii/efecte**:
- cresterea nivelului tehnic a produselor cu valoare adaugata ridicata;
- cresterea calitatii productiei;
- cresterea volumului de productie si a profitului.

6. Project – Exploratory researches regarding the creation and development of the consumer-footwear product interface with a view to a rapid accomplishment of prototypes - ExplorVIRT- 2006 – 2008
The computerized integration of the production systems, the developing of the conception of methods/instruments able to lead to rapid exchanges, the developing of certain types of industrial machines and robots for a higher flexibility, the recycling and environment considerations, applications of new materials, the production and development of flexible systems oriented towards the consumer which shall satisfy the needs at an accessible price, are trends at global level.
As part of FP3, FP4 and FP5 (l992 – 1994 ; 1996 – 1998 ; 1998 – 2002) a number of over 100 projects in the European footwear sector, having as partners the main European research-development units in the domain of footwear and associated industries : SATRA-UK, PFI-Germany, CTC-France, INESCOP-Spain, TNO-Holland, CIMAC-Italy, CTC-Portugal, EL.KE.DE.-Greece, CRC-CLO-Belgium.
All these projects have as purpose the providing of product research-development services to the footwear companies and shall allow the integration into Manufacture and Euratex technology platforms.
b. **Objectives**:
- The strategic development of the footwear products oriented towards the consumer
- the creation of a development environment for the consumer-footwear product interface
- the conceptualization of the virtual prototype and the rapid accomplishment of the shoe last prototype
- The development and conceptual-functional optimization of the footwear-consumer interface
- The validation of the product development model based on the footwear-consumer interface

6. Proiect – Cercetari exploratorii privind crearea si dezvoltarea interfetei consumator – produs de incaltaminte, in vederea realizarii rapide a prototipurilor -ExplorVIRT - 2006 – 2008
Integrarea computerizata a sistemelor de productie, dezvoltarea conceptiei de metode/instrumente capabile sa conduca la schimburi rapide, dezvoltarea unor noi tipuri de masini si roboti industriali pentru o mai mare flexibilitate, reciclarea si consideratiile de mediu, aplicatii ale noilor materiale, productia si dezvoltarea sistemelor flexibile orientate catre consumator care sa vina in intampinarea nevoilor individuale la un pret accesibil, precum si altele, sunt tot atatea tendinte pe plan mondial.
In cadrul programelor cadru III , IV si V (l992-1994 ; 1996-1998 ; 1998-2002 au fost finantate un numar de peste 100 de proiecte in sectorul european de incaltaminte, avand ca parteneri principalele unitati de cercetare-dezvoltare europene in domeniul incaltamintei si industriilor asociate : SATRA -UK, PFI - Germania, CTC - Franta, INESCOP - Spania, TNO - Olanda, CIMAC - Italia, CTC -Portugalia, EL.KE.DE. - Grecia, CRC-CLO - Belgia.
Toate aceste proiecte au ca scop oferirea de servicii de cercetare dezvoltare de produs firmelor de incaltaminte si sa permita integrarea in platformele tehnologice Manufacture si Euratex.
b. **Obiective**:
- dezvoltarea strategica a produselor de incaltaminte orientate catre consumator;
- crearea unui mediu de dezvoltare a interfetei consummator-produs de incaltaminte;
- conceptualizarea prototipului virtual si realizarea rapida a prototipului de calapod si a incaltamintei;
- dezvoltarea si optimizarea conceptual – functionala a interfetei incaltaminte-consumator;
- validarea modelului de dezvoltare a produsului pe baza in-

c. **Results**:
- the reconfiguration of the footwear product development process by elaborating generative interfaces between this and the consumer, being an originality and novelty element at the national level.
- the establishing of the product strategies and solutions competitiveness increasing of the footwear companies by: the reducing of collection preparation time, the increasing of the number of collections or products from a company portfolio, the reducing of tangible expenses and conversion cost coming from the accomplishing of the unsuccessful physical prototypes.
- the reducing of the degree of product rejecting by the market and the diminishing of the quantity of stock products or the products which record a small number of sales.
- the maximization of the footwear product value by its adapting to the differentiated needs of each user and, at the same time, at a competitive price.

terfetei incaltaminte-consumator.
c. **Rezultate**:
- reconfigurarea procesului de dezvoltare a produsului de incaltaminte prin conceperea de interfete generative intre acesta si consumator, ce constituie un element de originalitate si noutate la nivelul tarii;
- stabilirea strategiilor de produs si solutii de crestere a competitivitatii firmelor de incaltaminte, prin reducerea timpului de pregatire a colectiilor, cresterea numarului de colectii sau produse din portofoliul unei firme, reducerea cheltuielilor materiale si manopera ocazionate de realizarea prototipurilor fizice nereusite;
- reducerea gradului de respingere a produsului de incaltaminte de catre piata si diminuarea cantitatii de produse ramase p e stoc sau care inregistreaza vanzari slabe;
- maximizarea valorii produsului de incaltaminte prin adaptarea acestuia la nevoile diferentiate ale fiecarui utilizator si in acelasi timp, la un pret competitiv.

5.1.7 Laboratory apparatus and technologic equipment

GLOBAL TRENDS AND ACCOMPLISHMENTS

In the field of technologic apparatus and equipment, in the year 2008, the exhibition ITMA ASIA took place in Shanghai, China, as an event of an impressively wide scope.
The exhibition was structured into the following sections: equipment for spinning and nonwoven textiles, weaving equipment, knitting and, respectively, embroidering machines, finishing equipment, laboratory measuring and testing apparatus, recycling equipment, pollution prevention and effluent treating, garment industry equipment, software for design. The range of exhibits effectively destined to the productive chain and the environment effects was completed with auxiliary equipment and accessories, equipment for information monitoring, and also for integrated processing and producing, all being the result of the activity of certain companies, both European and Asiatic ones.
As a general line, the following trends were standing out:
- the accomplishing of reliable equipment characterized by time, energy and technologic stage savings, with emphasis upon satisfying the consumers' exigencies;
- the improving of the operational possibilities of the equipment, the developing and perfecting of the existing processes;
- the controlling of the functional parameters with the help of the computerized equipment that ensure the optimum using of water and energy;
- the improving of efficiency and productivity, as well as the capacity of reproducing the qualitative parameters from one batch to another;
- the endowing of the equipment with systems of production monitoring;
the accomplishing of apparatus for testing the quality indicators;
- optimum ergonomics, easiness in handling;
higher flexibility at higher performances;
environment protection.

x

x x

Within the context of these trends, in the year 2008, the themes of the INCDTP researches in the field of laboratory apparatus and textile technologic equipment comprised the following projects:
1. **Project**: Integrated technologic system of producing the textile ecologic 3d sealing cord meant for industrial applications (ECOTEXIZ) - 2005-2008
Objectives: The designing, manufacturing, testing, homologating of an integrated technologic system of producing the textile ecologic 3D cord mainly used in sealing the connect-

TENDINTE SI REALIZARI PE PLAN MONDIAL

In domeniul aparatelor si echipamentelor tehnologice, in anul 2008 s-a desfasurat expozitia ITMA ASIA – la Shanghai, China, o manifestare de o amploare impresionanta.
Expozitia a fost structurata pe urmatoarele sectiuni: echipamente pentru filare si textile netesute, echipamente pentru tesut, tricotat si, respectiv, masini de brodat, echipamente pentru finisare; aparate de masura si testare pentru laboratoare; echipamente pentru reciclare, prevenirea poluarii si epurare a apelor uzate; echipamente pentru industria confectiilor; software pentru design. Gama de exponate destinate efectiv lantului productiv si efectelor de mediu a fost completata cu echipamente auxiliare si accesorii, echipamente pentru monitorizarea informatiilor, dar si pentru prelucrare si productie integrata, toate rezultate ale activitatii companiilor, atat europene, cat si asiatice.
Ca linie generala, s-au desprins urmatoarele tendinte:
- realizarea de utilaje fiabile caracterizate prin economie de timp, de energie si de faze tehnologice, cu accent pe satisfacerea exigentelor consumatorilor;
- imbunatatirea posibilitatilor operationale ale utilajelor, dezvoltarea si perfectionarea procedeelor existente;
- controlul parametrilor functionali cu ajutorul echipamentelor computerizate, care asigura utilizarea optima a energiei si a apei;
- imbunatatirea eficientei si productivitatii, precum si a capacitatii de reproducere a parametrilor calitativi de la un lot la altul;
- dotarea echipamentelor cu sisteme de monitorizare a productiei;
- realizarea de aparatura de testare a indicatorilor de calitate;
- ergonomie optima, usurinta in manevrare;
- flexibilitate mai mare la performante mai inalte;
- protectia mediului înconjurator.

x

x x

In contextul acestor tendinte, in anul 2008 tematica cercetarilor I.NC.D.T.P. in domeniul aparatelor de laborator si echipamentelor tehnologice textile a cuprins urmatoarele proiecte:
1. **Proiect**: Sistem tehnologic integrat de producere a snurului de etansare 3D ecologic textil, pentru aplicatii industriale (ECOTEXIZ) - 2005-2008
Obiective: Proiectarea, executia, testarea, omologarea unui sistem tehnologic integrat de producere a snurului 3D eco-

ing elements from the industrial installations, as: piston and centrifugal pumps, armatures, blenders, mixers, etc.

logic textil utilizat in principal la etansarea elementelor de legatura din instalatii industriale, cum ar fi: pompe cu piston si centrifugale, armaturi, amestecatoare, malaxoare etc.

Integrated technological system for 3D textile cord

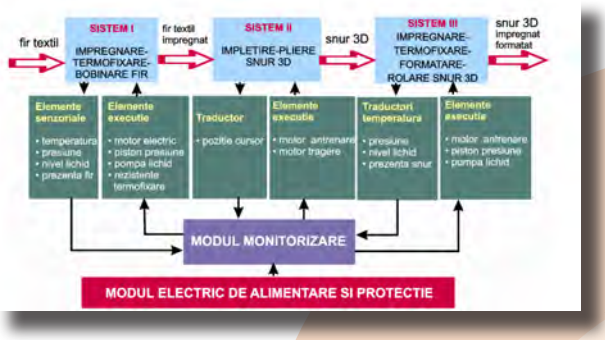
Results:

a. Technologic system and technology of producing the square cross-section braided textile cord

Technologic system characteristics:

The technologic system of producing the square cross-section braided textile cord is made up of the following technologic modules: textile yarn impregnating – heat setting module; textile yarn winding module; machine for braiding the square cross-section textile cord; cord impregnating – heat setting module; cord formatting module; cord rolling module.

The textile yarn impregnating module has the role of ensuring the adequate soaking of the textile yarns with substances that should improve the mechanical, thermal, antifriction and sealing properties of these. The main characteristics: the speed of the textile yarn moving in the impregnating tank: 0.8 m/min.; impregnation solution: watery emulsion of vinyl polyacetate, urea-formaldehyde resins and conditioning additives; solution temperature: 20 – 80°C; tank capacity: about 0.030 m3; electric heating of tank: T= 20 – 80°C; thermostatic control with regulator: 0 – 100°C.



The textile yarn heat setting module has the role of achieving the fixing of the impregnating substance into the textile yarn structure, ensuring the yarn drying, as well as the evaporating of the impregnating substance over plus. The main characteristics: cord moving speed: 0.4 – 2m/min; hot air flow rate: 0.4 – 0.5 m3/min; temperature of the hot air sup-

Rezultate:

1. Sistem tehnologic si tehnologie de producere a snurului textil impletit, cu sectiune patrata

Caracteristici ale sistemului tehnologic:

Sistemul tehnologic de producere snurului textil impletit, cu sectiune patrata, este alcatuit din urmatoarele module tehnologice: modul de impregnare-termofixare a firului textil; modul de bobinare a firului textil; masina de impletit a snurului textil cu sectiune patrata, modul de impregnare-termofixare a snurului textil; modul de formatare a snurului textil; modul de rolare a snurului textil.

Modulul de impregnare a firului textil are rolul de a asigura imbibarea corespunzatoare a firelor textile cu substante care sa imbunatateasca proprietatile mecanice, termice, de antifrictiune si de etansare ale acestora. Principalele caracteristici sunt: viteza de deplasare a firului textil in cuva de impregnare de 0,8 m/min.; solutia de impregnare - o emulsie apoasa de poliacetat de vinil, rasina ureoformaldehidica si aditivi de conditionare; temperatura solutiei de 20 - 80°C; capacitatea cuvei de cca 0,030 m3; incalzirea electrica a cuvei la T = 20 - 80°C; termostatare cu regulator la 0 - 100°C;

Modulul de termofixare a firului textil are rolul de a realiza fixarea substantei de impregnare in structura firului textil, asigurand uscarea firului precum si evaporarea surplusului de substanta de impregnare. Principalele caracteristici sunt: viteza de deplasare a firului de 0,4 - 2 m/min.; debitul de aer

plied by the blower: 120°C; temperature of the hot air at the exit from the drying tunnel: 80°C;
The textile uarn winding module is meant for winding the impregnated yarn before braiding. The main characteristics: the grooved drum rotation speed: 25-250 rot/min; the length of yarn winding on the spool: 100 mm; maximum spool diameter: 30 mm;
The braiding machine plays the part of transforming the impregnated yarns into an impregnated product with square cross section. The main characteristics: rotation speed of the segmented disks: 50 rot/min.; cord pulling speed: 50 – 250 rot/min; cord plying speed: 30 cm/min; square cord dimensions: 6 x 6 mm up to 12 x 12 mm; maximum number of braiding yarns: 16; for diversifying the technological possibilities, distinct electrical motors of actuating the braiding group P = 1 KW, the pulling system P= 0.25 KW and cord plying P=0.1 KW.
The textile cord impregnating module has the role of ensuring the adequate soaking of the textile cord with substances that should improve the mechanical, thermal, antifriction and sealing properties of this. The textile cord-impregnating module is similar to the yarn impregnating one. The differences are to be seen in the yarn supply system, that is cord supply system, respectively, and in the yarn doctoring, that is cord doctoring, respectively. The characteristics of this module are similar to those of the textile yarn impregnating one, the impregnating solution being a watery emulsion of polytetrafluoroethylene with a concentration of 20 □ 50%.
*The textile cord heat setting module does the fixing of the impregnating substance into the cord structure, ensuring the drying of this, as well as the evaporating of the impregnating substance over plus. The main characteristics: the moving speed of the textile cord: 0.4-2 m/min; the hot air capacity supplied by the blower: 1 m3/min; the temperature of the hot air supplied by the blower: 250°C; the temperature of the hot air at exit: 80°C;
The textile cord formatting module does the formatting of the cord coming from the braiding machine by an adjustable roller system. The main characteristics: the cord formatting speed: 3-10 m/min.; the cord dimensions: 6 – 12 mm;
The textile cord rolling module has the role of copping the yarn under coil form on a roll with imposed dimensions. The main characteristics: cord rolling speed: 3 – 10 m/min; cord guide travel: 300 mm.
The technologic system allows the processing of the textile yarns made of natural and synthetic fibres, as well as of fibres having performant characteristics, high-tech ones, such as: para-aramidic, polytetrafluoroethylene, polyester yarns

cald de 0,4 - 0,5 m3/min.; temperatura aerului cald furnizat de suflanta de 120°C; temperatura aerului cald la iesirea din tunelul de uscare de 80°C;
Modulul de bobinare a firului textil este destinat bobinarii firului impregnat inainte de operatia de impletire. Principalele caracteristici sunt: viteza de rotatie a tamburului santuit de 25 - 250 rot./min.; lungimea de depunere a firului pe mosor de100 mm; diametrul maxim al mosorului de 30 mm;
Masina de impletit are rolul de transformare a firelor impregnate in produs impletit cu sectiune patrata. Principalele caracteristici sunt: viteza de rotatie a discurilor cu sectoare de 50 rot./min.; viteza de tragere a snurului de 50 - 250 rot./min.; viteza de pliere a snurului de 30 cm/min.; dimensiunile snurului patrat intre 6 x 6 mm si 12 x 12 mm; numarul maxim al firelor de impletire - 16; pentru diversificarea posibilitatilor tehnologice – dotarea cu motoare electrice distincte de actionare a grupului de impletire, cu P = 1 kW, a sistemului de tragere, cu P = 0,25 kW si de pliere a snurului, cu P = 0, 1 kW;
Modulul de impregnare a snuului textil are rolul de a asigura imbibarea corespunzatoare a snurului textil cu substante care sa imbunatateasca proprietatile mecanice, termice, de antifrictiune si de etansare a acestuia. Modulul de impregnare a snurului textil este similar celui de impregnare a firului. Diferentele se evidentiaza la sistemul de alimentare cu fir, respectiv cu snur si la sistemul de raclare a firului, respectiv a snurului. Caracteristicile acestui modul sunt similare modulului de impregnare fir textil, solutia de impregnare fiind o emulsie apoasa de politetrafluoretilena cu concentratia 20-50%.
Modulul de termofixare a snuului textil are rolul de a realiza fixarea substantei de impregnare in structura snurului, asigurand uscarea acestuia, precum si evaporarea surplusului de substanta de impregnare. Principalele caracteristici sunt: viteza de deplasare a snurului textil de 0,4 -2 m/min.; debitul de aer cald furnizat de suflanta de cca 1 m3/min.; temperatura aerului cald furnizat de suflanta de 250°C; temperatura aerului cald la iesire de 80oC;
Modulul de formatare a snuului textil are rolul de formatare a snurului provenind de la masina de impletit printr-un sistem de role reglabil. Principalele caracteristici sunt: viteza de formatare a snurului de 3 - 10 m/min.; dimensiunile snurului de 6 - 12 mm;
Modulul de rolare a snuului textil are rolul de dispunere a snurului sub forma de spire pe o rola cu dimensiuni impuse. Principalele caracteristici sunt: viteza de rolare a snurului de 3 - 10 m/min.; cursa conducatorului de snur de 300 mm;
Sistemul tehnologic permite prelucrarea firelor textile din fibre naturale si sintetice, precum si din fire cu caracteristici performante, cum ar fi: fire paraaramidice, fire de teflon, fire

in the count range of Nm (Ttex) 0,5 - 20 (2000 - 50).

b. **Product** - Square cross section braided textile cord used for sealing the industrial elements
The structure of the square cord presents the laying of the yarns on the circumference, the yarns having evolutions on the diagonal under spiral form. Half of the yarns form a right spiral, and the other half a left spiral. One can introduce filling yarns that keep parallel to the product margins and have the role of improving the functionality properties of this.
Characteristics:
• square cross section 3D form, with the side of 6 ¸12 mm
• 8 - 16 braiding yarns
• compact structure made with or without filling yarns
• yarn count of Nm 0,5 - 2
• braid setting of 10 ¸ 30 braids/cm
• raw material: ecologic yarns that are resistant to temperature, pressure and rubbing
Novelty elements
Because of the novelty elements of the project, the patent application entitled **MACHINE FOR SQUARE SECTION TEXTILE CORD BRAIDING** was filed at OSIM with registration no.: a 2007-0018/28.11.2007.
Utilization fields
The square cross section textile cord is used for sealing the various industrial elements like: pumps, armatures, blenders, mixers, filter systems, etc.
The application fields for these researches are the industrial sectors: chemistry, petrochemistry, metallurgy, food industry, machine building, dyestuff industry, paper industry, etc.
Benefits
A technical-economical impact can be achieved by increasing the quality and competitiveness of the Romanian products on the European market, the diminishing of the currency effort. By indigenously accomplishing these products, one can estimate the currency effort that is afferent to the imports by 480,000 euro/year.

2. **Project:** Intelligent mobile mechatronics systems having an ecologic impact for the textile equipment - 2006-2008
Objectives:
• Product elaboration:
system for monitoring the textile equipment by using GSM Network – SMMITEX 1
- equipment with incorporated computerized systems, meant for controlling the pressing forces at the pressure arms of the

poliesterice, cu gama de finete Nm (Ttex) 0,5 - 20 (2000 - 50).

b. **Produs** - Snur textil impletit cu sectiune patrata utilizat pentru etansarea elementelor industriale
Structura snurului patrat prezinta dispunerea firelor pe circumferinta, firele avand evolutii pe diagonala sub forma unei spirale. Jumatate din fire formeaza o spirala de dreapta si cealalta jumatate o spirala de stanga. Se pot introduce fire de umplutura, care se mentin paralele cu marginile produsului si care au rolul de îmbunatati proprietatile de functionalitate ale acestuia.


Textile cord

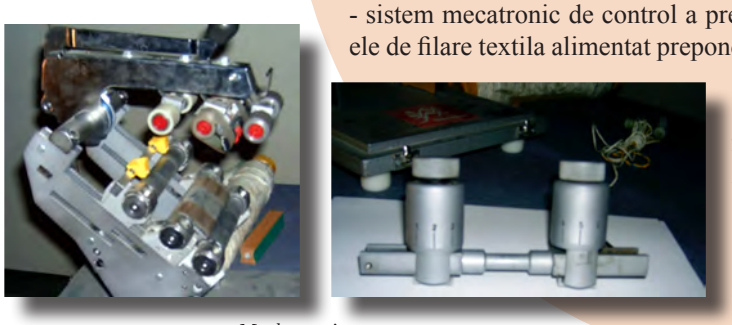
Caracteristici:
• forma 3D cu sectiune patrata, cu latura de 6 -12 mm;
• 8 - 16 fire de impletitura;
• structura compacta realizata cu sau fara fire de umplutura;
• finetea firelor Nm 0,5 - 2;
• desimea impletiturii 10 - 30 impletituri/cm;
• materia prima - fire ecologice rezistente la temperatura, presiune si frecare.
Elemente de noutate:
Ca rezultat al elementelor de noutate ale proiectului a fost depusa la OSIM cererea de brevet de inventie cu titlul **Masina de impletit snur textil cu sectiune patrata,** nr. de inregistrare: A 2007-0018/28.11.2007.
Domenii de utilizare:
Snurul textil ce sectiune patrata este utilizat pentru etansarea diverselor elemente industriale, cum ar fi: pompe, armaturi, amestecatoare, malaxoare, sisteme de filtrare etc.
Domeniile de aplicare ale acestor cercetari sunt sectoarele industriale: chimie, petrochimie, metalurgie, industria alimentara, constructii de masini, industria vopselelor, industria hartiei etc.


Pump

Beneficii:
Impact tehnico-economic prin cresterea calitatii si competitivitatii produselor romanesti pe piata europeana, reducerea efortului valutar. Prin realizarea în țară a acestor produse se estimează reducerea efortului valutar aferent importurilor cu 480 000 de euro/an.

2. **Proiect**: Sisteme mecatronice mobile inteligente cu impact ecologic pentru echipamente textile - 2006-2008
Obiective:
• Elaborare de produse:
- sistem de monitorizare a utilajelor textile utilizind GSM Network - SMMITEX 1;
- echipament cu sisteme computerizate incorporate pentru controlul fortelor de apasare la bratele de presiune ale tre-

textile fibre drawing frames – SMMITEX 2;
- integrated mechatronic assembly meant for measuring the power consumption of the rotating parts from the ring spinning frames –SMMITEX 3;
- mechatronic system for controlling the presence of the yarn in the textile spinning processes, mainly fed with solar energy – SMMITEX 4;
- integrated mobile mechatronic system with specialized sensor, meant for controlling certain parameters that are specific to the dynamics of the textile spindles – SMMITEX 5;



Mechatronic systems

The testing of the technologic performances for the elaborated mechatronic systems
The homologating of the products at the prototype level

Results:

1. Manufacturing projects:
SMMITEX 2 – Equipment with incorporated computerized systems, meant for controlling the pressing forcers at the pressure arms of the textile fibre drawing frames
SMMITEX 3 – Integrated mechatronic assembly meant for measuring the power consumption of the rotating parts from the ring spinning frames
SMMITEX 4 – Mechatronic system meant for controlling the presence of the yarn in the textile spinning processes, mainly fed with solar energy
2. Mechanical prototypes: SMMITEX 2, SMMITEX 3, SMMITEX 4
3. Trade Mark "SMMITEX"

Main characteristics

Apparatus meant for controlling the pressing forces at the pressure arms of the textile fiber drawing frames.
The whole range of the pressure cylinder lengths for the drawing frames was covered with two measure bars having the following characteristics:
• for the small bar:
- the travel on the bar guides, Lmin = 60 mm
Lmax = 100 mm;
- maximum pressing force Fmax = 60 daN
• for the big bar:
- the travel on the bar guides, Lmin = 100 mm Lmax = 180 mm;
- maximum pressing forceFmax = 85 daN
Nonconventional energy supply.

nurilor de laminat fibre textile - SMMITEX 2;
- ansamblu mecatronic integrat pentru masurarea consumurilor de putere ale pieselor rotitoare de la masinile de filat cu inele - SMMITEX 3;
- sistem mecatronic de control a prezentei firului in procesele de filare textila alimentat preponderent cu energie solara- SMMITEX 4;
- sistem mecatronic mobil integrat cu senzor specializat pentru controlul unor parametrii specifici dinamicii fuselor textile- SMMITEX 5;
Testarea performantelor tehnologice pentru sistemele mecatronice elaborate;
Omologarea produselor la nivel de prototip.

Rezultate:

1. Proiecte de executie:
- SMMITEX 2- Ehipament cu sisteme computerizate incorporate pentru controlul fortelor de apasare la bratele de presiune ale trenurilor de laminat fibre textile;
- SMMITEX 3- Ansamblu mecatronic integrat pentru masurarea consumului de putere la piesele rotitoare de la masinile de filat cu inele;
- SMMITEX 4 - Sistem mecatronic de control a prezentei firului in procesele de filare textila alimentat preponderent cu energie solara;
2. Prototipuri mecanice: SMMITEX 2, SMMITEX 3, SMMITEX 4
3. Marca inregistrata "SMMITEX"

Caracteristici principale:

Aparat pentru controlul fortelor de apasare la bratele de presiune ale trenurilor de laminare a fibrelor textile;
Intreaga gama a lungimilor cilindrilor de presiune pentru trenurile de laminare a fost acoperita cu doua bare de masura, avand urmatoarele caracteristici:
• pentru bara mica:
- cursa pe ghidajele barei, Lmin = 60 mm Lmax = 100 mm;
- forta de apasare maxima, Fmax = 60 daN
• pentru bara mare:
- cursa pe ghidajele barei, Lmin = 100 mm Lmax = 180 mm;
- forta de apasare maxima, Fmax = 85 daN
Alimentare cu energie neconventionala.

5.1.7 Laboratory apparatus and technologic equipment

Novelty elements

The products and the accomplishing technologies, as ideas/concepts/achievements are entirely new solutions and have a high degree of originality as compared to the connected national/European projects. The research-development works proposed by the project were going on at the border of scientific and technical knowledge, among the IT, textile, electro technical domains, contributing to the development of these priority domains of the national economy.

The performance and quality parameter level of the proposed solutions is highlighted by:

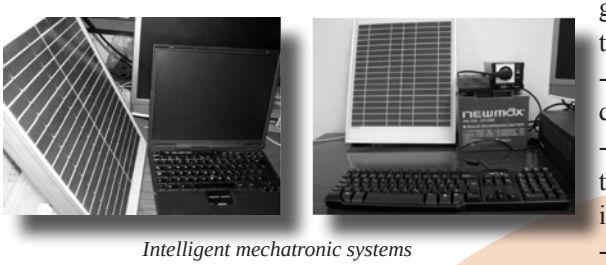
- using nanotechnologies and nanostructures for the purpose of accomplishing performant products, which are capable of monitoring the parameters that are specific to the technologies that are served by various textile equipment;
- applying certain top, non-polluting technologies in the IT/textile/electro-technical industries;

the mechatronic systems elaborated during the project ongoing ensure the safety and comfort conditions because the original solutions proposed for integrating these into the textile equipment structure could be achieved without any connections, the interface being ensured by the characteristics of the communication components.

Utilization fields

The potential users of the intelligent mobile mechatronic systems having an ecologic impact, meant for the textile equipment are:

- the economic units from the textile industry;
- the producers of textile equipment from the machine building industry;
- the economic units from the electronic industry that will accomplish integrated electronic systems;
- the economic units in the line that are interested in using the nonconventional energy sources;
- small enterprisers oriented towards ecologic technologies.



Intelligent mechatronic systems

Benefits:

By implementing the intelligent mobile mechatronic systems on the equipment from the production rooms, the turnover and the profit will get raised by about 20%. The Plastprod SRL partner envisages the achieving of a turnover of 100,000 EUR/year and a profit of 25,000 EUR/year.

Elemente de noutate:

Produsele si tehnologiile de realizare, ca idei/conceptii/realizari constituie solutii absolut noi si au un grad ridicat de de originalitate, fiind raportat la proiecte nationale/europene conexe. Lucrarile de cercetare-dezvoltare propuse de proiect s-au desfasurat la frontiera cunoasterii stiintifice si tehnice, intre domeniile IT, textil, electrotehnic, contribuind la dezvoltarea acestor domenii prioritare ale economiei nationale.

Nivelul parametrilor de performanta si calitate al solutiilor propuse se distinge prin:

- utilizarea de nanotehnologii si nanostructuri in scopul realizarii de produse performante capabile sa monitorizeze parametrii specifici tehnologiilor deservite de diferite echipamente textile;
- aplicarea unor tehnologii de varf, nepoluante in industriile IT/textila/electrotehnica;
- sistemele mecatronice elaborate pe parcursul derularii proiectului asigura conditiile de siguranta si confort deoarece solutiile originale propuse pentru integrarea acetora in structura echipamentelor textile s-a fi realizat fara conexiuni, interfata fiind asigurata prin caracteristicile componentelor de comunicatii.

Domenii de utilizare

Potentialii utilizatori ai sistemelor mecatronice mobile inteligente cu impact ecologic pentru echipamente textile sunt:

- unitatile economice din industria textila;
- producatorii de echipamente textile din industria constructiilor de masini;
- unitatile economice din industria electronica ce vor realiza sistemele electronice integrate;
- unitatile economice de profil interesate de utilizarea surselor de energie neconventionala;
- mici intreprinzatori orientati spre tehnologii ecologice.

Beneficii:

Prin implementarea sistemelor mecatronice mobile inteligente pe echipamentele din sectiile de productie se va mari cifra de afaceri si profitul cu cca 20%. Partenerul Plastprod SRL preconizeaza realizarea unei cifre de afaceri de 100 mii euro/an si a unui profitului de 25 mii euro/an.

3. **Project**: The designing of devices meant for accomplishing 3d components for the aerospace industry - 2006-2008

Objectives:

• The developing of technologic systems meant for producing aeronautic special products in the textile industry in order to reduce imports (both of the machine meant for producing parachute cords, and of the parachute cords that are 100% imported at present).

• The accomplishing of certain paragliders with outstanding performances from the point of view of the aerodynamic, geometric and mass characteristics represents one of the directions of developing the motorless flying that is going on at present at the worldwide level.

Results:

a. Product: The prototype machine for manufacturing the 3D - parachute cord components meant for paragliders

Main characteristics:

The machine for accomplishing the 3D components has one working position and it is endowed with the following control and adjusting devices:

- pulling device meant for observing the manufacturing technology in order to ensure the needed tension;
- brake controlling device meant for the core (para-amide ones) and sheath (polyester) yarns;
- tensioning – guiding device for the core yarns;
- devices meant for keeping constant the dynamic loading for the parachute cord component yarns.

Number of systems for the sheath - 8
Maximum diameter of the structure - 2,0 mm
Maximum capacity of the working systems - 1,416 cmc

Prototype machine for manufacturing 3D parachute cord

Motor power - 0,75 CP
Maximum working rotating speed - 195 rot/min
Structure maximum density - 55 braids/cm
Minimum number core systems - 8
Core yarn tensioning 0,25 - 0,40 cN/dtex
Sheath yarn tensioning 0,15 - 0,35 cN/dtex

b. Technologies:

There were elaborated two technologies meant for parachute glider accomplishing by using the yarns for:

- KEVLAR core with length density of 930 dtex

3. **Proiect**: Proiectare dispozitive de realizare componente 3D pentru industria aerospatiala - 2006-2008

Obiective:

• Dezvoltarea de sisteme tehnologice pentru producerea de produse speciale pentru domeniul aeronautic in industria textila in vederea reducerii importurilor (atat a masinii pentru producerea suspantelor cat si a suspantelor care in prezent sunt importate 100%).

• Realizarea unor parapante cu performante deosebite din punct de vedere al caracteristicilor aerodinamice, geometrice si masice reprezinta una din directiile de dezvoltare a zborului fara motor care se desfasoara in prezent pe plan mondial.

Rezultate:

a. Produs: Masina prototip pentru realizarea componentelor 3D - suspante pentru parapante

Caracteristici principale:

Masina pentru realizarea componentelor 3D are un post de lucru si este dotata cu urmatoarele dispozitive de control si reglare:

- dispozitiv de tragere pentru respectarea tehnologiei de executie in vederea asigurarii tensiunii necesare;
- dispozitive de control a franarii pentru firele din miez (din para – amida) si manta (din poliester);
- dispozitive de tensionare – ghidare pentru firele din miez;

Numarul de sisteme pentru manta- 8
Diametrul maxim al structurii - 2,0 mm
Capacitatea maxima a sistemelor de lucru - 1,416 cmc

Puterea motorului - 0,75 CP
Turatia maxima de lucru - 195 rot/min
Desimea maxima – in structura - 55 impletituri/cm
Numarul minim de sisteme pentru miez - 8
Tensionarea firelor pentru miez 0,25 - 0,40 cN/dtex
Tensionarea firelor pentru manta 0,15 - 0,35 cN/dtex

b. Tehnologii:

S-au elaborat doua tehnologii pentru realizarea suspantelor prin utilizarea firelor pentru:

- PES sheath with the length density of 167 or 1100 dtex

Novelty elements:

Because of the novelty elements, the patent application entitled "Braided structures meant for the aerospace industry and technology of accomplishing these" was filed at OSIM with no. A/00968/ 09.12. 2008

Utilization fields:

Manufacturing of paragliders that are meant for the civil sector (the paraglider aero clubs) and the endowment of the Ministry of National Defence (paraglider flight of the special troops)

Benefits:

At present, the materials used for accomplishing the articles meant for the aerospace industry are imported in a percentage of 100%. The price of paragliders is about 3,500 €. For a paraglider, 300 – 350 m of parachute cord are needed at a price of 0.5 €/m, resulting the sum of 15—175 €/paraglider.

- miez din KEVLAR cu densitatea de lungime de 930 dtex;
- manta din PES cu densitatea de lungime de 167 sau1100 dtex.

Elemente de noutate:

Ca rezultat al elementelor de noutate a fost depusa la OSIM cerera de brevet de inventie: "Structuri impletite pentru industria aerospatiala si tehnologie de realizare a acestora", dosar OSIM nr. A/00968/ 09.12. 2008

Domenii de utilizare:

Executie de parapante ce au ca destinatie sectorul civil (aerocluburile de parapanta) si dotarea MapN (zbor cu parapanta a trupelor speciale).

Beneficii:

In prezent materialele utilizate pentru realizarea articolelor destinate industriei aerospatiale sunt importate in proportie de 100%. Parapantele au un pret de aproximativ 3500 €. Pentru o parapanta sunt necesari 300-350 m de suspanta cu un pret de 0,5 €/m, rezultand 150-175 € /parapanta.

4. **Project:** Devices of controlling the treatments applied by padding - 2006-2008

Objectives:

The accomplishing of a control device that should allow the diminishing of the complex solution of final finishing deposited on the textile material

Results:

a. Produse: Devices meant for controlling the treatments applied by Padding – prototype

Control device

The device meant for controlling the treatments applied by padding ensures the rapid intervention of the operator in the correct ongoing of the technologic process. At the same time, by executing the outer walls of the tank of a transparent material (stratified polycarbonate) the protection of the padder cylinders is ensured.

The constructive peculiarities of this device are represented by the lowering of the collecting tank under the sight level of the operator with the help of certain special spacing devices. They are also represented by the introducing of a distributor cylinder on the overall width of the tank by which compressed air is blown off on the material, the control of the substance quantity deposited by adapting the beating blade frame.

4. **Proiect:** Dispozitive de control a tratamentelor aplicate prin fulardare- 2006-2008

Obiective:

Realizarea unui dispozitiv de control, care sa permita diminuarea cantitatii de solutie complexa de finisare finala depusa pe materialul textil.

Rezultate:

a. Produse: Dispozitive de control a tratamentelor aplicate prin fulardare - prototip

Dispozitivul de control al tratamentelor aplicate prin fulardare asigura interventia rapida a operatorului in derularea corecta a procesului tehnologic. Totodata, prin realizarea peretilor exteriori ai cuvei dintr-un material transparent (policarbonat statificat) este asigurata protejarea cilindrilor fulardului. Particularitatile constructive ale acestui dispozitiv sunt: coborarea cuvei colectoare sub nivelul de observatie al operatorului cu ajutorul unor dispozitive distantiere speciale, introducerea un cilindru distribuitor pe toata latimea cuvei - prin care se purjeaza aer comprimat pe material, controlul cantitatii substantei depuse - prin adaptarea cadrului paletei de batere.

Main characteristics:
- rotation speed at the axis 0-500 rot/min
- maximum width of the textile matertial: 1800 mm
- total blower number: 900
- working pressure: 6 barr
- rotation radius max: 58 mm
- consumed power: 200 W

The padding device ensures:
- adequate following up of the material route from onward the impregnating device;
- intervention in the case of appearance of certain mechanical equipment blockings;
- the uniform diminishing of the impregnating substance overplus on the overall material width;
- the improving of the system of ensuring the control of deposited substance quantity;
- vibration diminishing.

b. Technologies: Modenized technology of textile material padding

Novelty elements:

The novelty element of this device resides in the fact that it functions independently and can be attached on all types of stenters. The system of diminishing the deposited substance overflow is revolutionary at the national level owing to its efficiency and complexity.

As a result of the novelty elements of the project, the patent application entitled "Devices of controlling the treatments applied by padding" was filed at OSIM with no. A/00806/08.10.2008.

Utilization fields:

The potential users of this device are both the state capital trade companies and the private capital small and the medium enterprises from the textile domain.

Benefits:

The productivity increasing, the import reducing by about 50.000 euro/year.

5. Project: Laboratory and industrial technologic systems meant for textile article coating - 2007-2008

Objectives:
- the developing of technologic systems meant for the textile industry with a view to elaborating the formulas;
- the creating of the premises for aligning to the new coating technologies, applied at the European and worldwide level;
- the technological re-endowing of the textile factories with coating performant

Coating instalation

Caracteristici principale:
- viteza de rotatie a axului: 0-500 rot./min.;
- latimea max. a materialului textil: 1 800 mm;
- numarul total de suflante: 900;
- presiunea de lucru: 6 bari;
- raza de rotatie, max.: 58 mm;
- puterea consumata: 200 W.

Dispozitivul de fulardare asigura:
- urmarirea corespunzatoare a traseului materialului dinspre dispozitivul de impregnare;
- interventia - in cazul aparitiei unor blocaje mecanice ale utilajului;
- diminuarea uniforma a surplusului de substanta de impregnare pe toata latimea materialului;
- imbunatatirea sistemului de asigurare a controlului cantitatii de substanta depusa;
- diminuarea vibratiilor.

b. Tehnologii: Tehnologie modernizata de fulardare a materialelor textile

Elemente de noutate:

Elementul de noutate a acestui dispozitiv consta in faptul ca funtioneaza in regim independent si poate fi atasat pe toate tipurile de rame de uscat. Sistemul de diminuare a surplusului de substanta depusa este revolutionar la nivel national datorita eficientei si complexitatii lui.

Datorita elementelor de noutate a proiectului, a fost depusa la OSIM cererea de brevet de inventie: "Dispozitive control a tratamentelor aplicate prin fulardare", dosar OSIM nr. A/00806/08.10.2008.

Domenii de utilizare:

Potentialii utilizatori ai acestui dispozitiv sunt atat societatile comerciale cu capital de stat, cat si intreprinderile mici si mijlocii cu capital privat din domeniul textil.

Beneficii:

Cresterea productivitatii, reducerea importurilor cu circa 50.000 euro/an.

5. Proiect: Sisteme tehnologice de laborator si industriale pentru peliculizarea articolelor textile - 2007-2008

Obiective:
- Dezvoltarea de sisteme tehnologice pentru industria textila in vederea elaborarii retetelor - Crearea premizelor de aliniere la noile tehnologii de peliculizare, aplicate pe plan european si mondial;
- Retehnologizarea fabricilor textile cu aparatura performanta de peliculizare, pe tipuri de produse si procese de fabricatie, care sa asigure cresterea preciziei, a pro-

apparatus, by product types and manufacturing processes, which should ensure the precision, productivity increasing and the rapid information return towards the producer.

Results:

1. Laboratory and industrial technologic systems meant for textile article coating: laboratory apparatus mean for coating and coating installation – prototype.

Main characteristics:

- The laboratory and industrial technologic systems meant for textile article coating effect the coating with a precision of 0,01 mm on the overall width of the textile material that is subject to this technologic operation.,
- The functional adjusting of the two systems is effected vertically. The position of the doctor blade can also be adjusted by the bias against the vertical plane by maximum 200 depending on the viscosity of the employed add-on material.
- The size of the sample subject to coating with the laboratory coating apparatus is: 496 x 496 mm.
- The working width for the coating installation is: 1,800 mm.

b. Textile article coating technology

Novelty elements:

- The coating effecting on samples having dimensions bigger than those of the existing apparatus
- The accomplishing of a new system of fixing the samples of material that is subject to coating

As a result of the project novelty elements the patent application entitled "Laboratory equipment meant for textile article coating" was filed at OSIM with no. A/00967/09.12.2008

Utilization field:

The systems are meant for being used in the research laboratories and within the laboratories from the textile enterprises.

Benefits:

The reducing of the currency effort by endowing the INCDTP laboratory and pilot plant with equipment capable of diversifying the specific activities.

6. Project: Laboratory apparatus meant for textile material dyeing (fibre, yarn, woven fabric, knitted fabric)
- 2006-2008

Objectives:

• The project objective resided in the accomplishing and experimenting of a performant laboratory apparatus that is enlisted in the "e-textile" concept. The apparatus is endowed with a temperature regulator having the possibility of heating effecting according to the dyeing chart and the rapidly carrying out of tech-

ductivitatii si returul rapid al informatiei catre producator.

Rezultate:

1. Sisteme tehnologice de laborator si industriale pentru peliculizarea articolelor textile: aparat de laborator pentru peliculizare si instalatie de peliculizare – prototip.

Caracteristici principale:

- Sisteme tehnologice de laborator si industriale pentru peliculizarea articolelor textile efectueaza peliculizarea cu o precizie de 0,01 mm pe toata latimea materialului textil supus acestei operatii tehnologice;
- Reglajul functional al celor doua sisteme se realizeaza pe verticala. Pozitia raclului se poate regla si prin inclinarea fata de planul vertical cu max.200 in functie de vascozitatea materialului de adaos utilizat;
- Marimea mostrei supusa peliculizarii cu aparatul de laborator pentru peliculizare: 496 x 496 mm;
- Latimea de lucru pentru instalatia de peliculizare: 1 800 mm.

b. Tehnologie de peliculizare a articolelor textile

Elemente de noutate:

- realizarea peliculizarii pe mostre cu dimensiuni mai mari decat a aparatelor existente;
- realizarea unui nou sistem de fixare a mostrelor de material supus peliculizarii.

Datorita elementelor de noutate a proiectului, a fost depusa la OSIM cererea de brevet de inventie „Utilaj de laborator pentru peliculizarea articolelor textile", dosar nr. A/00967/09.12.2008

Domenii de utilizare:

Sistemele sunt destinate utilizarii in laboratoarele de cercetare si in cadrul laboratoarelor din intreprinderile textile.

Beneficii:

Reducerea efortului valutar prin dotarea laboratorului si a statiei pilot I.N.C.D.T.P. cu echipamente capabile sa diversifice activitatile specifice.

6. Proiect: Aparat de laborator pentru vopsirea materialelor textile (fibra, fir, tesatura, tricot)- 2006-2008

Obiective:

• Obiectivul proiectului a constat in realizarea si experimentarea unui aparat de laborator performant, inscris in conceptul "e-textile", prevazut cu regulator de temperatura avand posibilitatea realizarii incalzirii conform diagramei de vopsire si a efectuarii de probe teh-

Dyeing apparatus

nologic tests in conditions of minimum specific consumption. This necessity is imposed by the abundance of chemical products and the raw material variety.

Results:

a. Product: Laboratory apparatus meant for the textile material dyeing and the establishing of the dyeing formulas and shades in the laboratory.

Main characteristics:

The apparatus allows the laboratory dyeing of the textile material samples for the sake of establishing the dyeing formulas, the testing of the dyes used for textile material dyeing, as well as the dyeing resistance. The dyeings are done at temperatures ranging between 30-98ºC, by exhaustion from dyestuff solutions or dispersions.

Main technical characteristics:

- working temperatures :30°C-100°C
- thermosetting precision :±1°C
- beaker capacity : 750 ml
- beaker number: 12 x750ml

- the possibility of test programming, leading and controlling, that is:

• the displaying of the dye diagram

• the displaying of the pitch, temperature, temperature, time gradient

• the possibility of alarming the operator for various situations

• easy programming owing to the specialized functions

b. Tehnology: Laboratory technology for textile material dyeing (fibre, yarn, woven fabric, knitted fabric)

Novelty elements:

The main novelty element is the process controller with which the dyeing apparatus is endowed. With the help of this, the dyeing process is completely automated, the dyeing is done according to the dyeing diagram.

Utilization field:

The apparatus is meant for the trade companies from the textile industry that are endowed with own laboratories of carrying out analyses and tests.

Benefits :

The diminishing of the currency effort by way of endowing the INCDTP laboratory with apparatus that is capable of diversifying the specific activities, with a view to product quality and competitiveness increasing on the European and international market.

Strategic directives 2009

The developing directions of INCDTP for this domain include :

nologice rapid si in conditii de consumuri specifice minime, necesitate impusa de abundenta produselor chimice si varietatea materiilor prime.

Rezultate:

a. Produs: Aparat de laborator pentru vopsirea materialelor textile destinat stabilirii in laborator a nuantelor si retetelor de vopsire

Caracteristici principale:

Aparatul permite vopsirea in laborator a mostrelor de materiale textile in scopul stabilirii retetelor de vopsire, testarii colorantilor utilizati la vopsirea materialelor textile, precum si rezistentei vopsirii. Vopsirile se executa la temperaturi cuprinse intre 30-98ºC, prin epuizare din solutii sau dispersii de coloranti.

Principalele caracteristici tehnice:

- temperatura de lucru: 30°C-100°C;
- precizia de termostatare: ±1°C;
- capacitatea paharelor: 750 ml;
- numarul paharelor: 12 x750 ml;
- posibilitatea programarii, conducerii si controlului testului, respectiv:

• afisarea diagramei de vopsire;

• afisarea pasului, a temperaturii, a gradientului de temperatura, a timpului;

• posibilitate de alarmare a operatorului pentru diverse situatii;

• programare usoara, datorita functiilor specializate.

b. Tehnologie: Tehnologie de laborator pentru vopsirea materialelor textile (fibra, fir, tesatura, tricot)

Elemente de noutate:

Principalul element de noutate este controllerul de proces cu care este dotat aparatul de vopsit. Cu ajutorul acestuia procesul de vopsire este complet automatizat, vopsirea se realizeaza dupa diagrama de vopsire.

Domenii de utilizare:

Aparatul este destinat societatilor comerciale din industria textila ce au in dotare laboratoare proprii de analize si experimentari.

Beneficii :

Reducerea efortului valutar prin dotarea laboratorului din I.N.C.D.T.P. cu aparatura capabila sa diversifice activitatile specifice, in vederea cresterii calitatii si competitivitatii produselor romanesti pe piata europeana si internationala.

Directii strategice 2009

Directiile de dezvoltare ale I.N.C.D.T.P. pentru acest domeniu includ:

5.1.7 Laboratory apparatus and technologic equipment

• the developing of equipment meant for accomplishing textile technical articles, having in view the increasing of the economic and strategic potential of this product range. The technical textiles always found an ever-increasing range of applications in diverse sectors like: engineering, constructions, auto industry, agriculture, energetic and environment technologies, health, defence, aero spatial, etc.
• the developing of equipment meant for SMEs, within the actual national and worlwide context of small enterpriser developing
• the accomplishing of apparatus meant for testing the quality indicators, with the observing of the standards that are specific to the textile domain
• automation, informatization, with a view to ensuring reproducibility and avoiding the operator's subjectivism
• the optimizing of the equipment ergonomicity, easy handling
• flexibility, the necessity of increasing the capacity to respond to an as large as possible offer range
• progressive kilocurie of the laboratory equipment, apparatus, the outdated processes and technologies with the ones that are modern and accepted by the European community

• dezvoltarea de echipamente destinate realizarii de articole tehnice textile, avand in vedere cresterea potentialului economic si strategic al acestei game de produse. Textilele tehnice au gasit mereu o gama din ce in ce mai mare de aplicatii in sectoare diverse cum ar fi: inginerie, constructii, industria auto, agricultura, tehnologii energetice si de mediu, sanatate, aparare, aerospatiale etc.;
• dezvoltarea de echipamente destinate IMM-urilor, in contextul actual national si mondial de dezvoltare a micilor intreprinzatori;
• realizarea de aparatura de testare a indicatorilor de calitate, cu respectarea normativelor si standardelor specifice domeniului textil;
• automatizare, informatizare, in vederea asigurarii reproductibilitatii si evitarii subiectivismului operatorului;
• optimizarea ergonomicitatii echipamentelor, usurinta in manevrare;
• flexibilitate, necesitatea de a creste capacitatea de a raspunde unei game cat mai largi de oferta;
• inlocuirea progresiva a echipamentelor, aparaturii de laborator, a proceselor si tehnologiilor invechite cu cele moderne si acceptate de comunitatea europeana.

5.1.8 Garment design

Key factor for the increase of textile products competitiveness and for the creation of customized products is the very textile design activity. In modern society, design plays an important role, due to its function of linker between technology and art, between ideas and funding solutions, between culture and commerce. The true constant challenge in creating superior products or in finding performance solutions for the already existent ones, or either finding brand new concepts, all are based gates opened by design under its course.

DESIGN activity within INCDTP has as main objective the conduct of researches on the clothing design trends – related to cut lines, style influences, fabrics, chromatics – and the elaboration of specialized season-structured catalogues – autumn-winter, spring-summer. These generally informing syntheses represent a starting point, a source of inspiration for the Romanian textile garments producers, a helping hand in the effort to harmonize Romanian companies to the foreign market requests and to increase their products competitiveness.

For a best exemplification of the themes characterizing each season, there have been conceived clothing collections underlining the general aspects specific to the year period in question.

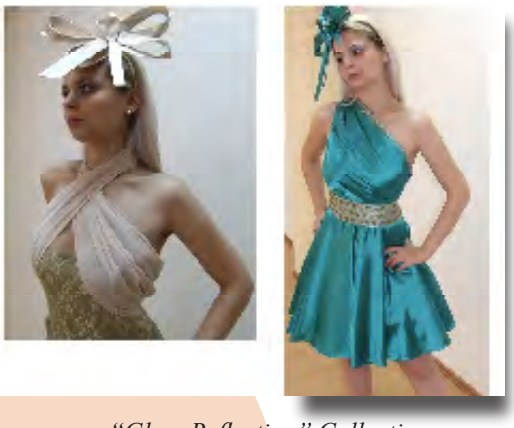
These collections were on show within some profile fairs and other events:

• "Fashion Addicts Night"-TINIMTEX – May and September 2008

• "Research Exhibition 2008"- October 2008, Bucharest

• "Romanian Fashion Evening"-Paris, Romanian Embassy, 3rd December 2008

Besides the design oriented activity, the process of a new product development is another important competitiveness factor for an industry operating on complex and versatile markets. These factors cover both creative elements, and knowledge-based Science/Technology ones, yet the success lying largely in the



"Glam Reflection" Collection

Factorul primordial al cresterii competitivitatii produselor textile si realizarea de produse personalizate il reprezinta activitatea de design. In societatea contemporana designul detine un rol important, datorita rolului sau de punte intre tehnologie si arta, intre idei si solutii de finantare, intre cultura si comert. Adevarata provocare consta in a creea produse superioare sau de a gasi solutii performante pentru cele existente, concepte noi, toate bazate pe solutii generate de procesul de design.

Activitatea de DESIGN din cadrul I.N.C.D.T.P. are drept obiectiv principal efectuarea de cercetari in domeniul tendintelor designului vestimentar cu privire la linie, influente stilistice, materiale, paleta cromatica si realizarea de cataloage specializate, specifice sezoanelor de toamna-iarna si primavara-vara. Aceaste sinteze informationale generale reprezinta un punct de plecare, o sursa de inspiratie pentru producatorii de confectii textile din Romania, asigura alinierea firmelor romanesti la cerintele pietei externe si o crestere a competitivitatii produselor.

Pentru o mai buna exemplificare a temelor ce caracterizeaza fiecare sezon s-au realizat colectii vestimentare ce subliniaza aspecte generale specifice.

Prezentarea acestor colectii s-a realizat in cadrul unor targuri si evenimente de profil:

• "Noaptea devoratorilor de Moda"-TINIMTEX-mai si septembrie 2008

• "Salonul Cercetarii 2008"- Bucuresti, octombrie;

• "Seara Modei Romanesti"- Paris, Ambasada Romaniei, 3 decembrie 2008;

Alaturi de activitatea de design, procesul de dezvoltare a unui produs reprezinta factori importantii de competitivitate pentru o industrie care operează pe piețe complexe si mobile. Acesti factori cuprind atât elementele creative, cât şi cele ştiinţifico-tehnice bazate pe cunoaştere, însă succesul depinde în mare măsură de utilizarea unor con-

5.1.8 Garment design

use of new concepts, methods, and technologies needed for the ideas to take shape and be exploited industrially. In order to support the SMEs, INCDTP succeeded in equipping the Design Department with software products, including steps for the entire product processing cycle, from its arise, through its design, and to its finishing phase. These software units allow the users:

- Virtually create some model;
- Diversify the creation chromatics and texture;
- Structurally design the product;
- Virtually 3D simulate the product;
- Flexibly change the product – shape, color;
- Plan and control the product processing stages

The modern finishing equipments employed in a clothing product processing complete the manufacturing line – construction, confection and finishing – with the following advantages:

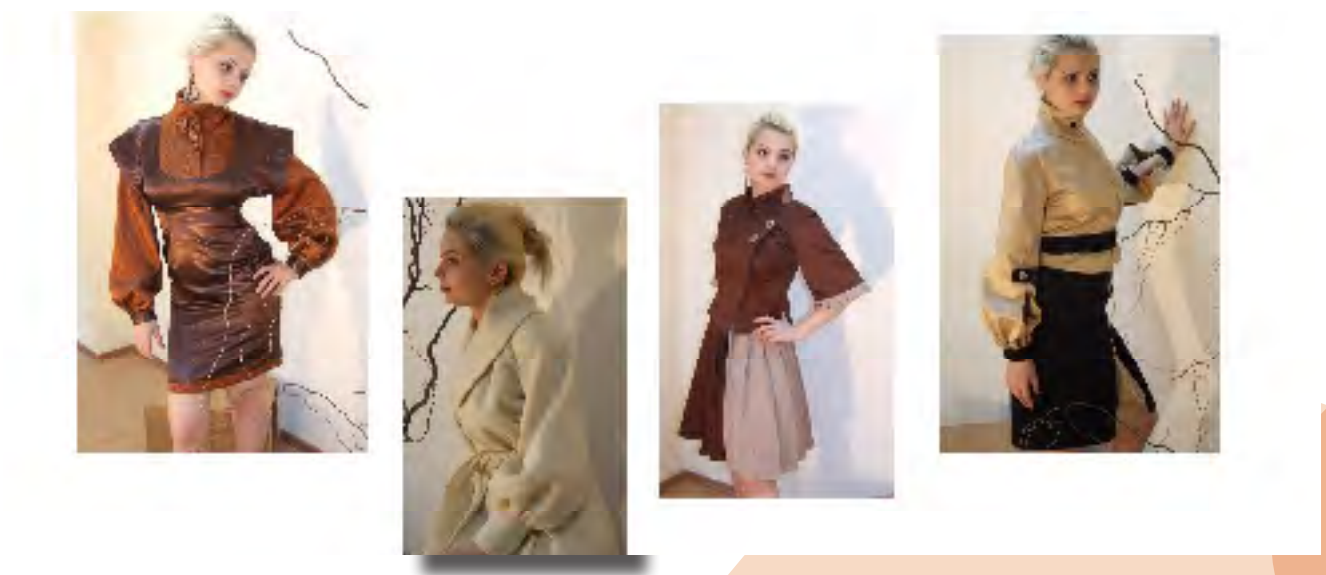
- Maximal efficiency and accuracy in products processing;
- Minimize the execution time;
- Improve the design quality efficiency;
- Optimal and efficient use of the textile fabric;
- Processing costs cut

cepte, metode şi tehnologii necesare pentru a face ca ideile să fie realizabile şi să poată fi exploatate industrial. Pentru a veni in sprijinul IMM-urilor, I.N.C.D.T.P., a realizat dotarea departamentului design cu produse software ce cuprind intregul ciclu de realizare a unui produs, de la creatie si proiectare pana la finisare. Aceste softuri permit utilizatorilor:

- conceperea virtuala a unui model;
- diversitatea cromatica si texturala a creatiei;
- proiectarea constructiva a produsului;
- simulari virtuale 3 D ale produsului;
- diversitatea produsului (forma, culoare);
- planificarea si administrarea etapelor de realizare a unui produs.

Echipamente moderne de finisare a unui produs vestimentar completeaza linia de elaborare, constructie, realizare si finisare, cu urmatoarele avantaje:

- eficienta maxima si precizie in realizarea produselor;
- minimizarea timpului de executie;
- cresterea calitatii designului si eficientei;
- folosirea optima si eficienta a materialului textil;
- reducerea costurilor de prelucrare.



"Retro Poetry" Collection

5.1.8 Garment design

• **Project**: "Stylistic trends in women fashion"

• **Objectives**: Project main objective is to elaborate fashion trends' catalogues for 2008/2009 autumn-winter season and for the 2009 spring-summer season and to exemplify the trends by conceiving clothing collections.

• **Results**: Two catalogues of fashion trends, each including over 150 concrete graphic solutions, information related to the textile fabrics, chromatics & style trends, as well as garment influences

There were conceived at the same time two clothing collections specified above – "Glam Reflection" and "Retro Poetry" – on show in the events of the branch.

• **Beneficiaries**:

- Textile industry in Romania: clothing producers, fashion houses, traders.

• **Proiect**: "Tendinte stilistice in moda feminina"

• **Obiectives**: Obiectivul principal al proiectului constitue elaborarea de cataloage de tendinte in moda pentru sezonul toamna-iarna 2008/2009 si primavara-vara 2009, si exemplificarea tendintelor prin realizarea de colectii vestimentare.

• **Rezultate**:

- doua cataloage de tendinte vestimentare cu peste 150 de solutii grafice concrete, informatii referitoare la materiale textile, tendinte cromatice si stilistice, influente vestimentare. Au fost realizate doua colectii vestimentare: "Glam Reflecton" si "Retro Poetry", prezentate in cadrul unor evenimente de profil.

• **Beneficiari**:

- industria textila din Romania -firmele producatoare de confectii, case de moda, comercianti.

STRATEGIC OBJECTIVES 2009

The general objectives of the Design Department activity for 2009 are mainly focused on:

- Fast aesthetic adaptation to market mobility and to customer requests, considering style trends researches for the clothing field, related to: cut line, shapes, fabrics, chromatics, worldwide-accepted trends depending on seasonal features, either autumn-winter, or spring-summer.

Styl trends

- Carrying on specialized studies for the clothing movabilities translated into cut, color, or fabric preferences. The generally assumed data will be subjected to research, studies will be performed for data to be synthesized and aligned to the domestic market, by means of trend catalogues for each season autumn-winter and spring-summer.

Styl trends

- Shaping up innovative products, with a high creativity degree, which should satisfy the complexity of consumer demands, having in view comfort indices, aesthetic and functional aspects, environmental impact, economical indicators, and cloth-

OBIECTIVE STRATEGICE 2009

Obiectivele generale ale activitatii departamentului de design, pentru anul 2009, sunt:

- adaptarea rapida din punct de vedere estetic la mobilitatea pietei si cerintele consumatorului, luand in considerare cercetarile tendintelor stilistice in domeniul vestimentar cu privire la linie, forme vestimentare, materiale textile, paleta cromatica, tendinte general acceptate la nivel mondial - in functie de fiecare sezon stilistic: toamna-iarna, primavara-vara;

- realizarea de studii specializate de tendinte vestimentare, cu privire la linie, culoare, materiale. Informatiile cu caracter general sunt cercetate, studiate, sintetizate, racordate la cerintele pietei autohtone fiind prezentate sub forma de cataloage de tendinte pentru fiecare sezon, respectiv toamna-iarna si primavara-vara;

- crearea de produse inovative, cu un inalt grad de creativitate, care sa satisfaca complexitatea cererilor consumatorului, tinand cont de indicii

5.1.8 Garment design

ing trends for each season.

- Sketching clothing collections in accordance with global fashion trends able to lead the way to a traded mark;
- Disseminating all the information resulted following the Design Department activity by means of scientific events, fairs and exhibitions related to its profile.
- Services supply to clothing companies for the creation of their own collections, products individualized with the help of software design technologies, for product shaping and 3D visualization, matching, automate cutting and finishing.
- Development and manufacture of customized products, characterized by aesthetics coordinated combinations executed in shorter time, according to 3D anthropometric sizes Romanian population presents today.

de confort, aspectele estetice si functionale, impactul asupra mediului, factorii economici, tendintele vestimentare ale fiecarui sezon;

- crearea unor colectii vestimentare in acord cu tendintele vestimentare mondiale, ce duc in timp la formarea unui brand propriu;
- diseminarea tuturor informatiilor rezultate ca urmare a activitatii departamentului prin participarea la diferite manifestari stiintifice, targuri si expozitii de profil;
- furnizarea de servicii firmelor de confectii pentru realizarea colectiilor proprii, produse personalizate utilizand tehnologie software de creatie, proiectare, vizualizare 3D a produsului; incadrare, croire automata si finisare;
- Dezvoltarea si realizarea de produse personalizate, caracterizate de valente estetice si cu un termen de executie redus, in acord cu dimensiunile antropometrice 3D ale populatiei actuale a Romaniei.

5.1.9 Studies and strategies

GLOBAL TRENDS AND ACCOMPLISHMENTS

Within context generated by the integration in the EU economic community and by the growing role of the science and technology factor for the accelerated economic development, the global textile and leather industry is progressing into a harsh global competitivity frame.
The increase of product competitivity can be influenced by the development of the research-development activity, by the development of the domains of high technology production and distribution, design, meeting the regulations and directives, environment protection, the ecologic requirements imposed on the textile products on European market and other factors.
The European Union has launched, for the 2007-2013 period, a set of motions regarding research and innovation, institutions global competitiveness, development of contractor skills and know-how transfer to products and services. These initiatives are to be found in papers like studies, strategies, technological platforms, research and education programmes.
The scientific studies are a key component in development of the domain, they have as a general objective the sector to which they address, from which detailed specific objectives of the scientific research are derived. The accumulated scientific knowledge is used to do scientific assessments of the present period and forecast of the future trends.
The strategies aim the future of the domain and its evolution on long periods of time and also choosing the necessary ways to reach the objectives, taking into account the domain opportunities, restrictions and threats.
The EU trends and policies regarding the textile and leather sector development and of the research-development-innovation are found into the objectives of the research and education programmes and in various strategies:
• Framework Program VII, for Technological Research and Development;
• Competitivity and Innovation Framework Program;
• Entrepreneurial and Innovation Program (EIP);
• Education and Training Program 2010;
• Social and Economic Cohesion Programmes;
• European Industrial Policy;
• Strategic research diary of the European Technological Platform for Textiles and Garments, etc.
The course on European plan for improvement of the coordination degree of policies, stimulation of involvement of private companies in research projects, better absorption of resources through improvement of the process of needs

TENDINTE SI REALIZARI PE PLAN MONDIAL

In contextul generat de integrarea in spatiul economic al Uniunii Europene si al rolului tot mai important al factorului stiinta si tehnologie in dezvoltarea economica accelerata, industria mondiala a textilelor si pielariei se desfasoara intr-un cadru al competitivitatii globale acerbe.
Cresterea competitivitatii produselor poate fi influentata de dezvoltarea activității de cercetare- dezvoltare, de dezoltarea domeniilor de înaltă tehnologie de producție și distribuție, design, respectarea directivelor și reglementărilor, protecția mediului, cerințele ecologice impuse produselor textile pe piața europeană și altele.
Uniunea Europeană a lansat, pentru perioada 2007-2013 un set de initiative care privesc cercetarea si inovarea, competitivitatea globală a institutiilor, dezvoltarea aptitudinilor antreprenoriale si transferul cunoasterii în produse si servicii. Aceste initiative se regasesc in documente precum studii, strategii, platforme tehnologice, programe de cercetare si programe de educatie.
Studiile stiintifice, reprezinta o componenta esentiala in dezvoltarea domeniului, ele au ca obiectiv general sectorul caruia i se adreseaza, din care deriva obiective specifice detaliate ale cercetarii stiintifice. Cunostintele stiintifice acumulate sunt folosite la realizarea de evaluari stiintifice ale stadiului actual si de previzionari ale tendintelor viitoare.
Strategiile vizeaza viitorul domeniului si evolutia acestuia pe perioade indelungate de timp si alegerea cailor de urmat pentru atingerea obiectivelor, tinand cont de oportunitatile, restrictiile si amenintarile din acest domeniu.
Tendintele si politicile UE privind dezvoltarea sectorului de textile si pielarie si a activitatii de CDI se regasesc in obiectivele programelor de cercetare si educatie si in diferite strategii:
• Programul Cadru VII, pentru Cercetare si Dezvoltare Tehnologică;
• Programul Cadru de Competitivitate si Inovare (CIP);
• Programul de Antreprenoriat si Inovare (EIP);
• Programul Educatie si Pregătire 2010;
• Programele de coeziune economică si socială;
• Politica industriala Europeana;
• Agenda de Cercetare Strategica a Platformei Tehnologice Europene pentru Textile si Confectii etc.
Tendinta pe plan european pentru imbunătățirea gradului de coordonare a politicilor, stimularea implicarii companiilor private în proiectele de cercetare , absorbtia mai buna a resurselor prin îmbunătățirea procesului de identificare a nevoilor, prioritizarea acestora la nivel regional, sectorial din

5.1.9 Studies and strategies

identification, making them a priority on regional, sectorial level of the domain, identification of solutions, information dissemination and the technological transfer are done international partnership, constituting scientific and innovation clusters, Excellency centers, electronic networks, Excellency poles and technological transfer entities.
In elaboration of the studies and strategies for textile and leather industry, INCDTP considered the sector global and European evolutions.
In his quality of national institute, INCDTP, by the organization and working regulations approved by the Romanian Government in the Government Resolution no. 1463/2004, has the necessary competence to issue studies and strategies in the textile and leather industry domain.
The institute activity, in 2008, in the field of elaboration of studies, strategies and making networks and partnerships, has developed into the sectorial, core, partnerships and CEEX programmes through the following research projects:

1. Project: Scientific study regarding the textile nanotechnologies - 2006-2008
● **Objectives**:
- Realization of a documentary study regarding new generations of nanostructural fibers;
- Realization of a study regarding nanotechnology usage possibilities in textile field;
- Assessing the economic and social impact of nanotechnology in the field of technical textile items;
- Establishing the strategic directions of activity
● **Results**:
- Study having up-to-date information regarding the new nanostructural generation of fibers, definition, classification, nanofibers processing and obtaining nanotechnologies, usage areas;
- Study regarding the strategic directions of activity in the nanotechnologies field with application in textile domain.
- Published article in "Textile industry" magazine.
- Thematic work-shop.

2. Project: Textile product lifetime evaluation - 2006-2008
● **Objectives**:
- Elaboration of a simplified assessment of the textile products lifetime;
- Optimizing the lifetime assessment methods, lifetime modeling and analysis so as to assess the environmental performances and identify the optimizing methods;

domeniu, identificarea soluțiilor, diseminarea informatiilor si transferul tehnologic realizat în parteneriatele internaționale, formarea de clustere ştiințifice şi de inovare, centre de excelenta, rețele electronice, poli de excelenta si entitati de transfer tehnologic.
In elaborarea studuiilor si strategiilor pentru industria textilelor si pielariei, I.N.C.D.T.P. a luat în considerare evoluțiile europene si mondiale ale sectorului.
I.N.C.D.T.P., in calitate de institut national, prin regulamentul de organizare si functionare aprobat de Guvernul Romaniei prin HG 1463/2004, are competenta necesara elaborarii studiilor si strategiilor in domeniul industriei de textile si pielarie.
Activitatea institutului, in anul 2008, in domeniul elaborarii studiilor, strategiilor si crearii de retele si parteneriate, s-a desfasurat in cadrul programelor Sectoriale, Nucleu, Parteneriate si CEEX, prin urmatoarele proiecte de cercetare:

1. Proiect: Studiu stiintific privind nanotehnologiile in textile - 2006-2008
● **Obiective**:
- realizarea unui studiu documentar privind noile generatii de fibre nanostructurate;
- realizarea unui studiu privind posibilitatile de utilizare a nanotehnologiilor in domeniul textil;
- evaluarea impactului economic si social al nanotehnologiilor in domeniul articolelor textile tehnice;
- stabilirea directiilor strategice de activitate.
● **Rezultate**:
- studiu cuprinzand informatii la zi referitoare la noile generatii de fibre nanostructurate, definire, clasificare, prelucrarea nanofibrelor si nanotehnologii de obtinere, arii de utilizare;
- studiu privind directiile strategice de activitate in domeniul nanotehnologiilor cu aplicatii in domeniul textil;
- articol publicat in "Industria Textila";
- Workshop tematic.

2. Proiect: Evaluarea ciclului de viata a produselor textile - 2006-2008
● **Obiective**:
- elaborarea unei evaluări simplificate a ciclului de viață la produsele textile;
- optimizare metodelor de evaluare a ciclului de viata, modelarea si analiza ciclului de viata, in vederea evaluarii performantelor de mediu si identificarii modalitatilor de optimizare.

● **Results**:
- Technical-scientific study regarding the elements that need to be observed in order to elaborate a lifetime assessment method;
- LCA assessment methods;
- Analysis and description of the harmful compounds to the human body;
- Study of the various software methods, that can be used to assess the lifetime of textile products and selection of the software version that would offer the possibility to obtain after data processing as much information possible regarding the footprint of the technological process on the environment, people health and on the regenerable or non-regenerable resources;
- Mathematical model for optimization of lifetime assessment;
- Lifetime assessment methodology for textile products
● **Novelty elements**: application of the methodology to knitted and blue jeans fabrics
● **Main characteristics**:
- The possibility of selection of the most important parameters taken into account at LCA evaluation, for each process
- Parameters quantization for determining the influence on environment and man along and at the end of the textile lifetime
- Using fields: textile and garment industry
- Benefits:
- Cutting off the consumption of utilities, raw materials and fabric by selection of the optimum production solution
- Waste diminishing or recycling

3. Project: Investigation and identification of the particularities of the accounting system specific to the R&D activities - 2007-2010
● **Objectives**:
- Solution providing for reading and understanding the financial provisions necessary to the participants at the financed projects from the FP7
- European system of accounting records specific to the research system correlating with Romanian accounting system
● **Results**:
- Product: accounting software programs regarding European system of accounting records specific to the research system correlating with Romanian accounting system: bcAccounting, bcInventoryControl, bcImmobilization, bcTextileProduction, bcWages

● **Rezultate**
- studiu tehnico -științific privind elementele care trebuiesc luate în calcul la elaborarea unei metode de evaluare a ciclului de viață;
- metode de evaluare a LCA;
- descrierea si analiza compusilor care au caracter nociv asupra organismului uman;
- studiu diferitelor metode soft, care pot fi utilizate in evaluarea ciclului de viata la produsele textile si selectarea variantei de soft care sa ofere posbilitatea de a obtine in urma prelucrarii datelor, cat mai multe informatii privind influenta procesului tehnologic asupra mediului inconjurator, al sanatatii oamenilor si consumului de resurse regenerabile sau neregenerabile;
- model matematic pentru optimizarea evaluarii ciclului de viata;
- metodologie de evaluare a ciclului de viata a produselor textile.
● **Elemente de noutate**: aplicarea metodologiei la tricoturi si blue jeans
● **Caracteristici principale**:
- posibilitatea selectarii celor mai importanti parametri, luati in calcul in evaluarea LCA, pentru fiecare proces in parte;
- cuantificarea parametrilor pentru a preciza influenta asupra mediului si a omului de-a lungul ciclului de viata si la finalul acestuia;
- domenii de utilizare: industria textila si de confectii
- beneficii:
- reducerea consumurilor de utilitati, de materii prime si material prin selectarea celei mai optime solutii de productie;
- reducerea deseurilor sau reutilizarea lor.

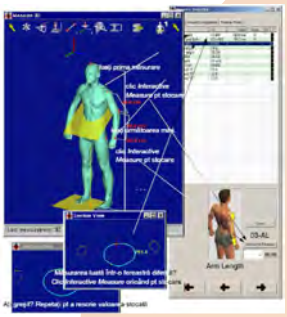
3. Proiect: Investigarea si identificarea particularitatilor sistemului contabil specific activitatilor de cercetare-dezvoltare - 2007-2010
● **Obiective**:
- furnizarea de solutii pentru interpretarea si intelegerea prevederilor financiare necesare participantilor la proiectele finantate din cadrul Programului Cadru 7;
- corelarea sistemului european de inregistrari contabile specifice sistemului de cercetare cu sistemul contabil romanesc.
● **Rezultate**:
- Programe informatice de evidenta contabila privind corelarea sistemului european de inregistrari contabile specifice sistemului de cercetare cu sistemul contabil romanesc : bcContabilitate; bcGestiune; bcImobilizari; bcProductie Textila; bcSalarii;

● **Novelty elements**: Flexible programs, easy to be updated by user, that meet the Finance Ministry regulations and also the international accounting standards
● **Using fields**:
- Commercial companies
- Budgetary organizations
- Juridical persons without lucrative purpose
● **Benefits**:
- Merging of the financial provision application of the participants to the FP7

4. Project: Development of the internal garment market by using the 3D scanning method to identify the anthropometrical characteristics of the Romanian population - 2007-2009
● **Objectives**:
- Identification of the design needs, internal and international norms regarding the textile garment design
- Building up the national 3D anthropometric database;
- Elaborating the standards of company, anthropometric standards and for garment size system
● **Results**:
- IT product: 3D anthropometric database for Romanian male and female population aged between 20-65
● **Novelty elements**:
- 3D Body scanning system used for taking over the anthropometric dimensions (Figure 1)
● Characteristics of the 3D scanning system:
- scan technology: visible specter laser
- scan time: 12 seconds
- processing time: 60 seconds
- size of data file: 3 MB
- resolution: 300 000 dots
- measurement precision: 1mm for circumferences and widths; 2mm for lengths; 100g for weight
3D anthropometric primary database
● **Main characteristics**:
- the 3D anthropometric database provides Romania the possibility to actively participate in elaboration of the European standard regarding the choice of the unique coding system of garment sizes
● **Using fields**:
- garment industry
- apparel items commerce

● **Elemente de noutate**: Programe flexibile, usor up-datate de utilizator, care raspund atat reglementarilor Ministerului Finantelor, cat si standardelor internationale de contabilitate.
● **Domenii de utilizare**:
- societati comerciale;
- organizatii bugetare;
- persoane juridice fara scop lucrativ.
● **Beneficii**:
- unificarea aplicarii prevederilor financiare a participantilor la Programul cadru 7

4. Proiect: Dezvoltarea pietei interne de confectii prin utilizarea metodei de scanare 3D in identificarea caracteristicilor antropometrice specifice populatiei din Romania - 2007-2009
● **Obiective**:
- identificarea cerintelor de proiectare, a normativelor interne si internationale referitoare la designul confectiilor textile;
- constituirea bazei de date 3D antropometrice nationale;
- elaborarea standardelor de firma, antropometrice si a sistemelor de marimi pentru confectii.
● **Rezultate**:
- Produs informatic: Baza de date 3D antropometrice pentru populatia Romaniei de sex feminin si masculin cu varsta cuprinsa intre 20-65 ani
● **Elemente de noutate**:
- Utilizarea Sistemului de scanare 3D a corpului pentru preluarea dimensiunilor antropometrice;
● Caracteristici sistem de scanare 3D:
- tehnologia de scanare: laser in spectrul vizibil
- timp de scanare: 12 secunde
- timp de procesare: 60 secunde
- marime fisier date: 3 MB
- rezolutie: 300 000 puncte
- precizia de masurare: 1 mm pentru circumferinte si latimi; 2 mm pentru lungimi; 100 g - pentru greutate.
- Baza de date primare 3D antropometrice;
● **Caracteristici principale**: Baza de date 3D antropometrice ofera Romaniei posibilitatea de a participa activ la elaborarea standardului european privind desemnarea sistemului unic de codificare a marimilor pentru confectii.
● **Domenii de utilizare**:
- industria confectiilor de imbracaminte;
- comertul cu articole de imbracaminte;



Example of anthropometric dimension take over from the virtual scanned body

● **Benefits**:
- Improvement of competitivity and performances of the national garment industry;
- Major raising of internal market production as a result of raising the demand for apparel articles that accord with the anthropometric characteristics specific to the population from Romania;
- Diminishing the stocks and unsaleable products through production designing in function of statistical rate of sizes resulted from the project

5. Project: Alignment of the textile and garment industry to the framework regulated by the EU - 2007-2008
● **Objectives**:
- Harmonization of the standards/norms and techno-economic indexes/informatics systems with the EU legislation and rules;
- Increasing the competitivity of the textile-garment sector;
- Determination of the legislative framework for textile-garment sector;
- Evaluation of the alignment level to the regulated framework needs for economic agents from the textile-garment sector.
● **Results**:
- Legislative regulations for the textile-garment sector
- Methodology of assessing the alignment level to the regulated framework needs for economic agents from the textile-garment sector and elaboration of a measure plan with recommendations for increasing the efficiency of the activity of knowing and implementation of the legislation;
● **Product: Guidebook with the legislation specific to the textile field**
● **Novelty elements**: The first guide ever that presents complete information regarding the following aspects:
- Textile product specific regulations
- Textile product ecolabelling regulations
- General product regulations, applicable also to the textile products
- Environmental regulations specific to the textile sector
- Work security regulations
- Romanian regulations that transpose the European regulations regarding the design, realization and putting onto the market of individual protection equipment;
- Commercial, customs, fiscal regulations for textiles
● **Using fields**:
- textile-garment domain - manufacturers, users of fibers, yarns, fabrics, nonwovens;
- knittings, technical textiles, geotextiles, medical textiles,

● **Beneficii**:
- Cresterea competitivitatii si performantelor industriei nationale de confectii;
- Cresterea semnificativa a productiei pentru piata interna, ca urmare a cresterii cererii de articole de vestimentatie care corespund caracteristicilor antropometrice specifice populatiei din Romania;
- Diminuarea stocurilor si a produselor nevandabile prin proiectarea productiei in functie de procentele statistice de marimi rezultate din proiect.

5. Proiect: Alinierea industriei de textile si de confectii la cerintele cadrului reglementat al Uniunii Europene - 2007-2008
● **Obiective**:
- Armonizarea standardelor/normelor şi indicatorilor tehnico-economici/a sistemelor informatice cu legislaţia şi reglementările UE;
- Creşterea competitivităţii sectorului de textile-confecţii;
- Determinarea cadrului legislativ pentru sectorul textile-confecţii;
- Evaluarea nivelului de aliniere la cerinţele cadrului reglementat pentru agenţii economici din sectorul textile-confecţii.
● **Rezultate**:
- Reglementari legislative pentru sectorul textile-confecţii;
- Metodologie de evaluare a nivelului de aliniere la cerinţele cadrului reglementat pentru agenţii economici din sectorul textile-confecţii şi elaborarea unui plan de măsuri cu recomandări pentru eficientizarea activităţii de cunoaştere şi implementare a legislaţiei;
● **Produs: Ghid cu legislaţia specifică domeniului textil**
● **Elemente de noutate**: Primul ghid care prezinta informatii complete referitoare la:
- reglementări specifice produselor textile;
- reglementări privind ecoetichetarea produselor textile;
- reglementări generale pentru produse, aplicabile şi produselor textile;
- reglementări privind protecţia mediului specifice sectorului textil
- reglementări privind securitatea muncii;
- reglementări române care transpun reglementările europene privind proiectarea, realizarea şi punerea pe piaţă a echipamentelor individuale de protecţie;
- reglementările de natură comercială, vamală, fiscală pentru textile.
● **Domenii de utilizare**:
- textile-confecţii - producători, utilizatori de fibre, fire, ţesături, nețesute;

protection equipment; producers of cars, construction materials, furniture, airplanes)
- education (higher education institutions)
- product certifying Bodies;
- market monitoring Bodies;
- professional and employers' associations

6. Project: The textile-garment industry from Romanian European and global context. Strategic elements regarding raising the sector competitivity in conditions of competition on the national and global market - 2008 – 2010
● **Objectives**:
- Identification of the strategic elements regarding the increase of sector competitivity under conditions of competition on national and global market;
- Strengthening and developing the productive structures into the parameters of maximum technical and ecologic efficiency;
- Raising the company competition capacity on internal and external market;
- Raising the export of functionalized and/or personalized products, flexible/ecological technologies and services afferent to the sectors
● **Results**:
- Analysis study of the textile-garment industry on national and international scale
- Methodology of analysis and evaluation of the factors that have influence over strategic elements regarding the increase of competitivity
● **Novelty elements**: The novelty and the complexity are defined by correlation of the factors with influence on strategic elements regarding competitivity increase of the sector, having the needs and usage scenarios at company level, with inter-operability with product development systems, with product functionalization into a unique model, with optimization and flexibilization of the production processes respecting the environment and human health
● **Using fields**: textile-garment industry
● **Benefits**: sector competitivity increase

7. Project: Database integrated system concerning the activity of the leather and footwear industry with index highlighting according to framework – CAEN – revision 2/2008 – for substantiation of the evolution directions and the ways of increasing the sector competitivity with the aim of a long lasting development - 2008-2010

- tricotaje, produse textile tehnice, geotextile, produse medicale textile, echipamente de protecție;
- producătorii de autoturisme, de materiale de construcții, mobilă, aeronave;
- educatie (instituții de învățamânt superior);
- organisme de certificare a produselor;
- organisme de supraveghere a pieței;
- asociații patronale, asociații profesionale.

6. Proiect: Industria de textile-confectii din Romania in context european si mondial. Elemente startegice privind cresterea competitivitatii sectorului, in conditiile concurentei pe piata nationala si globala - 2008-2010
● **Obiective**:
- Identificarea elementelor strategice privind cresterea competitivitatii sectorului in conditiile concurentei pe piata nationala si globala;
- Consolidarea si dezvoltarea structurilor productive in parametrii de eficienta tehnica si ecologica maxima;
- Cresterea capacitatii concurentiale a societatilor pe piata interna si pe piata externa;
- Cresterea exportului de produse functionalizate si /sau personalizate, tehnologii flexibile/ecologice si servicii aferente sectoarelor.
● **Rezultate**:
- Studiu de analiza la nivel national si international a industriei de textile-confectii;
- Metodologie de analiza si evaluare a factorilor care influenteaza elemente strategice privind cresterea competitivitatii.
● **Elemente de noutate**: Noutatea si complexitatea sunt definite de corelarea factorilor care influenteaza elementele strategice privind cresterea competitivitatii sectorului cu necesitatile si scenariile de utilizare la nivelul societatii, cu interoperabilitatea cu sisteme de dezvoltare de produs, cu functionalizarea produselor intr-un singur model, cu optimizarea si flexibilizarea proceselor de productie respectand protectia mediului si sanatatea omului.
● **Domenii de utilizare**: industria de textile-confectii
● **Beneficii**: cresterea competitivitatii sectorului

7. Proiect: Sistem integrat de baze de date privind activitatea industriei de pielarie si incaltaminte cu evidentierea indicatorilor conform incadrarii – CAEN – rev. 2 / 2008 – pentru fundamentarea directiilor de evolutie si a cailor de crestere a competitivitatii sectorului in scopul dezvoltarii durabile - 2008-2010

5.1.9 Studies and strategies

● **Objectives**:
- Increasing the competitivity and the productivity of the companies from leather and footwear industry by strengthening and developing the productive sector in the context of world economy globalization
- census of the Romanian enterprises from this field and database creation, with the afferent administration book;
- Elaboration of the White Book of the leather and footwear industry from Romania
● **Results**:
- Study analysis diagnosis of the footing of leather-footwear enterprises in the context of world economy globalization

● **Obiective**:
- cresterea competitivitatii si productivitatii intreprinderilor din industria de pielarie-incaltaminte prin consolidarea si dezvoltarea sectorului productiv in contextul globalizarii economiei mondiale;
-recensamantul intreprinderilor de profil din Romania si crearea unei baze de date, cu manualul de administrare aferent;
- elaborarea Cartii Albe a industriei de pielarie-incaltaminte din Romania.
● **Rezultate**:
- Studiu analiza diagnostic a situatiei intreprinderilor de pielarie-incaltaminte in contextul globalizarii economiei mondiale

8. Project: Management of the skin solid waste from the leather and footwear industry – SMEs capitalization solutions - 2007 – 2009
● **Objectives**:
- Recuperation and capitalization of waste from the leather and footwear industry
● **Results**:
- Capitalization methods and technologies for leather waste;
- Recuperation and capitalization technology of the waste from the leather and footwear industry;
- Realization and usage books for the capitalization technology of leather waste – Capitalization solutions for SMEs;
- Products: fertilizers and composites made from leather waste.
- Characteristics of the bio-composite:

8. Proiect: Managementul deseurilor solide de piei din industria de pielarie si incaltaminte. Solutii de valorificare pentru IMM-uri - 2007-2009
● **Obiective**:
- recuperare si valorificare a deseurilor din industria de pielarie-incaltaminte
● **Rezultate**:
- Metode si tehnologii de valorificare a deseurilor de piei;
- Tehnologie de recuperare si valorificare a deseurilor din industria de pielarie – incaltaminte;
- Manuale de realizare si utilizare a tehnologiilor de valorificare a deseurilor de piei - solutii de valorificare pentru IMM-uri;
- Produse: Fertilizatori si materiale compozite din deseuri de piele;
- Caracteristici biocompozit:

		As per standard/ Conform standardelor	Obtained/ Obtinute
Dimensional variation % Variatia dimensionala,%	Area/ Suprafata	max. 15	13,5
	Thickness/ Grosimea	max. 5	3,0
Linear extension/ Alungirea	Sarcina/ Charge 10 N/mm2	min. 12	15
	Breaking/ Ruperea	min.15	20
Tensile strength (N/mm2)/ Rezistenta la tractiune, N/mm2	Breaking/ Ruperea	min. 9	11,1
Distilled water absorption, Kubelka after 2h, % Absorbtia de apa distilata, Kubelka, dupa 2h, %		30….75	57,1-60,3

● **Using fields**:
- SMEs from the leather industry, taweries
- Agricultural units
● **Benefits:**
- Diminution of environment pollution by leather waste capi-

● **Domenii de utilizare**:
- IMM-uri din industria de pielarie, tabacarii;
- unitati din agricultura.
● **Beneficii:**
- reducerea poluarii mediului prin valorificarea deseurilor de

talization;
- Obtaining composites for: footwear (man made sole, insole), morocco leather goods (handbags, book covers, etc) and furniture industry;
- Giving back to agriculture of some destitute and tainted lands and production increases of 20-30% under economic circumstances of production

piei;
- obtinerea unor materiale compozite pentru incaltaminte (talpa artificiala, brant),marochinarie (genti, coperti de carti etc.) si industria mobilei;
- redarea in agricultura a unor soluri sarace si degradate si sporuri de productie de 20 – 30% in conditii economice de productie;

Leather waste paste in beating engine (discontinuous process)

9. Project: Promoting the participation of scientific research into technical textile domain with applications in aeronautics-space and medicine - AEROMED - 2006- 2008
● **Objectives**:
- Revaluation of existing competencies and research potential from institutions taking part at this project through participation at training sessions of the FP7 project proposals, through short work visits at foreign partners, exchange of personnel, results and experience within the technical textiles domain with use in aeronautics, space and medicine;
- Organization of a international conference with high profile participants from the scientific community internationally renowned in the project field;
- Organization / participation in support activities with the purpose of integration within the European technological platforms from the project domain
● **Results**:
- The first international conference on technical textiles, "Technical Textiles – Multidisciplinary Domain";
- Scientific papers presented at "Tex Teh I 2008" Conference: 24 works published on CD with ISBN 978-973-1716-33-6.

10. Project: Promovarea participarii cercetarii stiintifice in domeniul textilelor tehnice cu aplicatii in aeronautica-spatiu si medicina - AEROMED - 2006-2008
● **Obiective**:
- Punerea în valoare a competenţelor şi potenţialului de cercetare existent, in institutiile participante la proiect prin participarea la sesiuni de pregătire a propunerilor de proiecte pentru FP 7, vizite scurte de lucru la partenerii straini, schimb de personal, de rezultate şi de experienţă în domeniul textilelor tehnice cu utilizari in aeronautica, spatiu si medicina;
- Organizarea unei conferinte internationale, cu participanţi de înalt prestigiu profesional din comunitatea ştiinţifică recunoscută pe plan internaţional in domeniul proiectului;
- Organizare/ participare la activităţi suport în vederea integrării în Platformele tehnologice Europeane din domeniul proiectului.
● **Rezultate**:
- Prima Conferinta internationala in domeniul articolelor tehnice "Technical Textiles-Multidisciplinary Domain";
- Lucrari stiintifice prezentate la Conferinta "Tex Teh I 2008"
- 24 lucrari publicate pe CD cu ISBN978-973-1716-33-6.

10. Project: Collaborative systems and mechanisms specific to the economic clusters and company networks within the economy based on know-how - CLUSTINOVA - 2008-2011
● **Objectives**:
- Approaching the structural changes imposed by global economy development based on know-how through elaboration, simulation and experimentation of collaborative systems and mechanisms specific to creation and functioning of economic clusters and company networks for sustainable development of the priority research domains: 1 (informa-

11. Proiect: Sisteme si mecanisme colaborative specifice clusterelor economice si retelelor de firme in economia bazata pe cunoastere - CLUSTINOVA - 2008-2011
● **Obiective**:
- Abordarea schimbarilor structurale impuse de dezvoltarea economiei globale bazate pe cunoaştere prin elaborarea, simularea si experimentarea de sisteme si mecanisme colaborative specifice crearii si functionarii clusterelor economice si retelelor de firme in vederea dezvoltarii sustenabile a domeniilor prioritare de cercetare: 1 (tehnologia informatiei

tion and communication technology), 5 (agriculture, food safety and security) and 7 (innovative materials, processes and products) by a partnership made up of 5 entities of innovation and technologic transfer, one university and one innovative SME

- Analysis, proving and technologic transfer will be done at the level of the next development regional areas from Romania: 3 (south of Muntenia), 4 (South-west of Oltenia) and 8 (Bucharest Ilfov)

● **Results**:

- A study regarding textile domain priorities, identification and analysis of socio-economic problems of euro-regional areas 3, 4 and 8 in correlation with their specific
- Study of analysis and diagnose for the textile domain of the sustainable development for priority domains according to Government Res. 217/2007 at the level of euro-regional areas 3, 4 and 8 from Romania, by comparison with EU practices

si comunicatii-TIC), 5 (agricultura, siguranta si securitatea alimentara) si 7 (materiale, procese si produse inovative) de catre un parteneriat format din 5 entitati de inovare si transfer tehnologic, o universitate si un IMM inovativ;

- Analiza, demonstrarea si transferul tehnologic se vor realiza la nivelul urmatoarelor regiuni de dezvoltare din Romania: 3 (Sud - Muntenia), 4 (S-V - Oltenia) si 8 (Bucuresti - Ilfov).

● **Rezultate**:

- studiu privind prioritatile domeniului textil, identificarea si analiza problemelor socio-economice ale euroregiunilor 3, 4 si 8, in corelare cu specificul acestora;
- studiu de analiza si diagnoza pentru domeniul textil a dezvoltarii sustenabile pentru domeniile prioritare conform HG 217/2007 la nivelul euroregiunilor 3, 4 si 8 din Romania, comparativ cu practicile UE.

Fig.- Regiuni de dezvoltare

11. Project: Excellence poles for sustaining the structural Funds - 2006-2008

● **Results**:

- Creation of a Excellence pole < IND-STRA-MED-Tex> for technical textiles with application in industry, strategic domains and medicine, with the purpose of raising the capacity of sustaining, development and implementation of the research activity, increasing the national economy competitivity and accessing the structural funds;
- Elaboration of projects for accessing the structural Funds, for taking part in international and national competitions;
- Disseminating the results in the medium of economic agents from the technical textile domain through workshop: "Program Platform, Excellence pole <IND-STRA-MED-Tex> in technical textile domain with applications in industry, strategic domains and medicine", October 24, 2008

12. Proiect: Poli de excelenta pentru sustinerea Fondurilor structurale - 2006-2008

● **Rezultate**:

- Constituirea unui Pol de excelenta < IND-STRA-MED-Tex> pentru textile tehnice cu aplicatii in industrie, domenii strategice si medicina, in scopul creşterii capacitatii de sustinere, dezvoltare si implementare a activitatii de cercetare, cresterii competitivităţii economiei nationale si accesarii fondurilor structurale;
- Elaborarea de proiecte pentru accesarea Fondurilor structurale, pentru participarea la competitiile nationale si internationale;
- Diseminarea rezultatelor in mediul agentilor economici din domeniul textilelor tehnice prin workshop „Platforma Program, Pol de excelenta <IND-STRA-MED-Tex> in domeniul textilelor tehnice cu aplicatii in industrie, domenii strategice si medicina", 24 octombrie 2008

5.1.9 Studies and strategies

12. Project: Instruments of dissemination and technological transfer of the research activity results - 2006 – 2008

● **Objectives**:

- Enhancing the Institute's image on internal and international plan with the purpose of increasing the capacity of research-development-innovation and creation of partnerships
- Realization of online catalogues with a complete and complex content for presenting the Institute's activities and the results obtained in the research projects

● **Results**:

- Informatics product: Institute's general presentation site, of the services offered by technological departments, laboratories for product testing and micro-production pilot stations, presentation of the personnel/departments and obtained results, of the product testing offer;
- Informatics product: 15 online catalogues for showing the products that can be made in Institute as a result of projects of research, of new products or technologies;

● **Main characteristics**:

- Written in two versions, English and Romanian language;
- Content, graphics and presentation at a global level;
- Flexibility of information presentation;
- Easy browsing between various categories and an enhanced redundancy regarding finding the wanted information (this last one accomplished by offering the search possibility and by creation of cross-links between various information categories).

12. Proiect: Instrumente de diseminare si transfer tehnologic al rezultatelor activitatii de cercetare - 2006-2008

● **Obiective**:

- Cresterea imaginii institutului atat pe plan intern, cat si international, in scopul dezvoltarii capacitatii de cercetare-dezvoltare-inovare si crearii de parteneriate;
- Realizarea de cataloage on-line, cu un continut complet si complex, pentru prezentarea activitatilor institutului si rezultatelor obtinute in proiectele de cercetare.

● **Rezultate**:

- Produs informatic: site de prezentare generala a institutului, a serviciilor oferite de departamentele tehnologice, laboratoarele de testare a produselor si statiile pilot de microproductie; prezentarea activitatii colectivelor/ departamentelor si a rezultatelor obtinute; a ofertei de testare a produselor;
- Produs informatic: 15 cataloage on-line de prezentare a produselor ce pot fi realizate in institut, ca rezultat al proiectelor de cercetare, de noi produse sau tehnologii.

● **Caracteristici principale**:

- realizate in doua versiuni, limba engleza si limba romana;
- continut, grafica si mod de prezentare la nivel mondial;
- flexibilitate in modul de prezentare a informatiilor;
- navigare usoara intre diversele categorii si o redundanta sporita in ceea ce priveste regasirea informatiilor dorite (aceasta din urma fiind realizata prin oferirea posibilitatii de cautare, dar si prin crearea de linkuri incrucisate intre diversele categorii de informatii).

Strategic directions in 2009

The activity from the textile-leather-footwear industry, like from any other domain, is carried out under the influence of globalization. There can be distinguished as main strategic directions for 2009 the following:

Directii strategice 2009

Activitatea din industria de textile-pielarie-incaltaminte, ca de altfel din oricare alt domeniu, se desfasoara sub influenta legii globalizarii. Ca principale directii strategice pentru anul 2009, se pot distinge:

5.1.9 Studies and strategies

● Creation of an excellence network in the textile nanotechnology field;

● Expansion of the Excellence Pole with new members which will contribute at partners multidisciplinarity and complementarity, with the purpose of approaching the most complex range of projects;

● Elaboration of studies regarding initialization of management systems for an optimum and efficient capitalization of the resources by:

- Activity organization in industrial zones(parks)

- Operation and service chain realization based on outsourcing

- Raw material processing at the source location

● Including the research, development and innovation priorities within the research-development sector Plan of the Ministry of Economy and Finance

● Consolidation and transformation of the textile research infrastructure into a more performing network that should operate in all Europe and should emphasize the transfer of research results toward the industry

● Attracting young persons to the educational programs for textiles

● Drafting the educational programs in order to reflect the industry needs regarding changing qualifications because of the economic crisis of the textile-leather sector

● Elaboration of strategies for applying the research directions and priorities of the Textile and Garment Research Strategic Agenda:

- From consumer goods to specialty products: new specialty fibers and composite-fibers for innovative textile products, the functionality of fabrics and connected processes and biomaterials, bio-technologies and ecologic textile processing

- Applications new textiles: new textile products for en-

● Constituirea unei retele de excelenta in domeniul nanotehnologiilor textile;

● Extinderea Polului de excelenta cu noi membri, care sa contribuie la multidisciplinaritatea si complementaritatea partenerilor, in scopul abordarii unei game cat mai complexe de proiecte;

● Elaborarea de studii privind initierea sistemelor de management pentru valorificarea eficienta si optima a resurselor, prin:

- organizarea activitatii in zone (parcuri) industriale,

- realizarea lantului de operatii si servicii pe baza de outsourcing (externalizare),

- procesarea la sursa a materiilor prime;

● Includerea prioritatilor de cercetare, dezvoltare si inovare in Planul sectorial de cercetare-dezvoltare al Ministerului Economiei şi Finantelor;

● Intărirea si transformarea infrastructurii de cercetare a textilelor, într-o rețea mai performantă, care să funcționeze în toată Europa şi care să pună accent pe transferul rezultatelor cercetarii către industrie;

● Atragerea tinerilor in programele educaționale pentru textile;

● Intocmirea Programelor educaționale care să reflecte cerințele acestei industrii în ceea ce priveşte calificările în schimbare, din cauza crizei economice din sectorul de textile-pielarie;

● Elaborarea de strategii pentru aplicarea directiilor si prioritatilor de cercetare ale Agendei Strategice de cercetare pentru Textile si Confectii:

- "De la bunuri de larg consum la produse de specialitate": noi fibre si fibre - compozite speciale pentru produse textile inovative, functionalitatea materialelor textile si a proceselor conexe, biomateriale, biotehnologii si prelucrari textile ecologice;

- "Aplicatii textile noi": noi produse textile pentru performante umane imbunatatite, produse textile noi pentru apli-

5.1.9 Studies and strategies

hanced human performance, new textile products for innovative technical applications, smart textiles and clothing
- Customer adaptation: mass personalization of clothing, a new design and new technologies and concepts for product realization, integrated quality and management concepts for lifetime cycle

catii tehnice inovative, textile si imbracaminte inteligente;
- "Adaptarea la client": personalizarea de masa a imbracamintei, un design nou, precum si concepte si tehnologii noi realizare a produsului, calitate integrata si concepte de management al ciclului de viata.

5.1.10 The development of the research infrastructure

As part of the "National Research-Development and Innovation Plan II" of the "CAPACITIES" Programme, meant for the developing of the national research-development and innovation (R-DI) system capacity, in order to be the promoter of a sustainable economic development, the following research projects were running:
1. Increasing of performance in the R-DI activity by achieving the state-of-the-art endowment within the investigation laboratory
2. Vestiary design - a decisive factor in increasing the Romanian garment industry competitiveness.
3. Evaluation of the comfort in garment wearing – TexConfort.
4. Infrastructure for the research in the leather-footwear design, with the purpose of developing at European standards the research services.

1. Research project: The increasing of performance in the R-DI activity by achieving the state-of-the-art endowment within the investigation laboratory - 2007 - 2009

• Objectives

Modernizing of the physical-chemical testing laboratory.
The purpose of this project is the increasing of the research capacity, by the development of the existing infrastructure, with a view to supporting the studies and advanced experimenting from the textile domain.

• Results

Among the practical results of this research project, one can mention:
- the rehabilitation of the space meant for the physical-chemical testing laboratory.
- an ultramodern laboratory furniture,
accomplished in conformity with the international standards that regulate the laboratory furniture execution.

The modernized physical-chemical testing laboratory

2. Research project: Vestiary design - a decisive factor in increasing the Romanian garment industry competitiveness - 2007 - 2009

• Objectives

The general project objectives are materialized by:
- the developing of the research infrastructure in the domain of vestiary design;
- the improving of INCDTP research capacity and the capacity of using and offering scientific and technologic services specialized in this domain;

In cadrul "Planului national de cercetare-dezvoltare si inovare II", in programul "CAPACITATI", destinat dezvoltarii sistemului national de cercetare-dezvoltare si inovare (CDI), pentru a deveni promotorul dezvoltarii economice durabile, in I.N.C.D.T.P. s-au derulat următoarele proiecte de cercetare:
1. Cresterea performantei in activitatea de CDI, prin atingerea dotarii state-of-the-art in laboratorul de investigare;
2. Designul vestimentar - factor decisiv in cresterea competitivitatii industriei de confectii din Romania;
3. Evaluarea confortului la purtarea imbracamintei – TexConfort;
4. Infrastructura pentru cercetarea in designul pielarie-incaltaminte, in scopul dezvoltarii la standarde europene a serviciilor de cercetare.

1. Proiect: Cresterea performantei in activitatea de CDI, prin atingerea dotarii state-of-the-art in laboratorul de investigare- 2007 - 2009

• Obiective

Modernizarea laboratorului de testare fizico-chimica.
Scopul acestui proiect este cresterea capacitatii de cercetare, prin dezvoltarea infrastructurii existente, in vederea sustinerii studiilor si experimentarilor avansate din domeniul textil.

• Rezultate

Dintre rezultatele concrete ale acestui proiect de cercetare, mentionam cateva:
- reabilitarea spatiului destinat laboratorului de testare fizico-chimica;
- achizitionarea de mobilier de laborator ultramodern, realizat in conformitate cu standardele internationale, care reglementeaza executia de mobilier de laborator.

2. Proiect: "Designul vestimentar - factor decisiv in cresterea competitivitatii industriei de confectii din Romania"- 2007 - 2009

• Obiective

Obiectivele generale ale proiectului se concretizeaza in:
- dezvoltarea infrastructurii de cercetare in domeniul designului vestimentar;
- imbunatatirea capacitatii de cercetare a I.N.C.D.T.P. si a capacitatii de a utiliza si oferi servicii stiintifice si tehnologice specializate in acest domeniu;

- the increasing of the garment industry competitiveness by applying the results obtained in the research activity;
- the reducing/eliminating of lohn activity;
- the increasing and stimulating of own production and the creating of Romanian brands;
- the developing of own design and the stimulating of national creativity within the garment sector;
- the increasing of the competitiveness of the garments made in Romania by the high performance added value;

• Results

- training
- result dissemination
- facilities upgrade:
  - integrated line of mechanical processing and finishing;
  - integrated technological line and software systems;

- cresterea competitivitatii industriei de confectii prin aplicarea rezultatelor obtinute in activitatea de cercetare;
- reducerea/eliminarea activitatii in lohn;
- cresterea si stimularea productiei proprii si crearea de branduri romanesti;
- dezvoltarea designului propriu si stimularea creativitatii nationale in cadrul sectorului de confectii;
- competitivitatii confectiilor fabricate in Romania, prin cresterea valoarii adaugate

• Rezultate

- instruire;
- diseminare rezultate;
- dotari cu:
  - linie integrata de prelucrare mecanica si finisare;
  - linie tehnologica integrata si sisteme soft.

3. Research project: Comfort evaluation in garment wearing - TEXCONFORT - 2008 - 2009

The purpose of „TexConfort" project is the developing of a laboratory in the domain of evaluating the comfort in the garment wearing, the increasing of the testing laboratory competences by the endowment with last generation equipment and personnel specializing.

In 2008, the laboratory was endowed with equipment (accessories) for measuring the thermal resistance and water vapour resistance of the textile materials in a stationary regime ("skin model"), simulating the heat and mass transfer processes that occur in the proximity of the human skin. Such equipment allows the evaluation of the thermophysiologic comfort based on the measuring of certain physical parameters, for a single textile material or for more superimposed materials (textile material system).

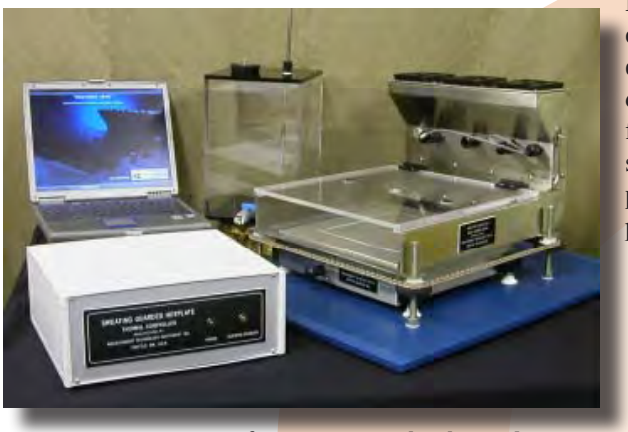
The developing of research infrastructure leads to the increasing of the industry competitiveness, as well as to the utilization of a high scientific, artistic and technologic quality labour force, in order to provide research services to this industry.

3. Proiect: Evaluarea confortului la purtarea imbracamintei – TEXCONFORT - 2008 - 2009

Scopul proiectului „TexConfort" este dezvoltarea unui laborator in domeniul evaluarii confortului la purtarea imbracamintei, cresterea competentelor laboratorului de testare prin dotarea cu echipamente de ultima generatie si specializarea personalului.

In anul 2008, laboratorul a fost dotat cu un echipament (cu accesorii) pentru masurarea rezistentei termice si a rezistentei la vaporii de apa a materialelor textile, in regim stationar (incercare cu placa incalzita in stare transpirata). Placa incalzita mentinuta in stare transpirata („model piele") simuleaza procesele de transfer de caldura si de masa care se produc in vecinatatea pielii umane. Un astfel de echipament permite evaluarea confortului termofiziologic pe baza masurarii unor parametri fizici, pentru un singur material textil, sau mai multe materiale suprapuse (sistem de materiale textile).

Dezvoltarea infrastructurii de cercetare conduce atat la cresterea competitivitatii industriei de profil, cat si la utilizarea unei forte de munca de inalta calitate stiintifica, artistica si tehnologica, pentru a oferi servicii de cercetare pentru industria de profil.



Equipment for measuring the thermal resistance and water vapour resistance of the textile materials

4. Research Project: Infrastructure for the research in the leather-footwear design, with a view to developing, at European standards, the research services for the creative industry - 2007-2009

• Objectives

The developing of the Romanian research capacities in design, with the purpose of providing the industry with those research services that are able to help it in profiling certain competitive products in the European creative industry and in its getting integrated into specialty networks.

• Results

- Acquisition of performant equipment for the shoe last design, with CAD order; the most performant equipment for digitally accomplishing the prototype shoe last was taken into account. Thus, the equipment for the purchased shoe last design is the machine for preparing and finishing a pair of shoe lasts for a numeric order model, type NEWLAST NL MOD 2RF/C. The accomplishing of the shoe last prototype is made in a computerized modality, based on a special software;
- Acquisition of performant equipment for the model engineering; there was analyzed the newest machinery that can perform the computerized cutting of natural leather and synthetic materials. Thus, the purchased equipment for detail cutting is the computerized machine for cutting leather and synthetic materials, projection of laser pattern with two cutting heads. This is made by COMELTZ ITALY, and the model is CM44 CN.
- The modernizing of technologic lines for the accomplishing of prototypes by performant equipment acquisition, the careful analysis for knowing the machinery with the best characteristics for the elaboration of prototypes of footwear and morocco goods and fur garment was done.
- A high diversity of performant equipment (19), meant for these technologic fluxes, was purchased as part of this stage, from famous companies from Germany and Italy, which are producers of equipment.
- The acquisition of performant equipment specific to this domain was carried out on the basis of the public tender that took place on 27.10. and 27.11.2008, organized in conformity with OUG 34/2006.

5. Research project: The endowing of the physical-mechanical testing laboratory with equipment meant for the quality control done on textile materials. Programme for increasing the industrial product competitiveness.- 2007-2008

A very important role in supporting the industrial product competitiveness from the textile sector belongs to the research institutes, by ensuring the services for evaluating the

4. Proiect: Infrastructura pentru cercetarea in designul pielarie-incaltaminte,in scopul dezvoltarii, la standarde europene, a serviciilor de cercetare, in scopul dezvoltarii,la standarde europene,a serviciilor de cercetare pentru industria creativa - 2007-2009

• Obiective

Dezvoltarea capacitatilor romanesti de cercetare in design, in scopul oferirii industriei a acelor servicii de cercetare, capabile sa o ajute la configurarea unor produse competitive in industria creativa europeana si la integrarea acesteia in retelele de specialitate.

• Rezultate

- Achizitia de echipamente pentru designul calapodului, cu comanda CAD; s-a avut in vedere echipamentul cel mai performant de realizare digitala a calapodului prototip. Astfel, echipamentul pentru designul calapodului achizitionat este masina de degrosat si finisat o pereche de calapoade pentru model cu comanda numerica, tip NEWLAST NL MOD 2RF/C. Realizarea prototipului de calapod se efectueaza computerizat, pe baza unui soft special.
- Achizitia de echipamente performante pentru ingineria de model; s-au analizat cele mai noi utilaje care pot realiza croirea computerizata a pielii naturale si a materialelor sintetice. Astfel, echipamentul pentru croirea detaliilor achizitionat este masina computerizata de croit piele si materiale sintetice,proiectie tipar cu laser cu doua capete de taiere. Acesta este produs de firma COMELTZ ITALIA, modelul fiind CM44 CN.
- Modernizarea liniilor tehnologice pentru realizarea prototipurilor prin achizitie echipamente performante s-a facut o analiza minutioasa pentru cunoasterea utilajelor cu caracteristicile cele mai bune, pentru confectia prototipurilor de incaltaminte si marochinarie si de confectii si blana.
- Achizitia, in cadrul acestei etape, de echipamentele performante, in numar de 19, de o mare diversitate, destinate acestor fluxuri tehnologice, de la firme prestigioase producatoare de echipamente din Germania, respectiv Italia.
- Achizitia de echipamente performante specifice domeniului s-a desfasurat pe baza de licitatii publice in 27.10. si 27.11.2008, organizate conform OUG 34/2006.

5. Proiect: Dotarea laboratorului de incercări fizico - mecanice cu echipamente destinate controlului calitatii materialelor textile. Program de creştere a competitivităţii produselor industriale- 2007-2008

Un rol deosebit de important in sprijinirea competitivitatii produselor industriale din sectorul textile revine institutelor de cercetare prin asigurarea serviciilor de evaluare a calitatii si conformitatii materialelor textile in acord cu prevederile

quality and textile material conformity with the provisions of the European harmonized directives and standards associated to directives, which are necessary for the public authorities in the process of market surveillance, and also for the producers for fulfilling their responsibilities derived from the directive provisions.

• Objectives:

- The development of the laboratory for physical-mechanical testing, equipment acquisition, in compliance with the requirements of SR EN ISO/CEI 17025:2005 standard.
- The increasing of the capacity of the testing laboratories by the endowment with the last generation equipment and personnel training will contribute to the general strategy of the programme for increasing the industrial product competitiveness.
- The increasing of the capacity of the accredited laboratories for performing tests according to the European standards will allow the Romanian enterprises to test and adjust the technologies for the accomplishing of products at the level of international standard requirements.
- This way, the project will contribute to the achieving of the Economic Competitiveness Increasing objective regarding the increasing of the Romanian enterprise productivity and the reducing of the inequalities as compared to the average productivity at the EU level.

In 2008, the physical-mechanical testing laboratory, as part of the project, was endowed with a LASERSCAN-type equipment that automatically measures the individual fineness of the wool fibres, displays the parameter distribution histograms for 3,000 fibres, calculates the diameter average in µm, CV, SD, the comfort factor, etc.

directivelor si a standardelor europene armonizate asociate directivelor, necesare atat autoritatilor publice in procesul de supraveghere a pietii, cat si producatorilor, pentru indeplinirea obligatiilor lor, derivate din prevederile directivelor.

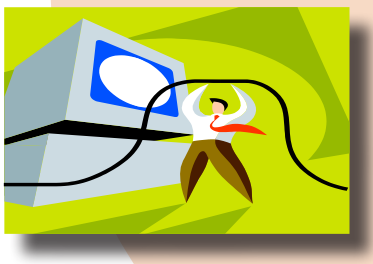
• Obiective:

- Dezvoltarea laboratorului de incercări fizico-mecanice, achiziţii de echipamente, conformarea cu cerinţele standardului SR EN ISO/CEI 17025:2005;
- Cresterea capabilitatii laboratoarelor de testare prin dotarea cu echipamente de ultima generatie si specializarea personalului, va contribui la strategia generala a programului de creştere a competitivităţii produselor industriale;
- Cresterea capacitatii laboratoarelor acreditate de a efectua teste conform standardelor europene va permite intreprinderilor romanesti testarea si punerea la punct a tehnologiilor pentru realizarea de produse la nivelul cerinţelor standardelor internaţionale;
- In acest fel, proiectul va contribui la realizarea obiectivului de crestere a competitivitatii economice privind creşterea productivităţii intreprinderilor româneşti si reducerea decalajelor faţă de productivitatea medie la nivelul Uniunii.

In anul 2008 laboratorul de incercări fizico-mecanice, in cadrul proiectului, a fost dotat cu un echipament tip LASERSCAN, care măsoară automat fineţea individuală a fibrelor de lână, afişează histogramele distribuţiei diametrelor pentru 3 000 fibre, calculează media diametrelor in µm, CV, SD, Factorul de confort etc.

LASERSCAN-TYPE EQUIPMENT

5.2 International research



The integration of Romania into the European Union was a challenge for the activity of INCDTP (the Research-Development National Institute for Textile and Leather) in the year 2008, for the purpose of getting in line with the objectives of the Strategic Research Agenda and those of the European Technology Platform for the Future of Textiles and Garments, elaborated by EURATEX; Especially for 2008, and also for the future, INCDTP ascertains, as its priority objective, the increasing of the number of European projects it runs, as a partner or coordinator, with the aim of:

- extending the worldwide visibility of the Romanian research from the textile – leather field;
- increasing the INCDTP capacity of being a performant partner within the scientific research programmes and, especially, within the Framework Programme 7;
- augmenting the number of partnerships/collaborations with the university, industrial, European research environments, with R-D institutions having a textile – leather tradition.
- Large-scale disseminating of the concerns, the results obtained by INCDTP, for a better knowing and participating in networks, clusters, at the European level;

INCDTP position consolidating within the R-DI system from Romania and at the European level by Excellence and Efficiency.

**

The founding, ever since 2006, of the international research monitoring department was a first measure taken for:

- identifying the priority research domains, the characteristics that are specific to every European research programme and the procedures of participating in a competition of such wide scope, the implementing principles, the evaluating criteria, the practical steps of preparing a new proposal, from open call, to its submitting;
- the correlating of the personal idea of the researcher to the philosophy of the European research programme and the type of project it can choose as a tool.

Answering to these specific objectives, INCDTP took action in order to intensify the contacts with EU researchers, get conversant with the modern topics of the scientific research, build the expertise, disseminate the opportunities, share the methodologies and stimulate the innovation spirit and the trans-national collaboration over the enlarged Europe.

The research trends tackled by INCDTP in 2008 singularize the increasing of the research activity performance and the correlation to the objectives of the European research Platforms and programmes. Eloquent examples in this respect, structured by types of European research programmes, are:

Integrarea Romaniei in Uniunea Europeana a constituit o provocare pentru activitatea I.N.C.D.T.P., in anul 2008, ea trebuind sa se alinieze la obiectivele Agendei de Cercetare Strategica si Platformei Tehnologice Europene pentru Viitorul Textilelor si al Confectiilor, elaborate de EURATEX. In mod deosebit pentru 2008, dar si in perspectiva, I.N.C.D.T.P. si-a stabilit ca obiectiv prioritar extinderea numarului de proiecte europene pe care le deruleaza, in calitate de partener sau coordonator, in scopul:

- cresterii vizibilitatii pe plan international a cercetarii romanesti din domeniul textile-pielarie;
- cresterii capacitatii I.N.C.D.T.P. de a constitui un partener performant, in programele de cercetare stiintifica si, indeosebi, in Programul CADRU 7;
- cresterii numarului de parteneriate/colaborari cu mediul universitar, industrial, de cercetare pe plan european, cu institutii de CD cu traditie in sectorul textile-pielarie;
- diseminarii pe scara larga a preocuparilor, rezultatelor obtinute de I.N.C.D.T.P., pentru o mai buna cunoastere si participare in retele, clustere, la nivel european;
- consolidarii pozitiei I.N.C.D.T.P. in sistemul CDI din Romania si la nivel european prin Excelenta si Eficienta.

**

Infiintarea, inca din anul 2006, a departamentului de monitorizare a cercetarii la nivel international a constituit o prima masura, pentru:

- identificarea domeniilor prioritare de cercetare, a caracteristicilor specifice fiecarui program european de cercetare si a procedurilor de participare la o competitie de o asemenea anvergura, a principiilor de implementare, criteriilor de evaluare, pasii concreti de pregatire a unei propuneri, de la open call, pana la depunere;
- corelarea ideii personale a cercetatorului cu filozofia programului european de cercetare si tipul de proiect pe care il poate alege, ca instrument.

Raspunzand acestor obiective specifice, I.N.C.D.T.P. a actionat pentru intensificarea contactelor cu cercetatori din UE, cunoasterea problematicii moderne a cercetarii stiintifice, construind expertiza, inter-diseminand oportunitati, impartasind metodologii si stimuland spiritul inovarii si colaborarea transnationala intr-o Europa largita.

Directiile de cercetare abordate de I.N.C.D.T.P., in anul 2008, evidentiaza cresterea performantei activitatii de cercetare si corelarea cu obiectivele Platformelor si programelor de cercetare europene.

Exemple elocvente in acest sens, structurate pe tipuri de programe europene de cercetare, sunt:

5.2 International research

A. The Framework Programme 7

FP7 represents the abbreviation for the Seventh Framework Programme of Technologic Research and Development. This is the main tool of EU for financing the research in Europe, which is going on during 2007 – 2013. Also, FP7 was created for responding to the necessities and the competitiveness of the labour places from Europe.

• **Project:** "Virtual Collaborative Design Environment ECO-TEX-DESIGN", 09.2008 – 08.2011
• **Objectives:**
- **T**the developing of a platform of "Knowledge based on collaborative 3D virtual design" dedicated to the garment/ leather/footwear SMEs as fallows:
- the designing and achieving of a "Collaborative platform of 3D virtual design" that will provide to the users the information and tools that are necessary for creating an integrated network of developing certain textile and leather products, which are improved or completely new;
- a new knowledge environment that is based on five sets of data and the requirements and/or the specifications of clients, which will interact with the 2D CAD and 3D CAD systems and will be connected to the collaborative platform. It will include: the EHS decision tools and a Performance Evaluation Modulus"
- "Production Organizing Network" based on the concept of" extended enterprise" that will allow a rapid reaction to the new tendencies. It will include: a partner network and a data generator on the basis of certain technical specifications that already exist in the history of enterprises".
• **Results:**
- **t**he defining of the system and priorities
- the identifying of the research priorities of the textile-garment and footwear sectors, and of the possible applications in the adjacent sectors.

B. LEONARDO DA VINCI PROGRAMME

The European programme Leonardo da Vinci is enlisted into the policy of the European Union of developing an European space of professional training.
The programme adds a new dimension, the European one, to the actions of the participating states. These actions are destined for the initial and life-long professional training. The programme stimulates creativity

A. PROGRAMUL CADRU 7

PC7 reprezinta abrevierea pentru Al Saptelea Program Cadru de Cercetare si Dezvoltare Tehnologica. Acesta este instrumentul principal al UE pentru finantarea cercetarii in Europa, care se desfasoara in perioada 2007-2013. De asemenea, PC7 a fost creat pentru a raspunde necesitatilor si competitivitatii locurilor de munca din Europa.

• **Proiect:** "Virtual Collaborative Design Environment ECO – TEX – DESIGN", 09.2008 – 08.2011
• **Obiective:**
Dezvoltarea unei platforme de "Cunostinte bazate pe design virtual 3D colaborativ", dedicat IMM-urilor din Confectii & Pielarie/Incaltaminte prin:
- proiectarea si realizarea unei "Platforme colaborative de Design Virtual 3D", care va furniza utilizatorilor informatiile si instrumentele necesare crearii unei retele integrate de dezvoltare a unor produse textile si pielarie, imbunatatite sau complet noi;
- un mediu nou de cunostinte bazat pe cinci seturi de date si pe cerintele si/sau specificatiile clientilor care va interactiona cu sistemele 2D CAD si 3D CAD si legat de platforma colaborativa. Va include: instrumente de decizie EHS si un Modul de Evaluare a Performantelor;
- "Retea de Organizare a Productiei" - bazata pe conceptul de "intreprindere extinsa", care va permite o reactie rapida la noile tendinte. Va include: o retea de partneri si un generator de date pe baza unor specificatii tehnice deja existente in istoricul intreprinderilor.
• **Rezultate:**
- definirea sistemului si a prioritatilor;
- identificarea prioritatilor de cercetare a sectoarelor de textile-confectii si incaltaminte si a posibilelor aplicatii in sectoarele adiacente

B. PROGRAMUL LEONARDO DA VINCI

Programul european Leonardo da Vinci se inscrie in politica Uniunii Europene de dezvoltare a unui spatiu european de formare profesionala. Programul adauga o noua dimensiune, cea europeana, actiunilor statelor participante destinate formarii profesionale initiale si pe parcursul intregii vieti, stimuleaza creativitatea si inovarea pentru facilitarea insertiei cetatenilor Europei in

and innovation for facilitating the inserting of the citizens from Europe into the professional life, sustains the processes of adapting the educational and training systems to the economic and technologic evolutions and the constant mutations that are specific to the world market.

viata profesionala, sustine procesele de adaptare a sistemelor educationale si de formare la evolutiile economice si tehnologice si la mutatiile constante specifice pietei mondiale.

1.Project: "E-learning Programme for Skills Development in Textile Defects Analysis" – Skilltex, 03.12.2007 – 02.12.2009, EU Partners: 7

• **Objective**

The ensuring of efficient, personalized means of online learning the defects and the existing technologies

• **Results:**

- e-learning course

1. Proiect: "E-learning Programme for Skills Development in Textile Defects Analysis" – Skilltex, 03.12.2007 – 02.12.2009, Parteneri UE: 7

• **Obiectiv:**

Asigurarea de mijloace eficiente, personalizate, de învatare online a defectelor si tehnologiilor textile

• **Rezultate:**

- curs e-learning

2. Project: Fashion School II - multimedia and internet guide for international textile trade

• **Results:**

- multimedia guide in five languages
- complete visual and e-learning modules in 15 languages
- seminars, workshop's, web page for dissemination

2. Proiect: Fashion Scholl II - multimedia and internet guide for international textile trade

• **Rezultate:**

- ghid multimedia de textile in cinci limbi
- module complete vizuale si de e-learning in 15 limbi
- seminarii, workshop-uri, pagina web pentru diseminare

C. EUREKA PROGRAMME

C. PROGRAM EUREKA

At the level of the textile and leather industry, the EUREKA programme has the following objectives:

- the stimulating of the Romanian companies, especially the SMEs, for entering on the European and world markets with innovative technologies and products, developed as part of the EUREKA projects;
- the increasing of the degree of replacing the imported technologies and products by producing them in the Romanian companies;
- the stimulating of the participation of the Romanian SMEs having an innovative and/or production profile to the R-DI programmes;
- the strengthening of the collaboration between the research units (institutes and universities) and the SMEs.

La nivelul industriei textile si de pielarie, programul EUREKA are urmatoarele obiective:

- stimularea firmelor romanesti, in special IMM–uri, pentru patrunderea pe pietele europene si mondiale cu tehnologii si produse inovative, dezvoltate in cadrul proiectelor EUREKA;
- cresterea gradului de inlocuire a produselor si tehnologiilor de import, prin producerea acestora in cadrul firmelor romanesti;
- stimularea participarii IMM-urilor romanesti, cu profil inovativ si/sau de productie la programele de CDI;
- intarirea colaborarii dintre unitatile de cercetare (institute si universitati) si IMM-uri

1. Project : "Antibacterial Textiles" - E! 3286 BIOTEX, 2004-2008

• **Objectives:** The accomplishing of textile materials having antibacterial and deodorizing properties

- Documentary study regarding the antibacterial and bacteriostatic compounds used worldwide for treating the textile materials, the technologies of obtaining the antibacterial yarns and textile materials
- The elaborating of the technologic process of obtaining the antibacterial textile materials
- Physical-mechanical, chemical and biological analyses of the accomplished textile materials
- Dissemination

• **Results:**

a. Antibacterial compositions based on: a. natural biopolymers (chitosan) + natural plant extracts having an antibacterial effect (lavender, fir tree, garden sage, pine tree) with/ without silver, titanium, zirconium, zinc and copper salts; b. chlorinated phenyl ethers: 2,4,4'-trichloro-2'-hydroxydiphenyl ether (triclosan), chitosan solutions, silver oxide; c. silver salts, titanium oxide, zinc oxide.

Novelty elements:

- The establishing of the technologic systems of simultaneously obtaining the plant extracts (lavender, fir tree, garden sage, pine tree) having an antibacterial effect and the natural dyes, respectively;
- The obtaining of the natural complexes having a high antibacterial efficiency: chitosan – garden sage oil; chitosan – garden sage oil - zirconium oxychloride

Utilization fields: textile industry, keeping products.

b. Technologic processes of applying the antibacterial compounds on woven and knitted fabrics of 100% cotton

Novelty elements:

- The establishing of the parameters of the technologic process of applying the antibacterial compounds as a final finishing stage of the textile material;
- The obtaining of textile materials that are treated with compounds based on silver/titanium with an outstanding efficiency over the Proteus Bacillus, the Piocianic Bacillus (Pseudomonas Aeruginosa), Klebsiella, Escherichia coli and Staphylococcus aureus coag.+;

Utilization fields: textile industry

c. Technologic process of obtaining bio-active fibrous compositions:

16 versions of knitted fabrics having fibrous composition based on cotton/pna/Lycra and cotton/amicor/Lycra; 4 versions of knitted fabrics based on cotton/bamboo

Novelty elements:

- the accomplishing of new antibacterial textile materials that

1. Proiect : "Textile Antibacteriene" - E! 3286 BIOTEX, 2004-2008

• **Obiective:** realizarea de materiale textile cu proprietati antibacteriene si deodorizante

- Studiu documentar privind compusii bactericizi si bacteriostatici utilizati pe plan mondial pentru tratarea materialelor textile, tehnologiile de obtinere a firelor si materialelor textile bactericide;
- Elaborarea procesului tehnologic de obtinere a materialelor textile antibacteriene;
- Analize fizico-mecanice, chimice si biologice ale materialelor textile realizate;
- Diseminare.

• **Rezultate:**

a. Compozitii bactericide, pe baza de:

- biopolimeri naturali (chitosan) + extracte naturale din plante cu efect bactericid (levantica, brad, salvie, pin) cu/fara saruri de argint, titan, zirconiu, zinc si cupru;
- fenil eteri clorurati: 2,4,4'-tricloro-2'-hidroxidifenil eter (triclosan), solutii chitosan, oxid de argint; c. saruri de argint, oxid de titan, oxid de zinc.

Elemente de noutate:

- stabilirea proceselor tehnologice de obtinere simultana a extractelor din plante (levantica, brad, salvie, pin), cu efect bactericid si respectiv de coloranti naturali;
- obtinerea de complecsi naturali, cu eficienta ridicata antibacteriana: chitosan - ulei de salvie; chitosan - ulei de salvie – oxiclorura de zirconiu;

Domenii de utilizare: industria textila, produse de intretinere.

b. Procese tehnologice de aplicare compusi bactericizi pe tesaturi si tricoturi din bumbac 100%

Elemente de noutate:

- stabilirea parametrilor procesului tehnologic de aplicare a compusilor bactericizi ca etapa de finisare finala a materialului textil;
- obtinerea de materiale textile tratate cu compusi pe baza de argint/titan, cu o eficienta deosebita asupra Bacil proteus, Bacil piocianic, Klebsiella, E. coli si Stafilococ auriu coag.+

Domenii de utilizare: industria textila

c. Procese tehnologice de obtinere compozitii fibroase bioactive:

16 variante de tricoturi cu compozitii fibroase pe baza de bumbac/pna/Lycra si bumbac/amicor/Lycra;

4 variante de tricoturi pe baza de bumbac/bambus

Elemente de noutate:

- realizarea de noi materiale textile antibacteriene contin-

contain bioactive yarns, having a high efficiency against microorganisms
Utilization fields:
- the textile and sanitary industry, especially for the persons suffering from chronic bacterial illnesses and for children.

2. Project "The obtaining of functionalized nanostructured textile materials" - Nanotex, 2008 – 2009
• Objectives:
- the developing of new photo catalytic textile materials having higher activity and resistance to UV and visible light;
- the developing of the technologies of laying the photocatalytic compounds on textile sublayers ;
- the accomplishing of photocatalytic textile materials that can be used as medical and hygiene, indoor articles with a self-cleaning / self - sterilizing capacity, strong antibacterial effects, the eliminating of the unpleasant smells, the reducing of the volatile organic compounds, the preserving of the natural aspect of the woven fabrics.
- the characterizing of the physical and chemical properties of the photocatalytic nanomaterials and accomplished coatings.
• Results:
- Study regarding the technologies of applying the photocatalytic compounds on textile materials: techniques of coating with dry particles, wet covering methods (molecular self-assembling, Sol-Gel), physical methods (CVD, PECVD, RF magnetron sputtering, plasma, AP-MOCVD);
- Study regarding the methods of characterizing the compounds and the textile materials treated with photocatalytic compounds; study of the risks induced by the photocatalytic compounds over the human health;
- The designing of the laboratory technology: the selecting of the technology of weaving/knitting textile materials based on silver, the selecting of the methods of physically - chemically analysing the photocatalytic textile materials

3. Project: "The obtaining of multifunctional textile materials based on silver" Funtesil, 2008 – 2011
• Objectives:
- the selecting of yarns and fibrous compositions based on silver, technologies of obtaining antibacterial textile materials, methods of analyzing the physical –chemical, biologic properties of the compounds and antibacterial textile materials;
- the elaborating of the technologic processes of accomplishing the textile materials based on silver;
- the examining of the biocide and comfort performances of the accomplished textile materials;

and fire bioactive, cu eficienta ridicata contra microorganismelor
Domenii de utilizare:
- industria textila si sanitara, in special pentru persoane suferind de afectiuni bacteriene cronice si pentru copii

2. Proiect: „Realizarea de materiale textile nanostructurate functionalizate " – Nanotex, 2008 – 2009
• Obiective:
- dezvoltarea de noi materiale textile fotocatalitice cu activitate si rezistente ridicate la lumina UV si vizibila;
- dezvoltarea tehnologiilor de depunere a compusilor fotocatalitici pe substraturi textile;
- realizarea de materialele textile fotocatalitice utilizabile drept articole medicale si de igiena si articole de interior, cu capacitate de autocuratare/autosterilizare, efecte antibacterien puternice, eliminarea mirosurilor neplacute, reducerea compusilor organici volatili, prezervarea aspectului natural al tesaturilor;
- caracterizarea proprietatilor fizice si chimice ale nanomaterialelor fotocatalitice si acoperirilor realizate
• Rezultate:
- Studiu privind tehnologiile de aplicare ale compusilor fotocatalitici pe materiale textile: tehnici de acoperire cu particule uscate, metode de acoperire umede (auto-asamblare moleculara, sol-gel), metode fizice (CVD, PECVD, RF magnetron sputtering, plasma, AP-MOCVD);
- Studiu privind metodele de caracterizare ale compusilor si materialelor textile tratate cu compusi fotocatalitici;
- Studiul riscurilor implicate de compusii fotocatalitici asupra sanatatii umane;
- Proiectarea tehnologiei de laborator - selectare tehnologie de tesere/tricotare materiale textile pe baza de argint, selectare metode de analiza fizico-chimica a materilelor textile foto-catalitice.

3. Proiect: „Realizarea de materiale textile multifunctionale pe baza de argint "- Funtesil, 2008 – 2011
• Obiective:
- selectarea firelor si a compozitiilor fibroase pe baza de argint, tehnologii de obtinere a materialelor textile bactericide, metode de analiza a proprietatilor fizico-chimice si biologice a compusilor si materialelor textile bactericide;
- elaborarea proceselor tehnologice de realizare a materialelor textile pe baza de argint;
- examinarea performantelor biocide si de confort ale materialelor textile realizate;
- evaluarea eficacitatii clinice, a securitatii si lipsei de tox-

- the evaluating of the clinical efficacy, safety and lack of toxicity of the accomplished materials during the treatment of the patients suffering from skin acute infections by way of effecting specific tests;
- the elaboration of a technical material concerning the research results;
- information dissemination.

• **Results:** technologies of obtaining t-shirts based on silver (textile backings containing silver yarns and with various fibrous compositions – bamboo, bamboo/polyester, cotton/bamboo) that are treated with silver compounds or silver nanoparticles.

4. Project: "New methods of identifying the modern yarns"– FIBRIN, 2004 – 2008

• **Objectives:**

- The studying of the physical and chemical properties of certain new textile fibers for developing identification methods in order to support the small and medium enterprises from the textile sector in satisfying the requirements of the European laws-in-force and the similar ones from Romania with reference to the introducing of the textile products on the market and the consumers' protection.
- The constituting of a data base comprising the textile yarn characteristics.

• **Results:**

Product: "Guide to textile yarns" - it contributes to the strengthening of the scientific basis of the partner SMEs and of those from the textile product market, which are involved in innovative developments and it is useful to all the organizations from within the textile chain.

5. Project: "The management of the textile waste" MADETEXTIL, 2008-2010

• **Objective:**

- The elaborating of a work algorithm for taking the decisions having an ecologic impact

• **Results:** Research report on the ecologic substantiation of the activities of waste collecting and mechanical processing

6. Research project: A new type of apparel - CAD for the 2D/3D geometric modeling of apparel – Acronym G-CAD, 2008-2011

• **Objectives:**

- the introducing of innovative technologies and products in the garment SMEs for the purpose of increasing the product

icitate a materialelor realizate in tratamentul pacientilor suferinzi de infectii acute ale pielii prin efectuarea de teste specifice;
- elaborare material tehnic privind rezultatele cercetarii;
- diseminare informatii.

• **Rezultate:** tehnologii de obtinere a tricoturilor pe baza de argint (suporturi textile cu continut de fire de argint si cu diverse compozitii fibroase (bambus, bambus/ poliester, bumbac/bambus), tratate cu compusi ai argintului sau nanoparticule de argint).

4. Proiect: „Metode noi de identificare a firelor moderne" – FIBRIN, 2004 – 2008

• **Obiective:**

- Investigarea proprietatilor fizce si chimice ale unor fibre textile noi pentru dezvoltarea de metode de identificare, pentru a sprijini întreprinderile mici si mijlocii din domeniul sectorului textil în satisfacerea cerintelor legislatiei europene si a celei similare din Romania, legate de introducerea pe piata a produselor textile si de protectia consumatorului;
- Constituirea unei baze de date cuprinzând caracteristicile firelor textile.

• **Rezultate:**

Produs: "Ghid pentru fibre textile" – care contribuie la întarirea bazei stiintifice a IMM-urilor partenere si a celor de pe piata de produse textile, implicate în dezvoltari inovative si este util tuturor organizatiilor de pe lantul textil.

5. Proiect: "Managementul deseurilor textile" MADETEXTIL, 2008-2010

• **Obiective:**

- Elaborarea unui algoritm de lucru pentru luarea deciziilor cu impact ecologic

• **Rezultate:** Raport de cercetare privind fundamentarea ecologica a activitatilor de colectare si prelucrare mecanica a deseurilor

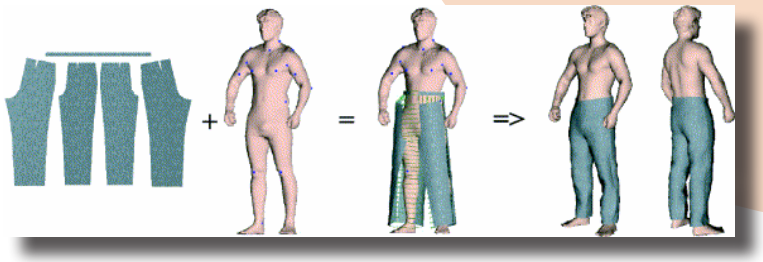
6. Proiect: "O noua imbracaminte - CAD pentru modelarea geometrica 2D/3D a confectiilor" – Acronim G-CAD, 2008-2011

• **Obiective:**

- Introducerea de tehnologii si produse innovative in IMM-urile de confectii in scopul cresterii competitivitatii pro-

competitiveness;
- implementation of the rules, methods and tools used in the garment designing done by the industrial actors;
- the elaborating of a modular system for 3D garment designing and modeling based on the body three-dimensional scanning.
• **Results:** Study on the rules, methods and tools used in the garment designing done by the industrial actors.
Utilization fields:
- The garment industry;
- The CAD system producers

duselor;
- Implementarea regulilor, metodelor si instrumentelor utilizate in proiectarea confectiilor de catre actorii industriali;
- Elaborarea unui sistem modular pentru proiectarea si modelarea 3D a confectiilor, bazat pe scanarea tridimensionala a corpului.
• **Rezultate:** Studiu privind regulile, metodelor si instrumentelor utilizate in proiectarea confectiilor de catre actorii industriali.
Domenii de utilizare:
- industria confectiilor de imbracaminte;
- producatorii de sisteme CAD.

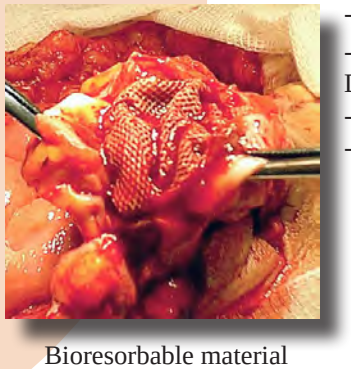


Patterns | Scanned body | Petterns preposiotioned on the body | Clothing sewn and draped by simulating on the scanned body

7. Research project: "Bioresorbable material made of biodegradable polyester blends", Acronym – BIOTEXTIL, 2005-2008
• **Objectives:**
- the developing of new types of resorbable biomaterials having textile structures meant for manufacturing medical articles (dressings, bandages) used in all types of surgical interventions from domains like: ORL, orthopedics, plastic and reconstructive surgery, gastroenterology, etc.;
- the ensuring of the biomedical and biofunctional performance level for the purpose of accomplishing competitive products;
- the promoting and extending of the bilateral collaboration relationships with research institutes from the European Union with a view to integrating the Romanian research regarding new materials into the top domains of the contemporary science having an impact in creating adequate conditions for the more efficient participation of this in the European Union programmes by the better correlation to the actual programmes and the most recent tendencies that will manifest themselves in the following programmes, and the turning to good profit of the vernacular human potential by international cooperation.
• **Results:** Product –Bioresorbable textile material having the following technical characteristics:
- flexibility ;
- dimensional stability ;
- conformity with the wound topography ;

7. Proiect: "Material bioresorbabil din amestecuri poliesterice biodegradabile", Acronim – BIOTEXTIL, 2005-2008
• **Obiective:**
- dezvoltarea de noi tipuri de biomateriale resorbabile, cu structuri textile destinate fabricarii de produse medicale (pansamente, bandaje) utilizabile in toate tipurile de interventii chirurgicale din domenii ca: O.R.L., ortopedie, chirurgie plastica si reconstructiva, gastroenterologie etc.;
- asigurarea nivelului de performante biomedicale si biofunctionale in scopul realizarii de produse competitive;
- promovarea si extinderea relatiilor de colaborare bilaterala cu institute de cercetare din Uniunea Europeana, in vederea integrarii cercetarii romanesti de materiale noi, in domeniile de varf ale stiintei contemporane cu impact in crearea de conditii pentru participarea mai eficienta a acesteia la programele Uniunii Europene prin corelarea mai buna cu actualele programe si cu tendintele cele mai recente care se vor manifesta in programele urmatoare si valorificarea potentialului uman autohton prin cooperare internationala.
• **Rezultate:** Produs – Material textil bioresorbabil, cu urmatoarele caracteristici tehnice:
- flexibilitate;
- stabilitate dimensionala;
- conformitate cu topografia ranii;

- haemostasis achieving time – 30 s ;
- resorption time – max.90 days;
Application field: hemorrhages of the parenchymal organs; accidents, natural calamities



Bioresorbable material

- timp de realizare a hemostazei – 30 s;
- timp de resorbtie – max. 90 zile;
Domeniul de aplicare:
- hemoragii ale organelor parenchimatoase;
- accidente calamitati naturale

8. Project: "Computer aided intelligent system of footwear designing" – Acronym ICAFAD, 2006 – 2008
Obtained results: Programme SHOE MODELING 2 D 3D
Main characteristics:

Footwear design in 2D and 3D

- facilities in installing the programme on a very cheap computing system without any device appendices;
- reduced time consumption for introducing the data in 2D;
- the possibility of modifying the lines on the pattern;
- precision in execution by using the top technique in drawing and developing the component parts of the footwear inferior and superior assembly;
- the exact generating of the shoe last medium copy that is needed for the effecting of the footwear basic drawing
- the practical version of the Programme SHOE MODELING 2D is the printing of the basic modulus and the parts resulted from the gradation on a printer or plotter. The modulus SHOE MODELING 2D has not as solved the export of the component footwear parts in a universal format of the DXF type or any other comparable one.
- The module SHOE MODELING 3D, at the developing stage, allows the visualizing/hiding of each shoe last half. The programme has no finalized functions of the import – export of shoe last data, of the draw functionalities on the shoe last.

8. Proiect: "Sistem inteligent de proiectare a incaltamintei asistat de calculator" – Acronim ICAFAD, 2006 – 2008
Rezultate obtinute: Programe SHOE MODELING 2 D 3D
Caracteristici principale:
- facilitati in instalarea programului pe un sistem de calcul foarte ieftin, fara dispozitive anexe;
- consum redus de timp pentru introducerea datelor in 2D
- posibilitatea de modificare a liniilor pe model;
- exactitate in executie prin utilizarea tehnicii de varf in desenarea si dezvoltarea pieselor componente ale ansamblului inferior si superior al incaltamintei;
- obtinerea cu exactitate a copiei medii a calapodului necesara executiei desenului de baza a incaltamintei;
- varianta practica a programului SHOE MODELING 2D este tiparirea modului de baza si a pieselor rezultate din gradare la o imprimanta sau ploter. Modulul SHOE MODELING 2D nu are rezolvat exportul pieselor componente ale incaltamintei intr-un format universal de tip DXF sau altul comparabil;
- modulul SHOE MODELING 3D, in faza de dezvoltare permite vizualizarea/ ascunderea fiecarei jumatati a calapodului. Programul nu are definitivate functiile de import export a datelor de pe calapod, functionalitatile de desen pe calapod.

9. Project: "The creating of a service providing system that should manage, by means of the internet, the car fleet of the SMEs" - Acronym GIS-FVEMA, 2006-2008

• **Objective:**

- the designing and implementing of a geographic informatic system (GPS) that is accessible via an interactive web site, which should offer the SMEs from the targeted areas supply of information regarding the locating of the transport demand and supply within the European space. .

GPS Geographic Database Server

• **Results:**

- data bases for creating a geographic informatic system (GPS);
- software programme for the managing and optimizing of the transport activity within the SMEs.

11. Proiect: "Crearea unui sistem de furnizare a serviciilor care sa gestioneze prin intermediul internetului parcul de vehicule al IMM-urilor" - Acronim GIS-FVEMA, 2006-2008

• **Obiective:**

- proiectarea si implementarea unui sistem informatic geografic (GPS), accesibil printr-un site web interactiv, care sa ofere IMM-urilor din zonele tinta furnizare de informatii privind localizarea cererii si a ofertei de transport in spatiul european

• **Rezultate:**

- baze de date pentru crearea unui sistem informatic geografic (GPS);
- program software pentru gestiunea si optimizarea activitatii de transport, in IMM-uri.

D. BILATERAL COLLABORATION PROGRAMME

The bilateral collaboration is the most rapid and efficient "access gate" to the cooperation at regional, European and international level. It represents an opportunity that can be turned to good profit on short and medium term owing to the creation and consolidation of partnerships that are so necessary for the cooperation at the regional, European and international level, for the scientific and technologic research programmes with considerable financial resources.

Moreover, the activity of bilateral cooperation brings that "added value" that is necessary at the national level, for those internal projects from which the financing of the research activity itself is ensured. And, not in the last run, the bilateral collaboration relationships ensure the ideal communication platform for the mutual getting acquainted with the research-development and innovation policies among the partner countries.

D. PROGRAM DE COLABORARI BILATERALE

Colaborarea bilaterala este cea mai rapida si eficienta „poarta de acces" pentru cooperarea la nivel regional, european si international. Ea reprezinta o oportunitate ce poate fi valorificata pe termen scurt si mediu datorita crearii si consolidarii parteneriatelor atat de necesare cooperarii la nivel regional, european si international pentru programele de cercetare stiintifica si tehnologica, cu resurse financiare considerabile. In plus, activitatile de cooperare bilaterala aduc acea "valoare adaugata" atat de necesara la nivel national, pentru acele proiecte interne din care este asigurata finantarea activitatii de cercetare propriu-zise. Nu in ultimul rand, relatiile de colaborare bilaterala asigura platforma ideala de comunicare pentru cunoasterea reciproca a politicilor de cercetare-dezvoltare si inovare intre tarile partenere.

1. Project Romania - Turkey: "The enzymatic finishing and its effects over the cellulose fiber textile materials" – acronym EnzymFinish, 2008 - 2009

• **Objective:** the substituting of the conventional chemical technologies of finishing the cellulose fiber textile materials by biotechnologies, that is the substituting of the environment-noxious chemical products by bioproducts (enzymatic products).

1. Proiect Romania - Turcia: "Finisarea enzimatica si efectele acesteia asupra materialelor textile din fibre celulozice" – acronim EnzymFinish, 2008 - 2009

• **Obiectiv:**

- substituirea tehnologiilor chimice clasice de finisare a materialelor textile din fibre celulozice cu biotehnologii, respectiv inlocuirea produselor chimice nocive pentru mediu cu bioproduse (produse enzimatice)

• Results:
- technologic plans and schemes meant for treating the cellulose fiber textile materials;
- the study of the analysis specific methods with the selected enzymatic methods;
- the study of the specific methods of determining the enzymatic activity

2. Project Romania – Turkey: „ Researches regarding the synthesis and applying of a new class of benzothiazole biocide products in the preservation of the wet-blue bovine skins", 2008-2009

• Objective:
- the accomplishing of 4 new products having a benzothiazole structure and a sulphonic group in the molecule for increasing the water solubility

• Results:
- 4 products having antifungic effect, which are derivates of 2-aminobenzothiazole-6-substituted by methyl, metoxi, chlorine, blend of sulphonic acids isomers and 2- aminobenzothiazole-6-nitro-4-sulphonic

Biocide products of 2, 2-amino-6-metoxi-benzothiazole, paste and powder

3. Project Romania -Turkey: Advanced materials obtained from applying the top techniques in processing the skin subproducts, ADVANSPROD, 2008-2009

Objective: the obtaining of advanced materials by using certain top processes of treating an important resource, the subproducts of tanned and untanned skin. .

• Results:
- protean additives, gelatine, biofuels of fat matter from the leather industry;
- technologies of processing the untanned skin waste;
- technologies of processing the tanned skin waste;
- technology of biofuel obtaining

Untanned skin waste (a) biofuel(b) and gelatine (c)

4. Project Romania - India: "Studies on certain natural dyes.", 2007-2009

• Objectives:
- the selecting of plants and plant waste having tinctorial properties;
- the elaborating of the dye extracting technologies;
- the establishing of the technology of dyeing with natural dyes;

• Rezultate:
- planuri si scheme tehnologice pentru tratarea materialelor textile din fibre celulozice;
- studiul metodelor specifice de analiza cu sistemele enzimatice selectionate;
- studiul metodelor specifice de determinare a activitatii enzimatice.

2. Proiect Romania – Turcia: „Cercetari privind sinteza si aplicarea unei clase de noi biocide benzotiazolice la prezervarea pieilor de bovine wet-blue", 2008-2009

• Obiectiv:
- realizarea a 4 produse noi, cu structura benzotiazolica si o grupa sulfonica in molecula pentru marirea solubilitatii in apa

• Rezultate:
- 4 produse cu efect antifungic derivati de 2-aminobenzotiazol-6-substituiti cu metil, metoxi, clor, amestec de acizi sulfonici izomeri si 2-aminobenzotiazol-6-nitro-4-sulfonic

3. Proiect Romania -Turcia: Materiale avansate obtinute prin aplicarea tehnicilor de varf in prelucrarea subproduselor pielii, ADVANSPROD, 2008-2009

Obiectiv: obtinerea de materiale avansate, prin utilizarea unor procese de varf de prelucrare a unei resurse importante, subprodusele de piele tabacita si netabacita

• Rezultate:
- aditivi proteici, gelatina, biocombustibili din materii grase din industria de pielarie;
- tehnologii de procesare a deseurilor de piele netabacita;
- tehnologii de procesare a deseurilor de piei tabacite;
- tehnologie de obtinere a biocombustibililor

4. Proiect Romania - India: "Studii asupra unor noi coloranti naturali", 2007-2009

• Obiective:
- selectarea plantelor si deseurilor de plante cu proprietati tinctoriale;
- elaborarea tehnologiilor de extractie a colorantilor;
- stabilirea tehnologiei de vopsire cu coloranti naturali;

- the characterizing of the dyed textile material properties;
- the accomplishing of kits of materials dyed with natural dyes;
- the promoting of the ecologic textiles.

• **Results:**

a. Technologies of cotton textile material dyeing with dyes obtained from Punica Granatum and Rheum Emodi;
b. Analyses of dyes and materials dyed by spectrometry FT-IR (pills KBr), UV-VIZ (200 -1100nm), GC-MS, AAS.

- caracterizarea proprietatilor materialelor texile vopsite;
- realizarea de kituri de materiale vopsite cu coloranti naturali;
- promovarea textilelor ecologice.

• **Rezultate:**

a. Tehnologii de vopsire materiale textile din bumbac cu coloranti obtinuti din Punica Granatum si Rheum Emodi;
b. Analize colorant si materiale vopsite prin spectrometrie FT-IR (pastile KBr), UV-VIZ (200 -1 100 nm), GC-MS, AAS.

5. Project Romania – Cyprus: "Studies for the controlled release of certain antipsoriasis remedies of scaffold collagen backing with various hydration degrees ", 2008 – 2009

Objective: the preparing and characterizing of the nanostructured collagen backings that are capable of gradually releasing antipsoriasis remedies obtained from natural extracts of Ficus Sycomorus

Results:

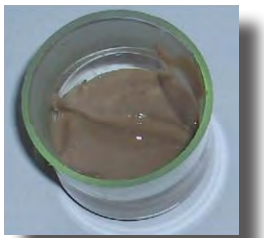
- 3 products: pharmaceutical transdermic forms with controlled releasing of the bioactive principles (psoralen) from the extract of Ficus Sycomorus:

5. Proiect Romania – Cipru: "Studii pentru cedarea controlata a unor medicamente antipsoriazice din suport colagenic scaffold cu diverse grade de hidratare", 2008 – 2009

Obiectiv: prepararea si caracterizarea suporturilor colagenice nanostructurate capabile sa cedeze gradat medicamente antipsoriatice, obtinute din extracte naturale de Ficus Sycomorus

• **Rezultate:**

- 3 produse: forme farmaceutice transdermice cu cedare controlata a principiilor bioactive (psoralen) din extractul de Ficus Sycomorus:



Matrices Membranes Ointment (cream)

6. Project Romania - Ukraine: "New durable materials meant for preserving and restoring the patrimony objects made of leather and parchment", 2008 -2009

• **Objectives:**

- the keeping and/or restoring of the historical testification sources made of leather and parchment, to a form that is as close as possible to the initial one;
- the maximum possible prolonging of the life of these objects, with a view to preserving the historical evidence and transmitting the high quality information, historical and cul-

6. Proiect Romania - Ucraina: "Materiale noi durabile pentru conservarea si restaurarea obiectelor de patrimoniu din piele si pergament", 2008 -2009

• **Obiective:**

- pastrarea si/sau readucerea surselor de atestare istorica din piele si pergament intr-o forma cat mai apropiata de starea initiala;
- prelungirea la maximum posibil a vietii acestor obiecte, in vederea pastrarii marturiilor istorice si transmiterea informatiilor, mesajelor istorice si culturale, de inalta calitate, generatiilor viitoare.

tural messages to the future generations.
• **Results:** vegetal and combined tanning processes meant for durable skins of museum usage.

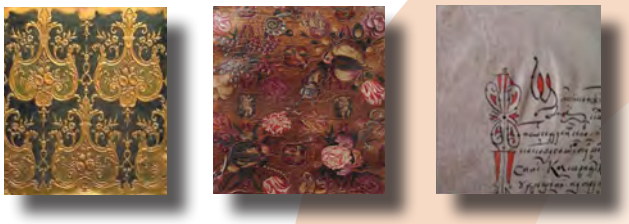
• **Rezultate:** procese de tabacire vegetala si combinata pentru piei durabile de uz muzeal.

7. Project Romania - Slovenia: "The improving of the environment indicators by using biotechnologies in the textile finishing" – acronym BIOTECHTEX, 2008-2009
• **Objective:**
- the improving of the environment indicators by using various biotechnologies for the preliminary preparing, dyeing and final finishing of the natural fiber textile materials
• **Results:**
- the study of the analysis specific methods;
- the study of the method of enzymatic activity determining

7. Proiect Romania - Slovenia: "Imbunatatirea indicatorilor de mediu prin utilizarea biotehnologiilor in finisarea textila" – acronim BIOTECHTEX, 2008-2009
• **Obiectiv:**
- imbunatatirea indicatorilor de mediu, utilizand diferite biotehnologii pentru pregatirea preliminara, vopsirea si finisarea finala a materialelor textile din fibre naturale
• **Rezultate:**
- studiul metodelor specifice de analiza;
- studiul metodei de determinare a activitatii enzimatice

8. Project Romania - Slovenia: The elaborating of certain spectroscopic methods meant for the qualitative control of the protean materials, 2008 -2009
• **Objective:** the developing of a methodology of nondestructive studying of the patrimony objects made of leather and parchment by way of correlating the analytic data to those obtained by spectral analysis, by using chemometric methods
• **Results:**
- the data base regarding analytic methods of studying the patrimony objects made of leather and parchment;
- the data base regarding spectral analysis methods;
- possibilities of applying the chemometric method to the nondestructive studying of the patrimony objects made of leather and parchment;
- database with leather historical objects.

8. Proiect Romania - Slovenia: Elaborarea unor metode spectroscopice pentru controlul calitativ al materialelor proteice", 2008 -2009
• **Obiectiv:** dezvoltarea unei metodologii de investigare nedistructiva a obiectelor de patrimoniu din piele si pergament, prin corelarea datelor analitice cu cele obtinute prin analiza spectrala, folosind metode chemometrice
• **Rezultate:**
- baza de date privind metode analitice de investigare a obiectelor de patrimoniu din piele si pergament;
- baza de date privind metode de analiza spectrala;
- posibilitati de aplicare a metodei chemometrice la investigare nedistructiva a obiectelor de patrimoniu din piele si pergament;
- baza de date cu obiecte istorice din piele.



Leather and parchment patrimony objects

6 Innovation Activity

INCDTP has gained a large experience in meeting the criteria of the Romanian industry, which has materialized into the large number of registered patents. Patents represent the practical application of the results obtained from the research & development activities.

Promoting innovation is a constant concern for the specialists of INCDTP, thus reflecting the fact that novelty offers inedited solutions and consequently fulfill the exigencies of the society.

In 2008, INCDTP has filed to OSIM (The State office for Inventions and Trademarks) a number of 15 inventions requests and has become the title holder for 11 patents.

As for awards and diplomas obtained from various scientific events, during 2008, the institute has gotten 8 national awards and 26 international. They are presented in the following:

INCDTP a acumulat o bogata experienta in realizarea cerintelor industriei romanesti, care s-a materializat in numarul mare de brevete inregistrate. Brevetele reprezinta punerea in practica a rezultatelor obtinute in urma activitatilor desfasurate in cadrul proiectelor de cercetare-dezvoltare.

Promovarea inovarii constituie o preocupare permanenta a specialistilor din INCDTP, atestandu-se faptul ca noutatea ofera solutii inedite si, in consecinta, raspunde exigentelor impuse de societate.

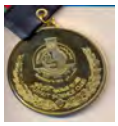
In anul 2008, INCDTP a inregistrat 15 cereri de inventii, la Oficiul de Stat pentru Inventii si Marci, si a devenit titularul a 11 brevete.

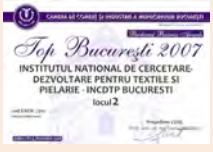
In ceea ce priveste diplomele si medaliile obtinute in cadrul manifestarilor stiintifice, in aceaiasi perioada s-au obtinut 8 premii pe plan national si 26 pe plan international.

Diplomele si medaliile obtinute, in urma participarii la manifestarile stiintifice interne si internationale sunt prezentate in continuare:

Nr. crt.	Denumirea proiectului	Salonul la care a participat(Sigla)	Premiul obtinut
1	Masina de impletit snur textil cu sectiune patrata	Salonul International de Inventii Geneva – Elvetia, 2008	Diploma si medalie de aur
			Diploma si medalie acordata de INCUBATOR OF INVENTIONS RUSIA
		Salonul International Jubiliar al Cercetarii, Inventiilor si Transferului Tehnologic – INVENTICA, Iasi, 2008	Diploma de excelenta si medalie de aur
		Al 6-lea Targ International de Inventii, idei noi, produse si tehnologii - ARCA 2008 –Zagreb	Diploma si medalie de aur

		Expozitia Internationala de Inventii, Cercetare Stiintifica si Tehnologii Noi - INVENTIKA - Bucuresti, 2008	Diploma de excelenta cu medalia INVENTICA  
2	Biomaterial cu continut de elastomeri, destinat ortopediei si procedeu de realizare a acestuia	Salonul International de Inventii Geneva – Elvetia, 2008 	Diploma si medalia de argint  
		Salonul International Jubiliar al Cercetarii, Inventiilor si Transferului Tehnologic – INVENTICA, Iasi, 2008 	Diploma de excelenta si medalie de aur   Diploma de excelenta si medalia Inventica  
3	Plasa chirurgicala armata, procedeu de realizare a plasei si de utilizare a acesteia	Expozitia Internationala de Inventii, Cercetare Stiintifica si Tehnologii Noi INVENTIKA, Bucuresti, 2008	Diploma si medalia de aur  
		Targul International de Inovatii Tehnologice – Brussels EUREKA 2008, Belgia 	Diploma si medalia de aur  

4	Costum de protectie impotriva caldurii si / sau focului	Expozitia Internationala de Inventii, Cercetare Stiintifica si Tehnologii Noi INVENTIKA, Bucuresti, 2008 – INVENTIKA –	Diploma si medalia de argint  
		Targul International de Inovatii Tehnologice –EUREKA, Brussels - Belgia, 2008 Eureka!	Diploma si medalia de argint  
5	Tesatura pentru conductele de ventilatie,incalzire si aer conditionat ale elicopterelor si tehnologie de realizare	Expozitia Internationala de Inventii, Cercetare Stiintifica si Tehnologii Noi INVENTIKA, Bucuresti, 2008 – INVENTIKA –	Diploma si medalia de argint  
		Targul International de Inovatii Tehnologice –EUREKA, Brussels - Belgia, 2008 Eureka!	Diploma si medalia de argint  
6	Suport textil ignifug	Expozitia Internationala de Inventii, Cercetare Stiintifica si Tehnologii Noi INVENTIKA, Bucuresti, 2008 – INVENTIKA –	Diploma si medalia de bronz  
7	Proteze vasculare si procedeu de obtinere	Targul International de Inventii din Orientul Mijlociu, editia a 2-a, organizat de Clubul de Stiinta din Kuweit KUWAIT SCIENCE CLUB	Diploma si medalia de aur   Premiul I si Diploma FIRI  

8	Sistem de parasute si platforma amortizoare cu aterizare la punct fix autodirijat cu ajutorul GPS	Expozitia Internationala de Inventii – INST, Taipei – Taiwan, 2008	Medalia de aur
9	Textile tehnice multifunctionale pentru imbracaminte de protectie	Salonul Cercetarii 2008 - EXCELENTA in CERCETARE	PREMIUL I 
10	Invelitori textile pentru protejarea culturilor agricole	Salonul Cercetarii 2008 - EXCELENTA in CERCETARE	PREMIUL I I I 
11	Aparat destinat determinarii rezistentei materialelor textile plane la penetrarea apei	Competitia “Premiul AGIR 2007”	Premiul AGIR 2007 
12	Institutul National de Cercetare-Dezvoltare pentru Textile si Pielarie	O.S.I.M. “Trofeul Creativitatii” 2008 -Sectiunea “Cercetare - Invatamant”	Locul I Institutul National de Cercetare- Dezvoltare pentru Textile si Pielarie 
13	Institutul National de Cercetare-Dezvoltare pentru Textile si Pielarie	Topul National al Firmelor – editia 2008	PRIMARIA SECTOR 3 - Locul I Institutul National de Cercetare-Dezvoltare pentru Textile si Pielarie  MUNICIPIUL BUCURESTI - Locul II Institutul National de Cercetare-Dezvoltare pentru Textile si Pielarie 

14	Produs si tehnologie de pretabacire a pieilor	Salonul International de Inventii Geneva – Elvetia, 2008	Diploma si medalia de argint 
		Salonul International Jubiliar al Cercetarii, Inventiilor si Transferului Tehnologic – INVENTICA, Iasi, 2008	Diploma de excelenta si medalia Inventica  
		Al 6-lea Targ International de Inventii, idei noi, produse si tehnologii - ARCA 2008 –Zagreb	Diploma si medalia de argint 
		Expozitia Internationala de Inventii, Cercetare Stiintifica si Tehnologii Noi INVENTIKA, Bucuresti, 2008	Diploma si medalie de bronz  
15	Procedeu si instalatie de valorificare a deseului seruitura de bovine, rezultat din procesul de prelucrare al pieilor de bovine	Expozitia Internationala de Inventii, Cercetare Stiintifica si Tehnologii Noi INVENTIKA, Bucuresti, 2008	Diploma si medalie de aur  
16	Aliaj polimeric pe baza de cauciuc etilen propilen terpolimer si polietilena de inalta densitate	Expozitia Internationala de Inventii, Cercetare Stiintifica si Tehnologii Noi INVENTIKA, Bucuresti, 2008	Diploma si medalie de bronz 

17	Procedeu de obtinere a aditivilor proteici si compozitie multifunctionala pentru nutritia, stimularea cresterii si protectia plantelor	Expozitia Internationala de Inventii, Cercetare Stiintifica si Tehnologii Noi INVENTIKA, Bucuresti, 2008 – INVENTIKA –	Diploma si medalie de bronz  
		Targul International de Inovatii Tehnologice –EUREKA, Brussels - Belgia, 2008 BRUSSELS Eureka!	Diploma si medalie de bronz  
18	Biocompost pe baza de deseuri organice (proteice si celulozice) pentru o agricultura competitiva	Salonul Cercetarii 2008 - EXCELENTA in CERCETARE 	PREMIUL I 
19	Cercetari privind realizarea de ecotehnologii, destinate sectorului de pielarie, care sa contribuie la protectia mediului, imbunatatirea calitatii vietii si cresterea competitivitatii tehnologice	Salonul Cercetarii 2008 - EXCELENTA in CERCETARE 	PREMIUL I I I 

STRATEGIC OBJECTIVS

The innovation activity is a key factor for competitiveness. Increasing the competitiveness of the national industry and assuring a rigorous economic development are the basis of the model of innovation based development, as an answer to the economic problems.

INCDTP's strategic directions for innovation are:

• Increasing the number of filed patents requests with al least 5%;

• Applying the modern systems for filing the invention patents;

• Continuing to promote in the business world, especially

OBIECTIVE STRATEGICE 2009

Activitatea de inovare este un factor-cheie al competitivitatii. Cresterea competitivitatii industriei nationale si asigurarea unei dezvoltari economice riguroase au la baza modelul de dezvoltare bazat pe inovare, ca raspuns la problemele economice.

Directiile strategice ale INCDTP in domeniul inovarii sunt:

• Cresterea numarului de cereri de brevete cu cel putin 5%;

• Aplicarea sistemelor moderne de inregistrare a brevetelor de inventie;

• Sustinerea promovarii in mediul de afaceri, in special in cadrul IMM-urilor, a avantajelor si profiturilor obtinute din

with the SME's, the advantages and the profit gained from the innovation activities;
• Facilitating the access of the economic companies, especially the SMEs, to the results of the scientific research;
• Deepening the collaboration with the OSIM specialists;
• Stimulating the practical application of the invention patents and the use of trademarks;
• Extending the identification of the innovation areas both within the R&D projects and with the SMEs
• Intensifying the innovation dissemination, organizing interactive events, such as: workshops, round tables, seminars etc)

INCDTP will promote in the Romanian business world, especially with the SME's, the advantages and the profit that can be obtained from the innovation activities.
Also, it will facilitate the access of the SMEs with a technological profile to specific information resources, by means of patent research, in order to stimulate research projects, innovation and technological development, as well as the integration of new technologies, that will promote the capitalization of the intellectual property, including the access to communitarian programs specific for the SMEs.
The strategy for developing the innovation activity within INCDTP will also rely on collaborating with regional/local networks for socio-economic sustainable development (including the research & development activity) and working with European networks (informing, of incubation of business and innovation etc), as well as stimulating the connections between the business world – financial branch included- and the scientific community.

activitatile inovative;
• Facilitarea accesului intreprinderilor, in special al IMM-urilor, la rezultatele cercetarii stiintifice;
• Intensificarea colaborarii cu specialistii OSIM;
• Stimularea aplicarii brevetelor de inventie si a folosirii marcilor inregistrate;
• Extinderea domeniului de identificare a inovarii, atat in cadrul proiectelor de CD, cat si in cel al IMM-urilor;
• Intensificarea diseminarii informatiilor, a organizarii de manifestari interactive (seminarii, mese rotunde, workshopuri etc.), stimularea si flexibilitatea fluxurilor informationale in domeniul proprietatii industriale.

INCDTP va sustine promovarea in mediul de afaceri romanesc, in mod special in cadrul IMM-urilor, a avantajelor si profitului ce pot fi obtinute ca urmare a activitatilor inovative.
Totodata, se va promova accesul IMM-urilor cu profil tehnologic la informarea specifica pe baza de brevete, in scopul stimularii proiectelor de cercetare, inovare si dezvoltare tehnologica si absorbtia de tehnologii noi, care sa promoveze valorificarea proprietatii industriale, inclusiv prin accesul la programele comunitare specifice sectorului IMM-urilor.
Strategia de dezvoltare a activitatii de inovare a INCDTP se va baza pe colaborari cu retele regionale/ locale de dezvoltare socio-economice durabila (inclusiv în ceea ce priveşte activitatea de cercetare-dezvoltare), si cu reţele europene (de informare, de incubare în inovare şi afaceri etc.), precum şi pe stimularea legăturilor dintre comunitatea de afaceri (inclusiv cea din domeniul finanţării) şi comunitatea ştiinţifică.

7 Standardization Activity

The standardization activity has an important contribution to the free circulation of goods, standards offering the means for the homogenous appreciation of the product and service quality, the guaranteeing and certifying of the product quality being achieved by the recognition at European and/or international level.

INCDTP supports the standardization activity for the textile and footwear industry domain by ensuring the carrying out of the secretariat and presidency activity for:

• the Technical Committee 103 – Textiles (that, at the international level, runs its course as part of the ISO TC 38 and TC 133 committees, and, at the European level, as part of the CEN, TC 248 and TC 222 committees);

• the Technical Committee CT 324 – Materials for floors and walls

• the Technical Committee 102 – Raw hide, finished leather, leather substitutes and analysis methods (corresponding to the ISO/TC 120 and CEN/TC 289)

• the Technical Committee 190 – Leather garments, furs, leather substitutes, leather technical articles and substitutes (a correspondent of the activity of the mirror committees ISO/TC 137, ISO/TC 216 and CEN/TC 309).

*

* *

The secretariats of the technical committees for standardization had as objectives:

- the establishing of the communication among the members of the Technical Committee and ASRO, that is the economic agents of the textile, leather and footwear industry;
- the establishing of priorities within the actual standardization program, by way of consulting the interested parties;
- the developing of the national standardization program with regard to the textile – leather field;
- the proposing of new research themes and the reviewing of the existing standards;
- the ensuring of the answer to the requests of the professional associations, the European and international standardization organizations.

*

* *

a) The activity of elaborating the standards

At the end of 2008 the patrimony of standards of CT 103, in the textile domain comprised 667 Romanian standards, out of which:

Activitatea de standardizare are o contribuție importantă la libera circulație a mărfurilor, standardele, oferind mijloacele pentru aprecierea omogenă a calității produselor şi serviciilor, garantarea şi certificarea calității produselor realizându-se printr-o recunoaştere pe plan european şi/sau internațional.

I.N.C.D.T.P. susține activitatea de standardizare pentru domeniul industriei textile şi de pielărie prin asigurarea desfăşurării activității secretariatelor şi preşedinției:

• Comitetului Tehnic 103 – "Textile", (care la nivel internațional se desfăşoară în cadrul comitetelor ISO TC 38 şi TC 133, iar la nivel european în cadrul comitetelor CEN, TC 248 si TC 222);

• Comitetului Tehnic CT 324 – "Materiale pentru pardoseli şi pereți";

• Comitetului Tehnic 102 – "Piei brute, piei finite, înlocuitori de piele şi metode de analiză" (corespunzător activității comitetelor oglindă din ISO/TC 120 şi CEN/TC 289);

• Comitetului Tehnic 190 – "Confecții din piele, blănuri, inlocuitori de piele şi articole tehnice din piele şi înlocuitori"(corespunzător activității comitetelor oglindă din ISO/TC 137 , ISO/TC 216 şi CEN/TC 309).

*

* *

În cadrul secretariatelor comitetelor tehnice de standardizare, s-a urmărit:

- stabilirea comunicării între membrii CT si ASRO, respectiv agenții economici din industria textilă, de pielărie şi încălțăminte;
- stabilirea priorităților în programul anual de standardizare, prin consultarea părților interesate;
- desfăşurarea programului național de standardizare pe domeniul textile-pielărie;
- revizuirea standardelor existente în patrimoniu;
- asigurarea raspunsului la solicitarile asociațiilor profesionale, organizațiilor de standardizare europene şi internaționale.

*

* *

a) Activitatea de elaborare a standardelor

La sfârşitul anului 2008, patrimoniul de standarde al CT 103, pe domeniul textile cuprindea 667 de standarde româneşti, din care:

• 328 Romanian original standards;
• 299 standards that adopted European standards;
• 40 standards that adopted international standards.

The patrimony of standards in the leather domain (CT 102) comprises 153 standards: 83 Romanian original standards; 57 standards that adopted European standards; 13 standards that adopted international standards.
The patrimony of standards in domain of leather (footwear) garment industry, CT 190 comprises 96 Romanian standards, out of which: 29 Romanian original standards, 65 standards that adopted European standards; 2 standards that adopted international standards.
In 2008 there were taken over 30 European standards, out of which 5 by translation, 10 by confirmation notification. Also, it was carried out the updating of the references of 19 standards and it was carried out the reviewing of 15 Romanian standards, by sectorial project financing: ,,The analysis of the present standards with a view to aligning their requirements to the technique development and the increasing of the standardization activity visibility at European level"(MEF).
By a financing granted by INCDTP and ASRO, a new edition of a national standards was elaborated.
b) The activity of elaborating the company standards
From the research-development activities of the institute, there resulted products, methods, new testing methodologies that were standardized by the elaboration of certain company standards. The elaborated (5) company standards are for the following domains: filtering products (for the medicine industry, chemical industry, metallurgic industry), agrotextiles, collagen products.
c) Expertise activities
INCDTP is a member of the Romanian Standardization Association, ASRO, and by its specialists, is involved in the activity of certain technical standardization committees from connected domains, out of which we mention:
• CT 154 – Machinery and equipment for the textile, leather and footwear industry
• CT 189 – Rubber technical articles
• CT 227 – Means of personal protection
• CT 338 – Adhesives
• CT 332 – Work group for ISO 26000, Social responsibil-

• 328 de standarde româneşti originale;
• 299 de standarde care au adoptat standarde europene;
• 40 de standarde care au adoptat standarde internaţionale.

Patrimoniul de standarde pe domeniul pielăriei (CT 102) cuprinde 153 de standarde: 83 de standarde româneşti originale; 57 de standarde care au adoptat standarde europene; 13 standarde care au adoptat standarde internaţionale.
Patrimoniul de standarde pe domeniul industriei de confecţii de piele (încălţăminte), CT 190, cuprinde 96 standarde române, din care: 29 standarde române originale; 65 standarde care au adoptat standarde europene; 2 standarde care au adoptat standarde internaţionale.
In anul 2008 s-au preluat 30 de standarde europene, din care 5 prin traducere, 10 prin file de confirmare. De asemenea, s-a efectuat actualizarea referinţelor la 19 standarde şi s-a realizat revizuirea a 15 standarde româneşti, prin finanţare pe proiectul sectorial: ,,Analiza fondului actual de standarde în vederea alinierii cerinţelor acestora la evoluţia tehnicii şi creşterea vizibilităţii activităţii de standardizare pe plan european"(MEF).
Prin finanţare asigurată de I.N.C.D.T.P. şi ASRO, a fost elaborată o nouă ediţie a unui standard naţional.
b) Activitatea de elaborare a standardelor de firmă
Din activitatile de cercetare-dezvoltare ale institutului au rezultat produse, metode, metodologii noi de testare care au fost standardizate prin elaborarea unor standarde de firma. Standardele de firma elaborate (5) se adreseaza urmatoarelor domenii: produse filtrante (pentru industria de medicamente, industria chimica, metalurgica), agrotextile, produse cu colagen.
c) Activităţi de expertiză
I.N.C.D.T.P. este membru al Asociatiei de Standardizare din Romania, ASRO, şi prin specialiştii săi este implicat în activitatea unor comitete tehnice de standardizare din domenii conexe, dintre care menţionăm:
• CT 154 - Maşini şi utilaje pentru industria textilă, de pielarie si incaltaminte;
• CT 189 – Articole tehnice din cauciuc;
• CT 227 – Mijloace individuale de protecţie;
• CT 338 – Adezivi,
• CT 332 - Grup de lucru pentru ISO 26000, Responsabilitate

ity.

Other actions carried out in 2008 are related to the promoting of the national point of view in the international and European standardization organizations. Thus, there were participations to the investigation-vote activity of the standard projects, effected as part of the mirror committees from CEN and ISO and there were evaluated:

- 20 ISO standards;
- 25 CEN standards.

*
* *

Having in view the importance of standards for the promotion of exports, industry and product modernization, as part of the textile, leather, footwear fairs, INCDTP specialists presented the problems of the standardization activity and the novelties in the field: TINIMTEX, CONRO, EURATEX.

On this occasion, the necessity of knowing the standards for product and service quality assuring, for the building of trust in the tests effected by the laboratories from Romania, for promoting the products on the European market, was emphasized.

There were carried out activities for attracting new members within CT 103 and for promoting the standards for the enterprises from the sector by dissemination actions of the information about the standardization activity, as part of the symposia organized by INCDTP and AGIR - FEPAIUS:

• 11.04.2008 AGIR with the presentation: 'The meeting with the education from Romania in the textile/leather domain".
• 18.06 – 20.06.2008: Workshop - „Textiles for the future" and „Modern finishing technologies in the leather industry".

d) International collaboration

INCDTP is a member of the Administration Board of ASRO, CEN/CENELEC, of which ASRO became a member in 2005, and has experts in the work groups of ISO/SC2WG12 and CEN, where INCDTP specialists participated to the elaboration of standards in the domains:

• the safety of children's clothing;
• sizes for garments;
• symbols for textile product care;
• cosmeto-textiles.

socială.

Alte acțiuni întreprinse în 2008 sunt legate de promovarea punctului de vedere național în organizațiile de standardizare internaționale şi europene. Astfel, s-a participat la activitatea de anchetă - vot a proiectelor de standarde realizate în cadrul comitetelor în oglindă de la CEN şi ISO şi s-au evaluat:

- 20 de standarde ISO;
- 25 de standarde ale CEN.

*
* *

Având în vedere importanța standardelor pentru promovarea exporturilor, modernizarea industriei şi a produselor, în cadrul târgurilor cu profil de textile, pielărie şi încălțăminte, specialiştii I.N.C.D.T.P. au prezentat problematica activității de standardizare şi noutățile în domeniu: TINIMTEX, CONRO, EURATEX.

Cu acest prilej, s-a subliniat necesitatea cunoaşterii standardelor pentru asigurarea calității produselor şi serviciilor, pentru realizarea încrederii în încercările efectuate de laboratoarele din România, pentru promovarea produselor pe piața europeană.

Au fost întreprinse acțiuni de atragere de noi membri în cadrul CT 103 şi de popularizare a standardelor pentru întreprinderile din sector, prin acțiuni de diseminare a informațiilor privind activitatea de standardizare în cadrul simpozioanelor organizate de I.N.C.D.T.P. şi AGIR - FEPAIUS:

• 11.04.2008 - AGIR cu prezentarea „Întâlnirea cu învățământul din România în domeniul textile/ pielărie";
• 18 – 20.06.2008: Workshop „Textile pentru viitor" şi „Tehnologii moderne de finisare în industria de pielărie".

d) Colaborarea internațională

I.N.C.D.T.P. este membru al Consiliului de Administratie al ASRO, al CEN/CENELEC în care ASRO a devenit membru în 2005 şi are experți în Grupele de lucru ale ISO/SC2WG12 şi CEN, calitate în care specialiştii institutului au participat la elaborarea standardelor pe domeniile:

• securitatea îmbrăcămintei pentru copii;
• măsuri pentru confecții;
• simboluri pentru întreținerea produselor textile;
• cosmeto-textile.

7 Standardization Activity

INCDTP organized the reunion of the CEN/TC 248 Technical Committee“ Textiles and Textiles Products”, on 8 – 12.09.2008, in Bucharest, for the first time in Romania. 42 experts from 10 European countries, including the committee president and secretary, participated in this reunion. The following work groups met in Bucharest:

• WG 9 “ Prioritization of research topics”;
• WG 19: “Characterization of fibres”;
• WG 20: “Safety of children’s clothing”;
• WG 26: “Textiles -Test methods for analysis of EC restricted substances”;
• WG 29: “Specifications and test methods for silk articles”;

The discussions from the 4 days of the symposium were foused on the priorities of the standardization activity for the textile domain, namely:

- the developing and maintaining of a set of standards for the textile products that should be in accordance with the market requirements;
- the elaboration of relevant standards for the industry;
- the collaboration with other international bodies for the coordination of the standardization programmes, with a view to eliminating the parallel efforts, possible conflicts and cost reducing.

STRATEGIC OBJECTIVES 2009

The main strategic objectives for the 2009 standardization activity refer to:

- the developing of national standard system for supporting further on the activity of the secretariats of the Technical Committees for Standardization CT 102, 103, 190, 324 and the participation of INCDTP specialists to the technical committees from the connected domains;

With this purpose, the taking over of 25 European and international was planned, by the translation method, as part of a project financed by the Ministry of Education and Research;

- the translation of the standards that were taken over by the confirmation notification method, in order to support the interested economic agents and especially SMEs. The Technical Committee 103„ Textiles” selected 1 standard that represents a priority for the textile sector and will be elaborated by the voluntary work of ASRO and INCDTP specialists;
- the reviewing of the Romanian original standards, in order

I.N.C.D.T.P. a organizat reuniunea Comitetului Tehnic CEN/TC 248 “ Textiles and Textiles Products”, în 8 - 12 septembrie 2008, la Bucureşti, pentru prima dată în România. La reuniune au participat 42 de experţi, inclusiv preşedintele şi secretarul comitetului, din 10 ţări europene. Următoarele grupe de lucru s-au întâlnit la Bucuresti:

• WG 9 “ Prioritization of research topics”;
• WG 19: “Characterization of fibres”;
• WG 20: “Safety of children’s clothing”;
• WG 26: “Textiles -Test methods for analysis of EC restricted substances”;
• WG 29: “Specifications and test methods for silk articles”;

Discuţiile purtate în cadrul celor patru zile ale simpozionului, s-au axat pe prioritățile activității de standardizare pentru domeniul textil, şi anume:

- dezvoltarea şi menținerea unui set de standarde pentru produsele textile care să fie în concordanță cu cerințele pieței;
- elaborarea de standarde relevante pentru industrie;
- colaborarea cu alte organisme internaționale pentru coordonarea programelor de standardizare, în scopul eliminării eforturilor paralele, a posibilelor conflicte, a reducerii costurilor.

OBIECTIVE STRATEGICE 2009

Principalele obiective strategice pentru activitatea de standardizare din 2009 se referă la:

- dezvoltarea sistemului de standarde naționale, prin susținerea în continuare a activității secretariatelor Comitetelor Tehnice de standardizare CT 102, 103, 190, 324 şi participarea specialiştilor INCDTP la comitetele tehnice din domeniile conexe;

În acest scop, s-a planificat preluarea a 25 de standarde europene şi internaționale prin metoda traducerii, în cadrul unui proiect finanțat de MEC;

- traducerea standardelor care au fost preluate prin metoda filei de confirmare, pentru a veni în sprijinul agenților economici interesați şi, în special, al IMM-urilor. Comitetul Tehnic 103„ Textile” a selecționat un standard care constituie prioritate pentru sectorul textil şi care va fi elaborat prin munca voluntară a specialiştilor ASRO şi I.N.C.D.T.P.;
- revizuirea standardelor românești originale, pentru a ține cont de progresul tehnic şi de noile standarde adoptate;

to take into account the technical progress and the new adopted standards;
- the participation of the institute experts to the activity of the technical committee CEN and ISO, with a view to elaborating European standards and promoting the cooperation with the international standardization organization;
- the participation and organization of information actions on standards, in collaboration with the professional associations and employers' organizations, as a means of responding to the problems caused by the trade globalization and liberalization, by presenting the standardization activity from the scientific sessions organized within the institute and in our country with the specialists from the textile and leather-footwear industry, in the specialty magazines.

- participarea experților institutului la activitatea comitetelor tehnice CEN şi ISO, în scopul elaborării de standarde europene şi promovarea cooperării cu organizația internațională de standardizare;
- participarea şi organizarea de acțiuni de informare asupra standardelor, în colaborare cu asociațiile profesionale şi organizațiile patronale, ca mijloc de a răspunde la problemele determinate de globalizarea şi liberalizarea comerțului, prin prezentarea activității de standardizare la sesiunile ştiințifice organizate în cadrul institutului şi în țară - cu participarea specialiştilor din industria textilă şi de pielărie-încălțăminte, şi în revistele de specialitate.

The Quality Management System from I.N.C.D.T.P. laboratories- SR EN ISO/ CEI 17025:2005

The main activities from the Quality Management domain, carried out in 2008, as part of the testing laboratories for the textile and leather products that activated within I.N.C.D.T.P consisted in:

- the monitoring of the quality system processes for identifying the improvement opportunities;
- the reviewing of the quality system documentation for the ensuring of a continuous efficiency of this;
- the maintaining of the laboratory reputation and the improving of its image by the employed personnel professionalism and the value that it adds in the relationships with the customers;
- the opening of the laboratory management for the approaching of new testing methods with a view to comply with the customers' needs;
- the creating of an adequate working environment for the laboratory employees.

The quality management system that is implemented and accredited within The Textile Product Testing, Control and Certifying Department, as well as within the physical-chemical and physical-mechanical testing laboratory from the Leather Branch is based on the SR EN ISO / CEI 17025: 2005 standard and is defined by a specific structure, personnel, documents, resources and plans of the activities related to the quality of tests and services accomplished according to the customers' requirements.

I.N.C.D.T.P. value system is based on integrity, professionalism, open-mindedness, communication, receptivity.

The accreditation of I.N.C.D.T.P. laboratories by the National Accreditation Body - RENAR, refers to 45 physical-chemical and physical-mechanical tests for leather, furs and footwear, and 40 physical-chemical, physical-mechanical and ecologic tests for textile products.

In 2008, as part of the supervision audit three new tests in the domain of textile product testing were accredited:

In 2008 the activity of settling the space meant for the microbiologic laboratory was finalized and stalks of various types of fungi were purchased. The purpose of the I.N.C.D.T.P. testing laboratories for 2009 is the developing of testing methods and services of a higher quality level, the fulfilling of customers' needs and the continuous improving of the SMC efficiency. In this sense, there were taken a series of

Sistemul de Management al Calitatii din laboratoarele I.N.C.D.T.P. - SR EN ISO/ CEI 17025:2005

Activitatile principale din domeniul Managementului Calitatii, desfasurate in anul 2008 in cadrul laboratoarelor de investigare a produselor textile si din piele ce activeaza in cadrul I.N.C.D.T.P., au constat in:

- monitorizarea proceselor sistemului calitatii pentru identificarea oportunitatilor de imbunatatire;
- revizuirea documentatiei sistemului calitatii pentru a se asigura continua adecvare si eficienta a acestuia;
- mentinerea reputatiei laboratorului si consolidarea prestigiului si imaginii sale prin profesionalismul personalului angajat si valoarea pe care o adauga in relatiile cu clientii;
- deschiderea managementului laboratorului pentru abordarea de noi metode de incercare in vederea satisfacerii solicitarilor clientilor;
- crearea unui climat corespunzator de lucru pentru angajatii laboratorului.

Sistemul de management al calității implementat si acreditat atat in cadrul Departamentului Testare Control Avizare Produse Textile cat si in cadrul laboratorului de testare fizico-chimica si fizIco-mecanica din cadrul Sucursalei de Pielarie, are la baza standardul SR EN ISO / CEI 17025 : 2005 si este definit de o structură specifică, de personal, documente, resurse şi planificari ale activităților legate de calitatea incercarilor şi serviciilor realizate conform solicitarilor clientilor.

Sistemul de valori al I.N.C.D.T.P. se bazeaza pe integritate, profesionalism, deschidere, comunicare, receptivitate.

Acreditarea laboratoarelor din I.N.C.D.T.P., de catre Organismul National de Acreditare – RENAR, se refera la 45 de incercari fizico-chimice si fizico-mecanice pentru piei, blanuri si incaltaminte si la 40 de incercari fizico-chimice, fizico-mecanice si ecologice pentru produse textile.

In anul 2008, in cadrul auditului de supraveghere au fost acreditate trei incercari noi in domeniul testarii produselor textile.

In anul 2008 a fost finalizata activitatea de amenajare a spatiului destinat laboratorului microbiologic si au fost achizitionate tulpini ale diverselor tipuri de fungi. Dezideratul Laboratoarelor de investigare din I.N.C.D.T.P. pentru anul 2009 este acela de a dezvolta metode de incercare si servicii de un nivel calitativ superior, de a satisface cerintele clientilor si a imbunatati continuu eficacitatea SMC. In acest sens, s-au luat o serie de masuri constructive, care sa duca la atingerea acestui obiectiv. Obiectivul strategic al politicii laboratorului in domeniul calitatii este ca, an de an, calitatea incercarilor efectuate si

constructive measures that should lead to the fulfilling of this purpose. The strategic objectives of the laboratory policy in the quality domain is that, year by year, the quality of the performed tests and services shall be continuously improved. In this sense, the quality and reliability of the performed tests is the preoccupation of each person from I.N.C.D.T.P.

The quality objectives were established as a result of the management analyses. These were expressed in measurable terms and focus on the following aspects:

- The continuous improving of the laboratory quality documents;
- The training of the laboratory personnel by participating to internal and external training courses;
- The evaluation of the customer satisfaction degree;
- The participation to international interlaboratory comparison schemes;
- Reduced number of complaints from the customers;
- The increasing of the market share.

*
* *

Quality Management System– SR EN ISO 9001

For fulfilling the customer's needs and for the accomplishing of competitive products within I.N.C.D.T.P., a Management Quality System according to SR EN ISO 9001-2001 was implemented and documented in the Research-Microproduction sector from the Textile Branch and in the Leather Production Department from the Leather-Footwear Branch.

The designing and implementing of this quality management system was determined by various necessities, specific objectives, supplied products, used processes, organization structure and the necessity of consequently supply products that shall fulfil the customer requirements and the regulated applicable requirements.

*
* *

Quality Management System from the Collagen Department of the Leather Branch, in conformity with SR EN ISO 9001:2001 and SR EN ISO 13485:2004

As part of the Collagen Research Department, medical bandages containing collagen extracted from the animal skin derma are manufactured as spongious matrices since 1975. PANCOL bandages (collagen sponges) and GEVICOL bandages (collagen sponges with gentian violet and xylene),

a serviciilor executate sa fie imbunatatita continuu. In acest sens, calitatea si fiabilitatea incercarilor executate reprezinta preocuparea fiecarei persoane din cadrul I.N.C.D.T.P.

Obiectivele calitatii au fost stabilite in urma analizelor efectuate de management. Acestea au fost exprimate in termeni masurabili si vizeaza urmatoarele aspecte:

- perfectionarea continua a documentelor calitatii laboratorului;
- perfectionarea personalului laboratorului prin participarea la cursuri de instruire interne si externe;
- evaluarea gradului de satisfactie a clientilor;
- participarea la scheme de comparari interlaboratoare internationale;
- numar redus de reclamatii de la clienti;
- cresterea cotei de piata.

*
* *

Sistemul de Management al Calitatii– SR EN ISO 9001

Pentru satisfacerea cerințelor clienților și pentru realizarea de produse competitive in cadrul I.N.C.D.T.P., a fost implementat si documentat un Sistem de Management al Calitatii conform SR EN ISO 9001-2001, in sectorul Cercetare-Microproductie din Sucursala de Textile si in Secția de Producție-Pielărie din Sucursala Pielarie-Incaltaminte.

Proiectarea si implementarea acestui sistem de management al calitatii a fost determinata de diverse necesitati, de obiective specifice, de produsele pe care le furnizeaza, de procesele utilizate, de structura organizatiei si de necesitatea de a furniza consecvent produse, care sa satisfaca cerintele clientului si cerintele reglementate aplicabile.

Activitățile desfășurate pentru a putea menține și îmbunătăți SMC s-au desfășurat conform programelor stabilite.

*
* *

Sistemul de Management al Calității din Departamentul Colagen din cadrul Sucursalei de Pielarie, conform SR EN ISO 9001:2001 și SR EN ISO 13485:2004

În cadrul Departamentului de Cercetare Colagen se fabrică din anul 1975 pansamente medicale pe bază de colagen extras din derma pielii animale, sub formă de matrici spongioase. Pansamentele PANCOL (bureți de colagen) și GEVICOL (bureți de colagen cu violet de gențiană și xilină), utilizate pentru tra-

used for treating skin burns, varicose ulcerations and escars and are patented products which are certified by the Ministry of Health, since 2002.

In 2008, the following were obtained:

- EC Type Examination Certificate no. 68 / 148 / 3330 / 08 in conformity with the requirements of Annex 3 of HGR 911/2005, which transposes the Directive 93/42/EEC regarding medical devices and the requirements of the Annex to HGR 382/2005, which transposes the Annex 2003/32/EC regarding the introduction of the detailed specifications for the medical devices produced by the utilization of animal origin tissues (for PANCOL collagen bandages);
- EC Inspection Certificate no. 69 / 148 / 3330 / 08 in conformity with Annex 4 of HGR 911/2005 which transposes the Directive 93/42/EEC regarding the medical devices (for GEVICOL collagen bandages).

From the quality management system point of view, the system in conformity with SR EN ISO 9001:2001 will be transposed in conformity with the new referential for medical devices SR EN ISO 13485:2004.

*
* *

PRODUCT CERTIFYING BODIES – SR EN 45011: 2001

As part of INCDTP, due to the multitude of requirements of the producers from the domains of textiles, leather, footwear, rubber and plastic masses, for rendering the Conformity Certificate for the products tested within the physical-mechanical and physical-chemical testing laboratories, the setting-up of the Product Certifying Bodies was necessary. I.N.C.D.T.P. main objective is to develop the product and service certifying activity and to make the trade marks « CER-TEX » and « CER-PI » become well-known at national and international level in the textile-garment and leather-footwear domain.

The Product Certifying Bodies have as activity object the certifying of the conformity of products from the domains of textile-garment, leather-footwear and consumer goods made of rubber and plastics with the reference specifications, with a view to improving their quality, and competitiveness increasing at national and international level, finding new markets, consumer and environment protection.

tarea arsurilor pielii, a ulcerelor varicoase şi a escarelor sunt produse brevetate şi avizate de Ministerul Sănătăţii din anul 2002.

În anul 2008, s-au obţinut:

- Certificatul EC de examinare de tip nr. 68 / 148 / 3330 / 08 conform cerinţelor Anexei 3 a HGR 911/2005 care transpune Directiva 93/42/EEC privind dispozitivele medicale şi a cerinţelor Anexei la HGR 382/2005 care transpune Directiva 2003/32/EC privind introducerea specificaţiilor detaliate pentru dispozitive medicale produse prin utilizarea ţesuturilor de origine animală (pentru pansamentele colagenice PANCOL);
- Certificatul de verificare EC nr. 69 / 148 / 3330 / 08 conform Anexei 4 a HGR 911/2005 care transpune Directiva 93/42/EEC privind dispozitivele medicale (pentru pansamentele colagenice GEVICOL).

Din punct de vedere al sistemului de management al calităţii, sistemul conform SR EN ISO 9001:2001 va fi transpus în conformitate cu noul refernţial pentru dispozitive medicale SR EN ISO 13485:2004.

*
* *

Organismele de certificare produse – SR EN 45011: 2001

În cadrul INCDTP, datorită multitudinii de cerinţe ale producătorilor din domeniile textile, confectii, pielărie, încălţăminte, cauciuc şi mase plastice, de acordare a certificatului de conformitate pentru produsele lor analizate în cadrul Laboratoarelor de încercări fizico-mecanice şi fizico-chimice, a fost necesară înfiinţarea Organismelor de Certificare Produse. Obiectivul prioritar al I.N.C.D.T.P. este de a dezvolta activitatea de certificare a produselor şi serviciilor şi a face ca marcajul « CER-TEX » si « CER-PI » să devină recunoscute pe plan naţional şi internaţional în domeniul textile-confectii si pielărie încălţăminte.

Organismele de Certificare Produse au ca obiect de activitate certificarea conformităţii produselor din domeniile textile-confectii, pielărie-încălţăminte şi bunuri de consum din cauciuc şi mase plastice cu specificaţiile de referinţă, în vederea îmbunătăţirii calităţii acestora şi creşterea competitivităţii pe piaţa internă şi externă, cuceririi de noi pieţe de desfacere, protecţiei consumatorului şi a mediului înconjurător.

În prezent se deruleaza etapele de evaluare a documentelor in scopul certificarii.

INSPECTION BODIES – SR EN ISO 17020:2005

For creating a legislative frame as regards the examination activity of the products from the domains of textiles, medical articles, leather, footwear, consumer goods made of rubber, in I.N.C.D.T.P. there were set-up the Inspection Body for Leather and Footwear Products - „INS - PI", and the Inspection Body for Textile Products– „CERTINSPECT", for which Quality Management Systems were designed and implemented, according to SR EN ISO 17020:2005.

I.N.C.D.T.P. Inspection Bodies are C-body type, which can carry out first and second inspections, meaning for the organization it belongs to, as well as for foreign organizations.

*
* *

Environment Management System – SR EN ISO 14001:2005

For the ensuring of a sustainable environment, I.N.C.D.T.P. develops activities for preventing the pollution and protection activities, in conformity with the specific legislation.

In this sense, the following objectives were fulfilled:

- the obtaining of the Acceptance for discharging the waste waters into the urban sewerage system;
- the assembling and putting into service of the waste water treatment plants;
- the monitoring of the emissions in air and water;
- the delivery for the recovery/final discharging of waste;
- the obtaining of the environment Authorization for the headquarters from Lucretiu Patrascanu and Ion Minulescu streets;
- the rehabilitation of the process steam, thermal, natural gas, cold water systems ;
- the reducing of the utility consumption by the acquisition, assembling and putting into service of a process steam boiler of 1 ton/hour;

Since 2006, in I.N.C.D.T.P. the Environment Management System is implemented and certified in conformity with SR EN ISO 14001:2005 standard.

As a result of the supervision audit, after a period of time of 18 months from the rendering of the Environment Management System, ASRO SMM-OC Certifying Body decided the maintaining of the Environment Management System certifying in I.N.C.D.T.P. and gave the Certificate no. 10A/08.11.2006 with the trade mark ASRO SMM-OC and RvA for the domain: 7219 – Research-Development in other natural sciences and engineering in the domains of woven and nonwoven, knitted technical articles, textile product finishing.

Organismele de inspectie – SR EN ISO 17020:2005

Pentru crearea unui cadru legislativ în ceea ce priveşte activitatea de examinare a produselor din domeniul textile si articole medicale, pielărie, încălţăminte, bunuri de consum din cauciuc, în I.N.C.D.T.P. au fost înfiinţate Organismul de Inspecţie pentru produsele pielarie si incaltaminte - „INS - PI", si Organismul de Inspecţie pentru produse textile – „CERTINSPECT", pentru care au fost proiectate şi implementate Sisteme de Management al Calităţii, conform SR EN ISO 17020:2005.

Organismele de Inspecţie din cadrul I.N.C.D.T.P. sunt organism de tip C, care pot efectua inspecţii de primă şi secundă parte, adică atât pentru organizaţia din care face parte, cât şi pentru organizaţii externe.

*
* *

Sistemul de Management de Mediu – SR EN ISO 14001:2005

Pentru asigurarea unui mediu inconjurator durabil, I.N.C.D.T.P. desfasoara activitati de prevenire a poluarii si protectie, in conformitate cu legislatia specifica.

In acest sens au fost indeplinite urmatoarele obiective:

- obtinerea Acceptului de evacuare a apelor uzate in canalizarea urbana;
- montarea si punerea in functiune a statiilor de epurare a apelor uzate;
- monitorizarea emisiilor in aer si apa;
- predarea in vederea valorificarii/eliminarii finale a deseurilor;
- obtinerea Autorizatiilor de mediu pentru sediile din Lucretiu Patrascanu si Ion Minulescu;
- reabilitarea retelelor de abur tehnologic, termice, de aze naturale, de apa rece;
- reducerea consumului de utilitati prin achizitionarea, montarea si punerea in functiune a unui cazan de abur tehnologic de 1 tona/ora;

Din anul 2006, in I.N.C.D.T.P. este implementat si certificat Sistemul de Management de Mediu conform standardului SR EN ISO 14001:2005.

Ca urmare a auditului de supraveghere, la 18 luni de la acordarea certificarii Sistemului de Management de Mediu, organismul de certificare ASRO SMM-OC a decis mentinerea certificarii Sistemului de Management de Mediu in I.N.C.D.T.P. si a eliberat Certificat nr. 10A/08.11.2006 cu marca ASRO SMM-OC si RvA pentru domeniul: 7219 – Cercetare-dezvoltare in alte stiinte naturale si inginerie in domeniul articolelor tehnice tesute si netesute, tricotate, finisare produse textile.

9 Production, services and marketing activity

INCDTP main activity – Research-Development – is coupled with targeted field related production and services activities (namely scientific-technical consultancy and analyses).
In 2008, considering the turnover structure:
- production activity accounted for 8%, and
- services activity accounted for 7%.

1. Production Activity
The main directions maintained in the production activity, both in the textiles sector, and in the leather sector were:

• implementation into production of positive results achieved within the research activity;
• design and manufacture of technically employed products meant for the businesses performing industrial activities;
• design and manufacture of orthopedic products, matching the category of health;
• providing services of warping, weaving, finishing, skins and leather treatments, high finishes – for the small companies and entrepreneurs having available the necessary material base;
• logistics assuring for the SMEs launch and development in the textile and leather field;
• managerial and logistic support for the ones centered on addressing new products and interested in the use of new raw materials , especially for the high finishing of textiles and leathers.

x
x x

Priority fields of interest:
• rubber and plastics industry
• tyre reinforcements and belt carriers or conveyers
• supports for coats with pre-set properties
• supports for composite and high performance products

• chemical industry and environmental protection
• filtering woven fabrics for industrial processes
• filtering woven fabrics for industrial effluents
• filtering woven fabrics for household wastewaters

Destination of the main products achieved:
• woven and nonwoven products
• filters for industrial powders
• filters for lacquers and varnishes
• phonic-absorbers for industrial and automotive applications
• filters for the chemical industry

Activitatea principala, de cercetare-dezvoltare, desfasurata de I.N.C.D.T.P, este completata cu activitati conexe de productie si servicii (analize si consultanta tehnico-stiintifica).
In anul 2008, structura cifrei de afaceri cuprinde:
- activitatea de productie - cu o pondere de 8%;
- activitatea de servicii - cu o pondere de 7%.

1. Activitatea de Productie
In activitatea de productie, atât in sectorul textile, cât si in sectorul pielarie - au fost mentinute urmatoarele directii principale:
• implementarea in productie a rezultatelor pozitive, obtinute in activitatea de cercetare;
• proiectarea si realizarea de produse cu destinatie tehnica pentru agentii economici care presteaza activitati industriale;
• proiectarea si realizarea de produse ortopedice, cu aplicatie in domeniul sanatatii;
• servicii de urzire, tesere, finisare, tratarea pieilor, finisare superioara - pentru societatile comerciale si micii intreprinzatori, care nu dispun de baza materiala necesara;
• asigurarea cadrului logistic pentru initierea si dezvoltarea unor IMM-uri in domeniul textile-pielarie;
• sprijin managerial si logistic in abordarea de noi produse sau utilizarea de noi materii prime, in special pentru finisarea superioara a textilelor si pieilor.

x
x x

Domeniile de interes prioritar au fost:
• industria de cauciuc si mase plastice
• armaturi pentru anvelope si benzi transportoare;
• suporturi pentru pelicule cu proprietati prestabilite;
• suporturi pentru produse compozite si produse preformatate;

• industria chimica si protectia mediului
• tesaturi filtrante pentru procese industriale;
• tesaturi filtrante pentru efluientii industriali;
• tesaturi filtrante pentru apele menajere;

Principalele produse au avut ca destinatie:
• produse tesute si netesute
• filtre pentru prafuri industriale;
• filtre pentru lacuri si vopseluri;
• fonoabsorbante pentru aplicatii industriale si automobile;
• filtre pentru industria chimica;

• Products directed to special applications
• equipments for aeronautics, optics and nuclear industry;
• suspending ropes, twines, and various other braidings;
• woven fabrics for inflatable balloons, parachutes, paragliders and other products for leisure activities and sports;
• products for the medical and prosthetic field
• non-resorbable surgical thread
• meshes for hernia and eventrations
• diverse prostheses

• Products in the rubber-leather field
• PVC and TR rubber soles for footwear
• Collagen bandages
• Patterns of boot-lasts, insoles, CIF printings, bellows for aeronautics

• Skins processing and leather products manufacture
• Tanning, poly-functional treatments
• Soakage into products for the purpose of gathering properties useful in special applications
• Rehabilitation and preservation of leather products

• Other fields of interest
• Individual protective equipments
• Leather protective covers and armatures for military logistics and industrial equipments
• Products for entertainment, leisure activities and sports

• Services
• Manpower for the manufacture of certain products or details of these, including preparation, weaving, leather cleaning (de-hairing, fleshing) for further tanning, tanning, complex finishing
• Consultancy and technical expertise in the textiles-leather field
• Logistics support for the businesses/companies

MATERIAL BASE
The production and services activities and the practical experimentation activity within the research projects equally resort to the same material base. This includes equipments specific to each activity stage, allowing to carry out all the processes supposed by the manufacture/delivery of products/services.
Considering the high focus on harmonization to European environmental norms, the production activity is continuously up-graded by:
- permanently addressing new technologies,
- reducing the environmental impact,
- occupational health protection and security increase,

• Produse pentru aplicatii speciale
• echipamente pentru industria aeronautica, optica si nucleara;
• suspante, snururi, impletituri diverse;
• tesaturi pentru baloane gonflabile, parasute, parapante si alte produse pentru sport si timp liber;
• produse cu aplicatii in domeniul medical si ortetic
• ata chirurgicala ne resorbabila;
• plase pentru hernii si eventratii;
• proteze diverse;

• Produse in domeniul cauciuc-piele
• talpi pentru incaltaminte din PVC si cauciuc TR;
• pansamente colagenice,
• modele de calapoade, branturi, imprimari CIF, burdufuri pentru aeronautica.

• Prelucrare piei si realizare produse din piele
• tabacire, tratamente polifunctionale;
• impregmare cu produse pentru conferirea de proprietati utile in aplicatii speciale;
• conservarea si reabilitarea de produse din piele;

• Alte domenii de interes
• echipamente de protectie personal;
• huse de protectie si armaturi din piele, pentru tehnica de lupta si echipamente industriale;
• produse pentru sport, timp liber si agrement;

• Servicii
• manopera pentru realizarea de produse sau detalii ale acestora, incluzand preparatie, tesere, argasire, tabacire, finisare complexa;
• consultanta si expertiza tehnica in domeniul textile-pielarie;
• sprijin logistic agentilor economici.

BAZA MATERIALA
Activitatea de productie, servicii si experimentarile practice din cadrul proiectelor de cercetare, utilizeaza aceiasi baza materiala. Aceasta cuprinde echipamente specifice fiecarei activitati, care permit efectuarea tuturor proceselor ce intervin in realizarea produselor/serviciilor.
Avand in vedere alinierea la normele europene de mediu, activitatea de productie se perfectioneaza continu prin:
- abordarea de noi tehnologii,
- reducerea impactului asupra mediului,
- protejarea sanatatii personalului si cresterea securitatii muncii,

- continuous monitoring of processes performed.

These preoccupations concretized in:
- the ability to cover some niche fields;
- the manufacture of some high performance short series or customized products;
To reach these objectives, support activities have been unfolded to put into practice the following:
- equipping with weaving machines for technical articles, capable of performing weaves with up to 600g/mp in mass, with automate control for the process parameters,
- number increase of machines, aimed to diversify the offer of commodity woven fabrics,
- equipping with fabric finishing installations to confer the weaves poly-functional characteristics, according to market requests;
- equipping with industrial sewing machines for heavy technical articles made of textile fabrics and leather;

"Picanol" weave machine

- injection machines for bi-color products, and for blends with various densities;
- autoclave, stamping machine, dyeing box.

The upgrading of material base technical level was possible this year through:
• the launch into operation of the cleaning stations for the wastewaters generated by the manufacturing process,
• the modernization of the technological steam production and distribution installation, useful for the textile finishing,
• the rehabilitation of water supply piping, needed for the textile finishing technological process
Production and services activities course was also subjected to the certification process.

Products applied within economical operators facilities
In 2008, a number of 15 new textile articles and injection-formed products were performed for various businesses: knitted, woven, nonwoven products, new sole patterns.
The main companies, beneficiaries of these products resulted from the researches completed, are: Uranium National Company, S.C. Nuclearelectrica S.A., Coal National Company, S.C. Oltchim S.A., S.C. PIELOREX S.A. Jilava, S.C. MEDIIMPACT S.A. Bucharest, S.C. TAMIV S.A. Brasov

- monitorizarea continua a proceselor.

Aceste preocupari s-au materializat prin:
- acoperirea unor domenii de nisa;
- realizarea unor produse de inalta performanta, de serie scurta sau personalizate.
Pentru atingerea acestor obiective, au fost realizate urmatoarele activitati-suport:
- dotarea cu masini de tesut pentru articole tehnice, capabile sa realizeze tesaturi cu masa pana la 600 g/mp, in regim de gestiune automata a parametrilor de proces;
- marirea parcului de masini pentru diversificarea ofertei de tesaturi pentru bunuri de larg consum;
- dotarea cu instalatii de finisare a tesaturilor, pentru conferirea de caracteristici polifunctionale, in acord cu cerintele pietei;
- dotarea cu masini de cusut industriale pentru articole tehnice grele, din tesaturi si piele;

- masini de injectie pentru produse bicolore si din amestecuri cu densitati diferite;
- autoclava, masina de stantat, cabina de vopsit.

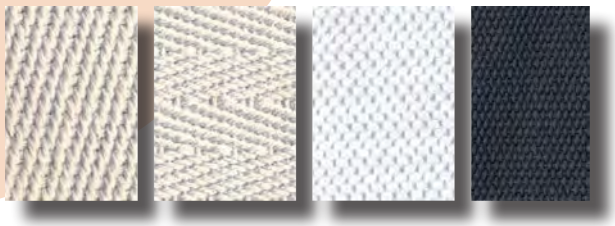
Ridicarea nivelului tehnic al bazei materiale a fost posibila in acest an, prin:
• punerea in functie a statiilor de epurare a apelor rezultate in procesul tehnologic;
• modernizarea instalatiei de producere si distribuire a aburului tehnologic, pentru finisarea textila;
• reabilitarea retelei de distribuire a apei necesara procesului tehnologic din finisajul textil.
Desfasurarea activitatii de productie si servicii a fost supusa procesului de certificare.

Produse aplicate la operatorii economici
In anul 2008, au fost realizate pentru diferiti agenti economici un numar de 15 articole textile noi si produse obtinute prin injectie: produse tricotate, tesute, netesute, modele noi de talpi.
Principalii agenti economici beneficiari ai acestor produse, rezultate in urma cercetarilor incheiate, sunt: C.N. a Uraniului, S.C. Nuclearelectrica S.A., C.N. a Huilei, S.C. Oltchim S.A., S.C. PIELOREX S.A. - Jilava, S.C. MEDIIMPACT S.A. - Bucuresti, S.C. TAMIV S.A. - Brasov.

Technologies applied within economical operators facilities
There has been elaborated and applied at economical operators a number of 11 technologies: knitting, finishing, mechanical processings, leather treatment technologies.

Product: Multi-layer fabric for belt carriers and driving belts

Raw material: filament yarns PA6;
Mass: 400g/sqm;
Width: 140 cm;
Thickness: 0.45 mm;
Finishing: Adhering and thermal-setting treatments;
Beneficiary: SC TINA PROD SRL



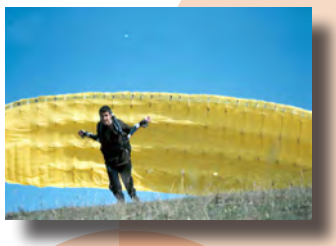
Belt carriers

The product embeds originality elements by means of raw material used within a structure able to allow the efficient uptake of the rubber and synthetic polymers blend.
The technology used assures a surface pervious, so as to facilitate the formation of stable bonds in the rubbing, vulcanization, calendering stage, thus providing, at the same time, a reduced and even elongation.

Product: Fabrics for inflatable balloons, parachutes, paragliders, and products for leisure activities and sports

Raw material: filament yarns PA6.6 or polyester;
Mass: 40g/sqm-80 g/sqm;
Width: 140 cm-200 cm;
Thickness: 0.1-0.15 mm;
Finishing: Thermal-setting, water-proofing, antistatic treatments;
Beneficiary: SC Condor SA

These products are meant to replace the old categories of products made of natural fibers, with inferior physical-mechanical parameters, by products with performance raw materials, made with the help of modern technologies.
The manufacture of these fabrics on highly performance machineries within INCDTP allowed the achievement of some superior quality products, comparable with similar products now marketed on global level.
The originality elements, which represented the basis of these products, led to another gain – diploma and medals granted in the profile invention saloons.



Paraglider

Tehnologii aplicate la operatori economici
Au fost elaborate si aplicate la agentii economici un numar de 11 tehnologii de tricotare, finisare, prelucrare mecanica, tratare a pieilor.

Produs: Tesatura pentru realizarea de benzi transportoare si curele de antrenare tip multistrat

Materia prima: fire filamentare PA6;
Masa: 400 g/mp;
Latime: 140 cm;
Grosime: 0,45 mm;
Finisare: Tratamente de aderizare si termostabilizare;
Beneficiar: SC TINA PROD SRL.

Produsul inglobeaza elemente de originalitate prin materia prima folosita in cadrul unei structuri care permite ancorarea eficace a amestecului de cauciuc si polimeri sintetici.
Tehnologia utilizata asigura o suprafata receptiva formarii de legaturi stabile in etapa de cauciucare, vulcanizare, calandrare, asigurind in acelasi timp o alungire redusa si uniforma.

Produs: Tesaturi pentru baloane gonflabile, parasute, parapante, produse pentru sport si timp liber

Materia prima: fire filamentare PA6.6 sau poliester;
Masa: 40 g/mp - 80 g/mp;
Latime: 140 cm - 200cm;
Grosime: 0,1 - 0,15 mm;
Finisare: tratamente de termostabilizare, hidrofobizare, antistatizare;
Beneficiar: S.C. Condor S.A.

Aceste produse sunt destinate inlocuirii vechilor categorii de produse, realizate din fibre naturale cu parametrii fizico-mecanici inferiori, cu produse din materii prime performante realizate prin tehnologii moderne.
Realizarea acestor tesaturi pe utilajele de mare performanta, din dotarea I.N.C.D.T.P., a permis obtinerea unor produse de calitate superioara comparabile cu produsele similare aflate in prezent pe piata mondiala.
Elementele de originalitate care au stat la baza realizarii acestor produse au determinat obtinerea de diplome si medalii la saloanele de inventica pe profil.

Product: Ropes, twines and various braidings
Raw material: filament yarns PA6.6, polyester, para-aramid;
Mass: 2 g/m-8 g/m;
Diameter: 1mm - 4mm;
Finishing: thermal-setting, water-proofing, antistatic treatments;
Beneficiary: SC Condor SA;

This category of products, as they are processed, represents a step foreword in the manufacture of products directed to applications, such as - military logistics, leisure activities and sports, being meant to replace similar products imported from abroad and very proper for promotion.

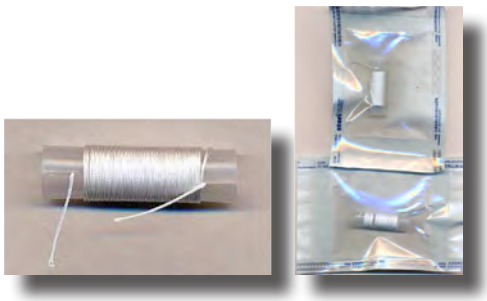
Parachute ropes

Produs: Suspante, snururi, impletituri diverse
Materia prima: fire filamentare PA6.6, poliester, paraaramida;
Masa: 2 g/m - 8 g/m;
Diametru: 1 mm – 4 mm;
Finisare: tratamente de termostabilizare, hidrofobizare, antistatizare;
Beneficiar: S.C. Condor S.A.

Aceasta categorie de produse contribuie la realizarea produselor pentru tehnica militara, sport si timp liber, fiind destinate inlocuirii produselor similare provenite din import si promovarii.

Product: Non-resorbable surgical thread
Raw material: polyester filament yarns
Diameter: 0.1mm-0.45mm;
Number of yarns in the interweave: 6-8;
Yarn length per format: 1.4m;

Product is executed on specially conceived machinery, and is available in various length densities.
The complex finishing treatments applied assure the microbiological and biological characteristics imposed by the application field. Products are delivered sterile.

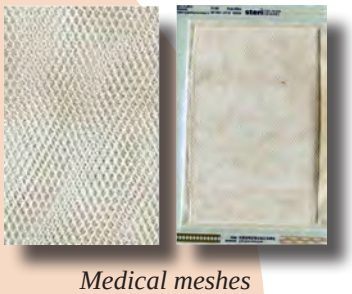


Non-resorbable surgical thread

Produs: Ata chirurgicala neresorbabila
Materia prima: fire poliesterice, filamentare
Diametrul: 0,1 mm - 0,45 mm;
Numar fire in impletitura: 6 - 8;
Lungime de fir pe format: 1,4 m.

Produsul este realizat prin impletire pe utilaje special concepute, fiind disponibil in diferite densitati de lungime. Tratamentele complexe de finisare aplicate asigura caracteristicile microbiologice si cele biologice, impuse de domeniul de utilizare. Produsele sunt livrate sterile.

Product: Meshes for hernia and eventrations
Product executed by knitting polyester filament yarns
Currently traded dimensions:
30 x 30 cm
25 x 25 cm
20 x 20 cm
15 x 15 cm
10 x 10 cm
Treatments: irradiation sterilized by CO60 radiations
Beneficiaries: hospital units



Medical meshes

Produs: Plase pentru hernii si eventratii
Produs realizat prin tricotare din fire filamentare de poliester
Dimensiunile comercializate in mod curent:
30 x 30 cm;
25 x 25 cm;
20 x 20 cm;
15 x 15 cm;
10 x 10 cm.
Tratamente: sterilizare prin iradiere cu radiatii CO60
Beneficiari: unitatile din reteaua sanitara

Vascular prostheses

Product: Woven vascular prostheses

Products achieved by new weaving and formatting technologies, meant for the use in arterial surgery or by-pass, for aneurism or occlusive disorders of aorta, peripheral or vascular arteries, except the coronaries.

Raw material: Polyester

Products are achieved by means of weaving technologies on adequately tuned machines, in-house design in collaboration with the global leader in the field, Jakob Müller AG – Switzerland.

Typo-dimensional range: linear, bifurcate.

Products are delivered sterile.

Beneficiaries: hospital units

Produs: Proteze vasculare tesute

Produse obtinute prin tehnologii noi de tesere si formatare, destinate utilizarii in chirurgie arteriala sau de by-pass, in afectiuni anevrismale sau ocluzive ale aortei, arterelor periferice sau arterelor vasculare cu exceptia coronarelor.

Weaving machines

Materia prima: poliester

Produsele sunt obtinute prin tehnologii de tesere pe masini de tesut realizate in conceptie proprie si in colaborare cu liderul mondial in domeniu, firma Jakob-Muller-Elvetia.

Gama tipodimensionala: lineare, bifurcate.

Produsele se livreaza sterile.

Beneficiari: unitati din reteaua sanitara.

Product: Protective suit for electricians – Md CERTEX – CLEAT

Application field: energetic industry – works performed under high voltage

EIP (individual protective equipment) formed of a shirt and overall (breast and back plate) made of combinations of material – resistant to limited flame propagation (50% Kermel / 50% Rhovyl fabric) and resistant to limited flame propagation plus to the probable impact of mechanical risks, respectively wearing, cutting, piercing (50% Twaron / 50% Rhovyl fabric).

Protective suit

Raw material: fabric made of 50% Kermel fibers / 50% Rhovyl fibers

fabric made of 50% Twaron fibers / 50% Rhovyl fibers

Fabric mechanical characteristics:

• breaking resistance: min. 1000 N in warp
min. 600 N in weft

• tearing resistance: min. 50 N

Protective characteristics against heat and/or fire:

• resistance to limited flame propagation

- average time of flame persistence: 0 s
- average time of post-incandescence: 0 s

Potential users: building and construction workers, aerial electrical lines assembling and maintenance

Produs: Costum de protectie pentru electricieni – Md CERTEX - CLEAT

Domeniul de aplicabilitate: industria energetica – lucrari sub tensiune

EIP compus din bluza si pantaloni cu pieptar fata/spate din combinatii de materiale cu caracteristici de rezistenta la propagarea limitata a flacarii (tesatura 50% Kermel/50% Rhovyl) si materiale cu rezistenta la propagarea limitata a flacarii si la actiunea riscurilor mecanice: uzura, taiere, agatare (tesatura 50% Twaron/50% Rhovyl).

Materia prima: tesatura din 50% fibre Kermel

tesatura 50% fibre Twaron/50% fibre Rhovyl

Caracteristici mecanice tesatura:

• rezistenta la rupere: min. 1 000 N în urzeală
min. 600 N în bătătură

• rezistenta la sfasiere: min. 50 N

Caracteristici de protectie impotriva caldurii si/sau focului:

• rezistenta la propagarea limitata a flacarii

- durata medie de persistenta a flacarii: 0 s
- durata medie de post-incandescenta: 0 s

Potentiali utilizatori: lucratori in constructii, montaj, intretinere linii electrice aeriene.

Product: Filtering materials

Executed by means of modern technologies for the weaving and finishing of polyester yarns with high tenacity, abrasion

Produs: Materiale filtrante

Realizate prin tehnologii moderne de tesere si finisare din fire poliesterice cu tenacitate ridicata, rezistente la abraziune

resistance and strength to intense dynamic stresses.
Main characteristics:
Mass: 230 g/sqm;
Permeability: 300l/sqm/sec;
Breaking force: 500N / 5cm
Treatments: thermo-setting, water-proofing;
Beneficiaries: chemical industry, iron and steel, building and construction materials

si solicitari dinamice intense.
Principale caracteristici:
Masa: 230 g/mp
Permeabilitate: 300 l/mp/sec
Sarcina de rupere: 500 N/5cm
Tratament: termostabilizare, hidrofobizare
Beneficiari: industria chimica, metalurgica, a materialelor de constructii.

Filtering materials

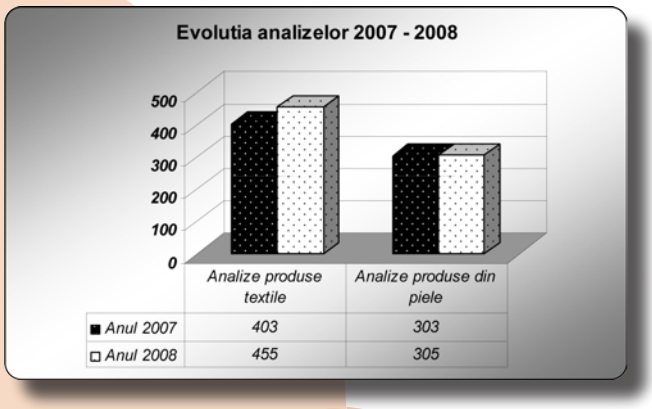
2. Services Activity

During the 10 years of activity, as accredited bodies, the investigation laboratories within INCDTP successfully answered to the requests of leather and textile products testing.
The accredited trials for textile products testing (certificate 014–L), 40 in number, are conducted in standard acclimatized atmosphere, by the specialized personnel using performance equipments and observing the international standards in force.
For the leather products testing, INCDTP makes available to its beneficiaries the Trials Laboratory situated at its Leather Subsidiary, accredited since 1997 (certificate 112–L), which performs some 45 physical-mechanical trials and chemical analyses for skins, hides and leathers, furs, footwear, soles, rubber footwear, auxiliaries for the leather and rubber industry and concerning the wastewaters. As a result of laboratory equipping with new apparatuses, the area of its competence broadened in the leather field.

2. Activitatea de Servicii

De-a lungul celor peste 10 ani de existenta ca organisme acreditate, laboratoarele de investigare din cadrul IN.C.D.T.P. au raspuns cu succes solicitarilor de testare a produselor textile si din piele.
Incercarile acreditate pentru testarea produselor textile (certificat 014–L), in numar de 40, sunt efectuate in atmosfera climatizata standard de catre personal specializat, utilizand echipamente performante, respectand prevederile standardelor internationale in vigoare.
Pentru testarea produselor din piele, I.N.C.D.T.P. pune la dispozitia beneficiarilor Laboratorul de incercari din Sucursala de Pielarie, acreditat din anul 1997 (certificat 112–L), pentru efectuarea a 45 de incercari fizico-mecanice si analize chimice pentru piei, blanuri, incaltaminte, talpi, incaltaminte din cauciuc, materiale auxiliare pentru industria de pielarie si cauciuc si ape uzate. In urma dotarii laboratorului cu aparatura noua, domeniul ariei de competenta in domeniul pielarie se va extinde.

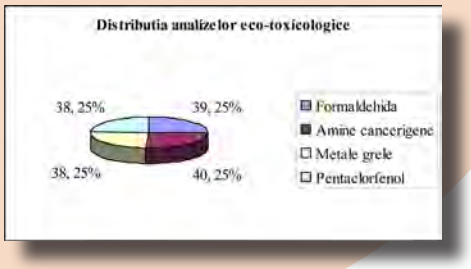
In comparison, for October 2008, 455 requests were registered for the analysis of textile samples and 305 requests for the analysis on clothing articles, leather items and briefcase leather, protective gloves etc.



In anul 2008, luna octombrie, au fost inregistrate 455 de cereri pentru analiza unor probe de natura textila si 305 pentru analiza articolelor de imbracaminte, marochinarie, manusi de protectie etc.

Technical assistance activity in 2008:

• Analyses for eco-toxicological properties of textile and leather materials, according to eco-labeling requests:



Analyses for physical-chemical and physical-mechanical parameters of medical articles (medical cotton wool, gauze and gauze bandage), for the achieving of trading authorization from the Body notified by the Ministry of Health

Activitatea de asistenta tehnica desfasurata in anul 2008 a cuprins :

• Analize de testare a proprietatilor eco-toxicologice ale materialelor textile si din piele, conform cerintelor eco-etichetelor:

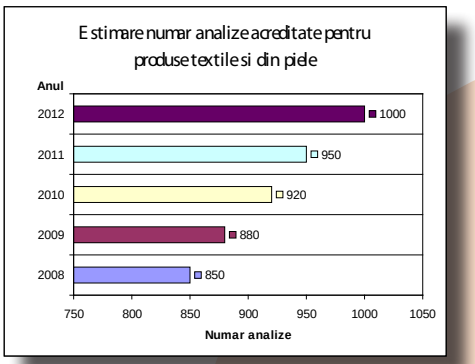
Physical-chemical analyses

Physical-mechanical analyses

Analyses for dyeing resistance evaluation

The strategic directions drafted for the technical services activity the IN-CDTP proposed are:

1. Broaden the range of accredited analyses: the increase of analyses number conducted according to European standards, objective that will allow the development of the technical services range and the manufacture of competitive products by their substantial quality improvement.



Directiile strategice ale activitatii de servicii tehnice, propuse de I.N.C.D.T..P, sunt:

1. Extinderea gamei de analize acreditate: cresterea numarului de analize acreditate, efectuate conform standardelor europene, obiectiv care va permite dezvoltarea gamei de servicii tehnice, si realizarea de produse competitive, prin imbunatatirea calitatii acestora.

2. Development of new segments within the testing laboratory, respectively the one for individual protective suits and the one for comfort properties, considering that Romanian market became an integral part of the European unique mar-

2. Dezvoltarea unor noi segmente in cadrul laboratorului de testare, si anume cel pentru testarea echipamentelor individuale de protecție si a proprietatilor de confort, tinand cont ca piata romaneasca a devenit parte integranta a pietei unice europene, fiind obligata sa respecte in totalitate reglementarile

ket, thus being forced to completely observe the regulations in force. This supposed:
- The development of testing procedures meant for individual protective equipments, in order to reach the capacity of conformance to EU regulation requests;
- The improvement of technical capacities the testing laboratories possess, according to market requests;
- The acquisition of equipments necessary for the determination of electrostatic load, surface resistivity, conductivity, of comfort and physiological properties the textile materials present: air permeability, water permeability in static and dynamic systems, breathability;
- Staff training through knowledge accumulation on such issues like regulations and evaluation procedures for the conformity in correlation with EU Directives

3. Accreditation of the laboratory for textile and leather biological testing:
- Development of testing procedures;
- Acquisition of strains;
- Purchase of equipments

4. Valorization of research results, through the introduction into production of new collagen biomaterials:
- Abdominal wall substitute of textile collagenated mesh;
- Collagenic matrix – 3D support for cells growth;
- Implementation of new composite biomaterials in medical practices;
- Education, training, and dissemination of scientific information related to the collagen biomaterials field.

5. Certification of the textile medical devices developed within INCDTP:
- elastic bandages for bone system traumas and for muscles and ligaments injuries
- non-resorbable surgical thread
- vascular prostheses
- surgical meshes for hernias and eventrations

6. Protection of cultural patrimony objects, through the identification and evaluation of leather and parchment objects degradation level, and the elaboration of technical-scientific studies on the processing of leathers.

7. Achievement of a modern line for the production of bootlasts and leather items models (footwear, garments, briefcase leather):
- design and manufacture of leather articles;
- conformity check of leather products, according to technical specifications;
- creation of footwear lasts models;
- technical expertise for footwear, on OPC request (Office

in vigoare. Aceasta implica:
- dezvoltarea procedurilor de testare a echipamentelor individuale de protectie pentru a atinge capacitatea de conformitate cu cerintele reglementarilor UE;
- imbunatatirea capabilitatilor tehnice a laboratoarelor de testare, in concordanta cu cerintele pietei;
- achizitionarea de echipamente necesare determinarii incarcarii electrostatice, a rezistivitatii de suprafata, a conductivitatii, a proprietatilor fiziologice si de confort ale materialelor textile - permeabilitatea la aer, permeabilitatea la apa - in sistem static si dinamic, respirabilitatea;
- specializarea personalului, prin imbunatatirea cunostintelor asupra reglementarilor si procedurilor de evaluare a conformitatii in corelatie cu Directivele UE.

3. Acreditarea laboratorului de testare biologica a produselor textile si din piele:
- dezvoltarea procedurilor de testare;
- achizitionarea de tulpini;
- achizitionarea de echipamente;

4. Valorificarea rezultatelor cercetarii, prin introducerea in productie a noi tipuri de biomateriale colagenice:
- substituent de perete abdominal din plasa textila colagenata;
- matrice colagenica – suport 3D pentru cresteri de celule;
- implementarea unor noi biomateriale compozite in practica medicala;
- educatie si training, diseminare de informatii stiintifice in domeniul biomaterialelor colagenice.

5. Certificarea dispozitivelor medicale textile, dezvoltate in I.N.C.D.T.P.:
- pansamente elastice pentru traumatisme ale aparatului osos si muscoligamentar;
- ata chirurgicala neresorbabila;
- proteze vasculare;
- plase chirurgicale pentru hernii si eventratii.

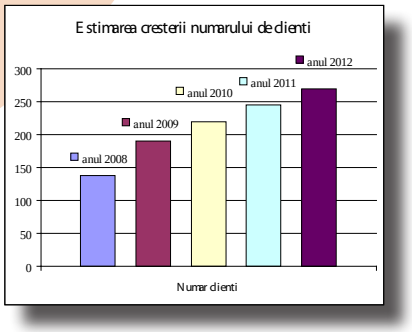
6. Protejarea obiectelor de patrimoniu cultural, prin identificarea si evaluarea nivelului de degradare a obiectelor din piele si pergament, elaborarea de studii tehnico-stiintifice privind prelucrarea pieilor.

7. Realizarea unei linii moderne pentru productia de modele de calapoade si de articole din piele (incaltaminte, imbracaminte, marochinarie):
- proiectarea si realizarea de articole din piele;
- verificarea conformitatii produselor din piele, conform specificatiilor tehnice;
- creatie modele calapoade pentru incaltaminte;
- expertize tehnice pentru incaltaminte, la solicitarea OPC;

for Consumers' Protection);
- set up of a design and creation compartment;
- dissemination of technical information and training in fields like garments manufacture, stylistics and design.

8. Development of rubber products range:
- Increase the diversity of matrices and compounds range, for the injection of rubber soles meant for work and protection footwear.
- Achieve some special rubber mixtures and some technical articles of elastomer compounds;
- Dissemination of technical information and training for the technical personnel in the field.

9. Gain of new clients by ample information dissemination actions on the range of laboratory analyses that could be performed within INCDTP.



- realizarea unui compartiment de creatie si design;
- diseminare informatii tehnice si training in domeniile confectii incaltaminte, stilism si design.

8. Dezvoltarea gamei de produse din cauciuc:
- diversificarea gamei de matrite si de compounduri, pentru injectia talpilor de cauciuc destinate incaltamintei de protectie si de lucru;
- realizarea de amestecuri speciale de cauciuc si a unor articole tehnice din compounduri elastomerice;
- diseminare informatii tehnice si training pentru personalul tehnic din domeniu.

9. Atragerea de noi clienti, prin ample actiuni de diseminare a informatiilor privind paleta de analize de laborator ce pot fi efectuate in cadrul I.N.C.D.T.P.

Infrastructure

To come forward and support these objectives, permanent efforts are in place for up-dating the technical base, in order to cover an as large as possible range of analyses and to satisfy the increasingly exigent requests of clients, for which the laboratories use last generation measuring / trial equipments:

- Gas Chromatograph with ECD and PID detector, Producer Agilent – USA
- Functions: Determination of pesticides present on the textile and leather supports (38 analyses requested by the companies and conducted during last year)

- High Performance Liquid Chromatograph with UV-VIS and fluorescence detector
- Functions: Determination of cancerous amines present on textile and leather supports (40 analyses requested by the companies and conducted in 2008)

- UV- VIS – NIR Spectrophotometer, Perkin - Elmer, USA
- Functions: Determination of the free and hydrolyzed formaldehyde present on the textile and leather supports (38 analyses in 2008) and determination of IR reflection for the textile materials (11 analyses in 2008)

Infrastructura

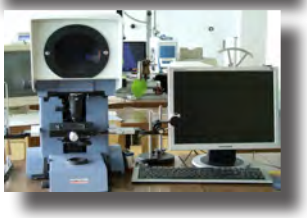
In intampinarea acestor obiective, se fac demersuri permanente pentru modernizarea dotarii tehnice, pentru a acoperi o gama cat mai mare de analize si pentru a satisface cerintele din ce in ce mai exigente ale clientilor, laboratoarele utilizand echipamente de măsurare/ încercare de ultima generatie:

- Atomic Absorption Spectrometer, Varian, Australia
- Functions: Determination of heavy metals (38 analyses in 2008)

- ORBITOR Pilling & Snagging Tester, James H. Heal
- Functions: Determination of pilling effect and of snagging resistance for the textile products (36 analyses in 2008)

- Nu-Martindale Abrasion and Pilling Tester, James H. Heal
- Functions: Determination of abrasion resistance and of the pilling effect

- Micro Macro Projector, Projectina
- Functions: Equipment used to measure fibers and yarns diameter



- Penetrometer, Branca Idealair, Italy
- Functions: Equipment used to determine water permeability

Quality assuring for the trials results

The quality of results delivered for the trials conducted by DTCAP is assured by the participation within inter-comparing tests organized by national and international bodies like:

- Testex (Switzerland), for the assessment of dyes resistance and for the determination of physical-mechanical characteristics of woven fabrics;
- INCD – "Alexandru Darabont" Occupational Health and Safety – Bucharest

Asigurarea calitatii rezultatelor incercarilor

Calitatea rezultatelor incercarilor efectuate in DTCAP este asigurata prin participarea la teste de intercomparari organizate de organisme internationale si nationale, precum:

- Testex (Elvetia), pentru evaluarea rezistentei vopsirilor si pentru determinarea caracteristicilor fizico-mecanice ale tesaturilor;
- INCD – Protectia Muncii „Alexandru Darabont" - Bucuresti;

- LGR – Lederinstitut Gerberschule Reutlingen, Germany

The permanent efforts made during recent years enabled the positioning of INCDTP investigating laboratories on the performance threshold of the profile laboratories existent at European level. Human resources investment and the pursue of professionals training were the key factors by which national and international visibility increase was gained for these laboratories.

- LGR – Lederinstitut Gerberschule Reutlingen - Germania.

Eforturile sustinute, depuse de-a lungul ultimilor ani, au permis pozitionarea laboratoarelor de investigare la performanta laboratoarelor de profil existente la nivel european. Investind in oameni, urmarind scopul de a forma o echipa de profesionisti, am reusit sa crestem vizibilitatea nationala si internationala a acestor laboratoare.

Textile chemical laboratory

3. Marketing Activity

In order to develop its activity and to level up its performance in 2008, INCDTP Marketing Compartment focused its efforts and actions towards the promotion of newly developed products and services, aiming the following targets:

3. Activitatea de Marketing

Pentru dezvoltarea activitatii si atingerea performantei in anul 2008, compartimentul Marketing din cadrul I.N.C.D.T.P. si-a orientat eforturile si actiunile de promovare privind produsele si serviciile realizate, vizand urmatoarele tinte:

• the conduct of direct surveys over the segment of user had in view, to easily track the changes and lacks emerged in the production processes, needed both for the detection of research directions and for the transfer of research results;
• the making up of a products and services marketing mix, correlated with market necessities, in view of decreasing and even removing the obstacles the companies generally face;
• the identification of new activity sectors aimed to expand the range of applicability fields of products manufactured by INCDTP;
• the improvement of client-institute communication means by up-grading the primary correspondence efficiency, by orders execution to settled deadlines, and adapting the payment possibilities to clients profile, and complaints solving as well;
• the organization of ample information dissemination actions in order to bring on new clients for the range of products executed within I.N.C.D.T.P.;
• the launch on strong niche segments identified as being insufficiently or not at all covered by competitors.

Marketing activity aimed in 2008 the outlet markets pointed by the specificity of products and services provided by the institute, so that sales representatives in fields like building and construction sector, chemical industry, health, mining and extraction, food industry, iron and steel, light industry have been approached.

Means employed in the promoting activities unfolded were aimed to reached the targeted clients in the segment specific to the products and services offered, among these mostly at hand to be listed:

• direct promotion: telemarketing, e-mail, visits under the umbrella of "Innovation Caravan", contacts grown within fairs and exhibitions in the branch;
• internet publicity: the institute's own website, the institute logging on or join to other websites specialized in trading, advertising and promotion.

• efectuarea de cercetari directe asupra segmentului de utilizatori vizat, avand scopul de a identifica schimbarile si lipsurile aparute in procesele de productie, necesare atat noilor directii de cercetare cat si transferului rezultatelor activitatii de cercetare;
• elaborarea mix-ului de marketing al produselor si serviciilor, corelat cu necesitatile pietei, prin diminuarea sau chiar eliminarea obstacolelor intalnite de agentii economici;
• identificarea de noi sectoare de activitate, in vederea extinderii domeniilor de aplicabilitate a produselor realizate de I.N.C.D.T.P.;
• imbunatatirea sistemului de comunicare intre clienti si institut, prin eficientizarea corespondentei primare, realizarea comenzilor in termenele de livrare stabilite, adaptarea modalitatilor de plata la profilul clientilor si solutionarea nemultumirilor.
• atragera de noi clienti prin ample actiuni de diseminare a informatiilor privind paleta de produse realizate in cadrul I.N.C.D.T.P.;
• intrarea pe segmente de nisa foarte bine identificate, care sunt acoperite insuficient sau deloc de concurenta.

Activitatea de marketing din anul 2008 a vizat pietele de desfacere indicate de specificlul produselor si serviciilor institutului, astfel s-au abordat agentii comerciali din sectorul materialelor de constructii, industria chimica, sectorul de sanatate, minerit si extractie, industria alimentara, sectorul metalurgic, industria usoara.

Mijloacele prin care au fost desfasurate activitatile de promovare, au avut in vedere atingerea segmentul de clienti vizat de specificul produselor si serviciilor oferite, printre acestea regasindu-se:

• promovarea directa: tele-marketing, mail, vizite realizate in cadrul actiunilor Caravana Inovarii, contacte in cadrul targurilor si expozitiilor cu profil;
• publicitatea realizata cu ajutorul internetului: site-ul propriu, inscrierea institutului pe site-uri cu specific comercial, reclame, anunturi.

Thus, the initiative basically related to the correlation between products and services properties and Romanian economical environment and the additional promoting methods attracted some 54 new clients on the list, as compared to 2007, 13 of which for the technical weaves, and respectively 41 for services, namely laboratory trials.

Corelarea proprietatilor produselor si serviciilor cu mediul economic din Romania, la care s-au adaugat metodele de promovare, au atras un numar de 54 de clienti noi fata de anul 2007, 13 pentru categoria de tesaturi tehnice, respectiv 41 pentru incercarile de laborator.

10 Human resources

Not so long ago, the human resources (HR) management was based on the labor force management; the personnel activity was subordinated to rigid norms and pre-established criteria, the management being mainly concerned with technical ways available to reach the targets proposed.
The economic and social development, once with the astonishing evolution of science, work technologies and IT, has forced the performance-oriented organizations abandon the traditional models and develop systems able to promptly react to external and internal needs.
Under the new circumstances, the HR management became an assembly of norms, values and beliefs that reflects clearly the philosophy on which the organization funds the relationship with its members. From the personnel management centered on staff selection, training and rewarding, within the last years there has been attained a new concept of the HR management, focused on people development in order to satisfy the organizational needs and also the individual ones.
The objectives of HR management are centered on five large domains of INCDTP:
- the HR strategic management: planning, recruitment, selection and retaining;
- the management of employees development potential: professional education and training, efficiency assessment, organizational development;
- the management of work relationships: elaboration and implementation of the policies and procedures, payment system administration, the relationship between employer and trade union, conflicts prevention and solving;
- the management of work conditions: occupational health and security protection, ensure the work and, as such, life standard;
- social responsibility and professional ethics: the creation and application of ethic codes in the occupational field, observance and involvement in solving the social responsibility problems.

To reach the objectives of the HR management, modern action ways were developed:
- to identify an retain the best employees or the ones with special professional performances within the R&D&I activity;
- to guide and support the competitive employees, to attain the individual objectives, according to their needs and aspirations, as well as to their contribution within the institute;
- to stimulate the scientific careers planning and development at European level, on the basis of continuous training of the research personnel;
- to organize and strengthen the high performance research teams;

Pana nu demult, managementul resurselor umane era bazat pe administrarea fortei de munca, activitatea de personal fiind subordonata unor norme rigide si unor criterii prestabilite. Managementul era preocupat, in principal, de modalitatile tehnice de obtinere a profitului si mai putin de rolul factorului uman in atingerea obiectivelor propuse.
Dezvoltarea economica si sociala, datorata evolutiei fara precedent a stiintei, tehnologiilor de lucru si informatizarii, a obligat organizatiile preocupate de performanta sa abandoneze modelele traditionale, dezvoltand sisteme apte sa raspunda cu rapiditate atat cerintelor mediului extern, cat si ale celui intern.
In noile conditii, managementul resurselor umane devenit un ansamblu de norme, valori si credinte, care exprima insasi filozofia pe care organizatia isi fundamenteaza relatia cu membrii sai. De la managementul de personal - centrat pe selectarea, pregatirea si remunerarea personalului - in ultimii ani s-a ajuns la un concept nou de gestiune a resurselor umane, focalizat pe dezvoltarea oamenilor pentru satisfacerea nevoilor organizatiei, dar si a asteptarilor individuale.
Obiectivele managementului de resurse umane al INCDTP vizeaza cinci mari domenii:
- managementul strategic al resurselor umane: planificare, recrutare, selectie si retinere;
- managementul dezvoltarii potentialului angajatilor: formarea profesionala, evaluarea randamentului, dezvoltarea organizationala;
- managementul relatiilor de munca: elaborarea si implementarea politicilor si procedurilor, gestionarea sistemului de remunerare, medierea relatiilor patronat- sindicat, prevenirea si solutionarea conflictelor;
- managementul conditiilor de lucru - protejarea sanatatii si securitatii in munca, asigurarea calitatii muncii si a vietii;
- responsabilitate sociala si etica profesionala - conceperea si aplicarea codurilor etice in domuniul muncii, respectarea si implicarea in rezolvarea problemelor de responsabilitate sociala.

Politica de resurse umane in cursul anului 2008 a vizat urmatoarele obiective prioritare:
1. Intinerirea colectivului prin atragerea de tineri in activitatea de cercetare-dezvoltare.

Din totalul de 294 salariati la sfarsitul anului 2008, 143 sunt incadrati in activitatea de cercetare-dezvoltare-inovare, 34 in activitatea de productie si 117 in serviciile administrative.
Ca urmare a politicii de resurse umane, angajarea si promovarea cu prioritate a tinerilor, activitatea de recrutare si selectie a urmarit atragerea si mentinerea celor mai pregatiti candidati, prin procedurile specifice.
In cursul anului 2008, au fost efectuate 28 de angajari, din

- to develop and ensure an appropriate payment system for the research personnel;
- to promote the international collaborations and researchers mobility;
- to diversify and promote the professional training programs

At the end of 2008, of total 294 employees, 143 belonged to the R&D&I activity, 34 to the production and 117 to administration.
As a result of HR policy, namely priority hiring and promoting young personnel, the recruitment and selection activity had the purpose of attracting and retaining the best candidates through specific procedures.
In 2008, 28 persons have been hired, of which 18 persons aged below 35.
According to the labor legislation, the stresses lies more and more on having the professional competencies afferent to the position appointed, and on permanently train the employees.
Professional up-grading of the R&D personnel is a priority objective, becoming one of the most important components of the HR managerial policy.
The professional training activity with its two components, personnel training and skills updating, is one of the objective the INCDTP development strategy displays and consists in establishing some long and medium term targets, in the creation of concrete training or specialization programs, in the organization and monitoring of these, together with the performance assessment supposed afterwards.
The professional upgrading of employees is mainly put into practice by:
- post-university degrees: master, doctorate
- upgrading courses on professional domains
- foreign language classes
- training courses organized by the Institute, specific to some activity fields like: quality, environment, laboratory works
- specialization courses within projects
- documentation and individual study

Post-university courses
Attract and retain the young graduates and stimulate the continuous staff training are key factors employed for successful career planning and development, one of the important directions of the HR management within INCDTP.
In order to attain the performance standards of a successful career, employees are stimulated to follow special programs of professional upgrading, of which the most representative ones are the master and doctorate studies. In this sense, 12 care 17 tineri sub 35 ani.
2. Dezvoltarea activitatii de perfectionare profesionala si de dezvoltare a carierei angajatilor
Principalele obiective ale managementului carierei, care pot sa devina obiectivele dezvoltarii activitatii de perfectionare profesionala si de dezvoltare a carierei angajatilor sunt:
- promovarea unei politici de dezvoltare corespunzatoare a carierei in concordanta cu natura activitatii desfasurate, precum si posibilitatile individuale si institutionale;
- integrarea nevoilor si aspiratiilor individuale cu nevoile si obiectivele institutiei;
- satisfacerea nevoilor de dezvoltare si amplificare a imaginii pozitive sau favorabile a institutiei prin recunoasterea nevoilor de pregatire si dezvoltare a angajatilor;
- identificarea si mentinerea celor mai buni angajati sau a celor cu performante profesionale certe prin satisfacerea nevoilor lor profesionale si a aspiratiilor personale;
- asigurarea pregatirii si dezvoltarii necesare angajatilor pentru a le permite sa faca fata oricarui nivel de responsabilitate;
- dezvoltarea unor noi cai ale cariarei pentru orientarea indivizilor in cat mai multe directii;
- reorientarea angajatilor care manifesta o oarecare stagnare sau plafonare a dezvoltarii lor profesionale;
- obtinerea atat pentru institut cat si pentru angajatii acestuia a unor avantaje reciproce.
Activitatea de pregatire profesionala cu cele doua componente ale ei - formarea si perfectionarea personalului - reprezinta unul dintre obiectivele Strategiei de dezvoltare a I.N.C.D.T.P. si consta in stabilirea unor obiective pe termen lung si mediu, in conceperea concreta a programelor de pregatire sau specializare, in organizarea si monitorizarea lor, in evaluarea performantelor.
In principal, perfectionarea profesionala a angajatilor se realizeaza prin:
- cursuri postuniversitare - master, doctorat;
- cursuri de perfectionare pe domenii profesionale;
- cursuri de limbi straine;
- instruiri organizate la nivel de institut, specifice unor domenii de activitate -calitate, mediu, lucrari de laborator;
- cursuri de specializare in cadrul unor proiecte;
- documentare si studiu individual

Cursurile postuniversitare
Atragerea si mentinerea tinerilor absolventi si stimularea perfectionarii continue a angajatilor in vederea planificarii si dezvoltarii unei cariere de succes constituie una dintre directiile importante ale managementului resurselor umane in cadrul I.N.C.D.T.P.
Pentru a atinge standardele de performanta ale unei cariere de succes, acestia urmeaza programe speciale de perfectionare profesionala, dintre care cele mai reprezentative sunt

persons were enrolled in 2008 in INCDTP training program for master classes and 24 for PhD studies. For each candidate to a doctor's degree, according to the Collective Labor Contract, the Institute will financially support 50% of the expenses generated by the doctoral programs.
The domains approached for doctoral studies are specific to the institute's activity, such as industrial engineering, polymers chemistry and technology, medical textiles, cellular biology, mechanic and mechatronic engineering, chemistry-physics.
In 2008, 28 science doctors have worked for INCDTP.
Training courses – European programmes/fund
During 2008, the specialists from INCDTP took part in professional upgrading courses organized at national or international level, according to main development directions of the research activity.
There can be mentioned in this regard:
- the training courses through European programs/funds in amount of 5 with the participation of 9 persons
- specialisation/improvement courses in amount of 14 with the participation of 20 persons
- quality management courses in amount of 5 with the participation of 16 persons
- forign languages courses, German and English with the participation of 20 persons

For the dissemination of knowledge attained from various courses, on domains of a larger interest, periodic training courses were organized within the Institute in areas like – quality, environment, and laboratory analysis.
- Within the department of Product Testing, Control and Certification, quarterly trainings on various themes have been made that addressed the means of solving nonconformities, quality policy and objectives;
- Within the Environment Management, personnel has been quarterly instructed, according to the Annual Instruction Plan, regarding: the principles and documents of the environmental management system (SMM) on wastes, the specific laws on environmental protection, policy and other SMM aspects.
Within some of the projects in progress, 14 persons were trained to use software applications like CFD Fluent, Lectra, installation and usage of 3D Vitus Smart XXL, Santoni seamless knitting machines.
To achieve the long and medium term targets of the continuous professional training and to reach the proposed performance level, the institute ensures the funds necessary for its own staff training. In this direction, 40,090.46 lei were spent in 2008 for professional training and upgrading courses.

masteratul si doctoratul. In acest sens, in anul 2008 au fost cuprinsi in Programul I.N.C.D.T.P. de formare, 11 persoane la masterat si 27 persoane la doctorat. Pentru fiecare doctorand, conform Contractului Colectiv de Munca, institutul sustine financiar 50% din cheltuielile generate de programele de doctorat.
Domeniile de abordare a studiilor de doctorat sunt specifice activitatii institutului si anume - inginerie industriala, chimia si tehnologia polimerilor, textile medicale, biologie celulara, inginerie mecanica si mecatronica, chimie-fizica.
In anul 2008, in I.N.C.D.T.P. si-au desfasurat activitatea un numar de 18 doctori in stiinta.
In cursul anului 2008, specialistii din I.N.C.D.T.P. au participat la cursuri de perfectionare profesionala, organizate la nivel national sau international, in acord cu directiile principale de dezvoltare a activitatii de cercetare.
In acest sens se mentioneaza:
- cursurile de instruire prin programe/fonduri europene in numar de 5 la care au paticipat 9 cursanti;
- cursuri de perfectionare/specializare in numar de 14, la care au participat 20 de persoane;
- cursuri in domeniul managementului calitatii in numar de 5 la care au participat 16 persoane;
- cursuri de limbi straine, germana si engleza la care au participat 20 de persoane

Pentru diseminarea cunostintelor dobandite in diversele cursuri, pe domenii de interes mai larg, in cadrul institutului s-au desfasurat instruiri periodice pe domenii, cum ar fi : calitate, mediu, analize de laborator.
- in cadrul Departamentului Testare Control, Avizare Produse, trimestrial au fost efectuate instruiri pe diverse tematici care au tratat modul de rezolvare a neconformitatilor, politica si obiectivele calitatii;
- in cadrul Managementului de Mediu, salariatii au fost instruiti trimestrial conform planului de instruire anual, privind: principiile si documentele sistemului de management de mediu pentru gestionarea deseurilor, legislatia specifica de protectie a mediului, politica de mediu si aspecte de mediu ale SMM.
Un numar de 14 persoane au fost instruite in cadrul unor proiecte pentru folosirea unor softuri, cum ar fi: CFD Fluent, Lectra, Instalare si utilizare 3D VITUS SMART XXL, masini de tricotat seamless Santoni.
Pentru a realiza obiectivele pe termen lung si mediu ale pregatirii profesionale continue si pentru atingerea nivelului de performanta propus, institutul asigura fondurile financiare necesare pentru instruirea prsonalului din cadrul organizatiei. In acest sens in anul 2008 au fost alocati 40 090,46 lei

environmental management system (SMM) on wastes, the specific laws on environmental protection, policy and other SMM aspects.
Within some of the projects in progress, 14 persons were trained to use software applications like CFD Fluent, Lectra, installation and usage of 3D Vitus Smart XXL, Santoni seamless knitting machines.
To achieve the long and medium term targets of the continuous professional training and to reach the proposed performance level, the institute ensures the funds necessary for its own staff training. In this direction, 40,090.46 lei were spent in 2008 for professional training and upgrading courses.
The professional training is a continuous process. The INCDTP researchers, by means of using the informational and documentation base, scientific and technical patrimony of the Institute, through the access assured to international database networks, raise their professional level, with individual efforts for a permanent study.
The permanent concern of the HR management to continuously raise the training level of the R&D personnel has led to the university registration of 18 of its young employees, interested to upgrade their performances through doctorate degree, eight of which are students at "Gh. Asachi" University, Faculty of Textiles, Leather and Industrial Management.
Enhancing the professional level remains one of INCDTP priority objectives for 2009, too. In conformity with the Labor Code and in the pursue of professional higher levels that should be reflected in the research projects approached. The plan for professional upgrading in 2009 was elaborated for all the specialists to take part in at least one of the professional training courses.
During the year, this plan will be completed with more courses, depending on the offers and the needs of the running projects. Important to be specified is that, out of the 24 candidates to a doctor's degree, a number of 8 persons will defend their PhD.

Foreign languages courses

Un numar de 14 persoane au fost instruite in cadrul unor proiecte pentru folosirea unor softuri, cum ar fi: CFD Fluent, Lectra, Instalare si utilizare 3D VITUS SMART XXL, masini de tricotat seamless Santoni.
Pentru a realiza obiectivele pe termen lung si mediu ale pregatirii profesionale continue si pentru atingerea nivelului de performanta propus, institutul asigura fondurile financiare necesare pentru instruirea prsonalului din cadrul organizatiei. In acest sens in anul 2008 au fost alocati 40 090,46 lei pentru cursuri de formare si perfectionare profesionala.
Pregatirea profesionala este un proces continuu. Cercetatorii din I.N.C.D.T.P. folosindu-se de baza de informare si documentare din patrimoniul stiintific si tehnic al institutului si prin accesul la retelele internationale de banci de date, isi ridica nivelul profesional prin studiu individual permanent.
Preocuparea permanenta a managementului resurselor umane de ridicare continua a nivelului de pregatire a salariatilor din activitatea de cercetare- dezvoltare, a dus la inscrierea unui numar de 11 tineri in cadrul unor universitati pentru completarea studiilor prin doctorat, din care 8 sunt inscrisi la Universitatea Ghe.Asachi, Facultatea Textile Pielarie si Management Industrial.
Ridicarea nivelului profesional constituie obiectiv prioritar al managementului I.N.C.D.T.P. si pentru anul 2009.
In conformitate cu Codul Muncii si urmarind ridicarea nivelului profesional care sa se reflecte in nivelul proiectelor de cercetare abordate. Planul de perfectionare profesionala pentru anul 2009 elaborat pentru ca toti specialistii sa participe cel putin la un curs de pregatire profesionala.
Pe parcursul anului, aceasta planificare va fi completata cu alte cursuri, in functie de ofertele aparute si de cerintele proiectelor in derulare. Din cei 24 de doctoranzi, un numar de 8 persoane vor sustine examenul pentru obtinerea titlului de doctor in stiinta.

11 Information-documentation activity

„Publications not only ensure the knowledge dissemination, but they are also a thermometer of excellence, our concern being the increasing of the visibility of the scientific contribution quality of the European Research Area (ERA), meaning that we have to pay high attention to the system of publications", said the European ex-commissioner for research, Philippe Busquin, referring to the knowledge managing at the European level. The role of information in the research-development activity is essential, especially now, in the era of globalization, diversification and extension of the information sources at global level. By the information-dissemination activity, INCDTP contributes to the knowing and spreading of the technical progress in the Romanian textile-leather industry. In 2008, by the setting up and the extending of the Intranet network, the information is easily spread, and the access of all the researchers to the information sources can be done online, in due time, and the Documentation-Information Department organizes more efficiently the information means. Special attention was given to the acquisitions of textile-leather-footwear books and magazines with themes which are adequate to the Institute preoccupations (especially technical articles, multifunctional treatments for textiles, leather and footwear, nanotechnologies, medical articles, preoccupations in the R-D-I domain at European level, especially information regarding FP7 and financings of the projects within this framework programme, etc.), as well as the accessing of certain data bases on textile-leather themes.

A. The activity of documentation and translation:

• The participation of the team members to the solving of certain activities as part of the research projects, such as Leonardo da Vinci, „Fashion School 2" or SKILLTEX project.

• The effecting of bibliographic researches and magazine summaries for the research departments :

• The collecting of information from the connected domains (medicine, electronics, informatics, robotics, chemistry, biology, physics, cosmetics, pharmacy, botany, plastics, polymers, resins, etc.) having impact on the research works from INCDTP.

• Scientific documentation from the specialty literature for the completing of information for the bibliographical researches having a general character (innovation, ecology, environment and the legislation concerning the environment protection, as well as the research platforms and the international data bases).

„Publicatiile asigura nu numai diseminarea cunostintelor, ci sunt si un termometru al excelentei, grija noastra fiind aceea de a creste vizibilitatea calitatii contributiilor stiintifice ale Spatiului European al Cercetarii (ERA), aceasta insemnand ca trebuie sa acordam o atentie marita sistemului de publicatii" afirma ex-comisarul european pentru cercetare, Philippe Busquin, referindu-se la gestionarea cunostintelor la nivel european. Rolul informatiei in activitatea de cercetare-dezvoltare este primordial, mai ales acum in mileniul globalizarii, diversificarii si extinderii surselor de informare la nivel mondial. Prin activitatea de informare-documentare INCDTP contribuie la cunoasterea si difuzarea progresului tehnic in industria romaneasca de textile-pielarie. In anul 2008, prin infiintarea si extinderea retelei Intranet, informatia este difuzata cu usurinta, iar accesul tuturor cercetatorilor la sursele de informare din biblioteca tehnica se poate face online, in timp real, iar biroul de Informare-Documentare organizeaza mai eficient mijloacele de informare. O atentie deosebita s-a acordat achizitiilor de carte si de reviste de textile-pilarie-incaltaminte cu tematica adecvata preocuparilor institutului (in special articole tehnice, tratamente multifunctionale pentru textile, pielarie si incaltaminte, nanotehnologie, articole medicale, preocupari in domeniul C&DI la nivel european, mai ales informatii privind FP7 si finantari ale proiectelor din acest program-cadru, etc.), precum si accesarea unor baze de date cu tematica textile-pielarie.

A. Activitatea de documentare si traducere:

• Participarea membrilor colectivului la rezolvarea unor activitati din proiectele de cercetare, cum ar fi proiectul Leonardo da Vinci „Fashion School 2" sau SKILLTEX;

• Efectuarea de cercetari bibliografice si sumare ale revistelor;

• Culegerea de informatii din domenii conexe (medicina, electronica, informatica, robotica, chimie, biologie, fizica, cosmetica, farmacie, botanica, mase plastice, polimeri, rasini etc.) cu impact asupra lucrarilor de cercetare din institut din aceleasi surse enumerate;

• Documentarea stiintifica din literatura de specialitate pentru completarea informatiilor la cercetarile bibliografice cu caracter general (s-au intocmit dosare privind inovarea, ecologia, mediul si legislatia referitoare la protectia mediului, precum si platformele de cercetare si baze de date internationale) consultandu-se atat literatura de specialitate din biblioteca tehnica, cat si din bibliotecile tehnice din Bucuresti,

B. The technical library:

• managed:
- over 12 030 books;
- 11 820 translated articles;
- over 300 titles of foreign and Romanian magazines;

• it had subscriptions to over 50 titles of foreign and Romanian magazines (covering the domains of interest for the research projects);

• it managed approx. 18 titles of magazines received in exchange with the magazines edited by the Institute, (Industria Textilă - the Textile Industry)– a magazine which is ISI rated and Revista de Pielărie – Încălţăminte – The Leather-Footwear Magazine) and over 15 titles of magazines received after the institute registration in various external data bases;

• it managed collections of the most important textile and leather magazines, dating since 1954 – 1955 until now (for example: Melliand Textileberichte, Journal of the Textile Institute, Technical Textile International, TUT, L'Industrie Textile, Smart Textiles and Nanotechnology, World Leather, Leather International, World Leather, Leather International, Rubber Chemistry and Technology, World Footwear, European Rubber Journal, JALCA, JSLTC, etc.);

• it managed the books (over 12 030 titles) by using a computerized base, which facilitates their finding by title, author or key words.

• it ensured the access of the external users to the information sources from the library (of over 20 specialists, candidates for a doctor's degree, professors, researchers, etc.).

C. External collaborations by:

• the elaboration of the documentation which is necessary for the international accreditations;

• the editing of the correspondence and the materials received or sent to international bodies or associations, where the institute is a member or a collaborator;

• the elaboration of the papers and posters delivered at international scientific events;

• the elaboration of the documentation for the acquisitions of machinery and laboratory equipment, etc.

D. Other activities:

• the editing of the Leather-Footwear Magazines, as well as of certain technical documentation, guides, technical books, leaflets, web page, etc.

din brevetele de inventii de la OSIM, din standardele de la ASRO si din documentatia de la reprezentanta Uniunii Europene in Romania, Internet.

B. Biblioteca tehnica:

• a gestionat:
- peste 12 030 de carti;
- 11820 articole traduse;
- peste 300 de titluri de reviste straine si romanesti;

• a efectuat abonamente la peste 50 de titluri de reviste straine si romanesti (ce acopera domeniile de interes pentru proiectele de cercetare);

• a gestionat apox. 18 de titluri de reviste primite la schimb cu revistele editate de institut, (Industria Textila - revista cotata ISI si Revista de Pielarie – Incaltaminte - in curs de cotare ISI) si peste 15 titluri de reviste primite ca urmare a inregistrarii institutului in diferite baze de date externe;

• a gestionat colectii ale celor mai importante reviste textile si de pielarie, datand din anii 1954 – 1955 pana la zi (ex.:Melliand Textileberichte, Journal of the textile Institut, Technical Textile International, TUT, L'Industrie Textile, Smart Textiles and Nanotechnology, World Leather, Leather International, World Leather, Leather Internationl, Rubber Chemistry and Technology, World Footwear, European Rubber Journal, JALCA, JSLTC etc.);

• a gestionat cartile (peste 12 030 de titluri) prin utilizarea PC, care faciliteaza regasirea lor dupa titlu, autor sau cuvinte-cheie;

• a asigurat accesul utilizatorilor externi la sursele de informare din biblioteca (a peste 20 de specialisti, doctoranzi, profesori, cercetatori etc.)

C. Colaborari externe, prin:

• traducerea documentatiei necesare acreditarilor internationale;

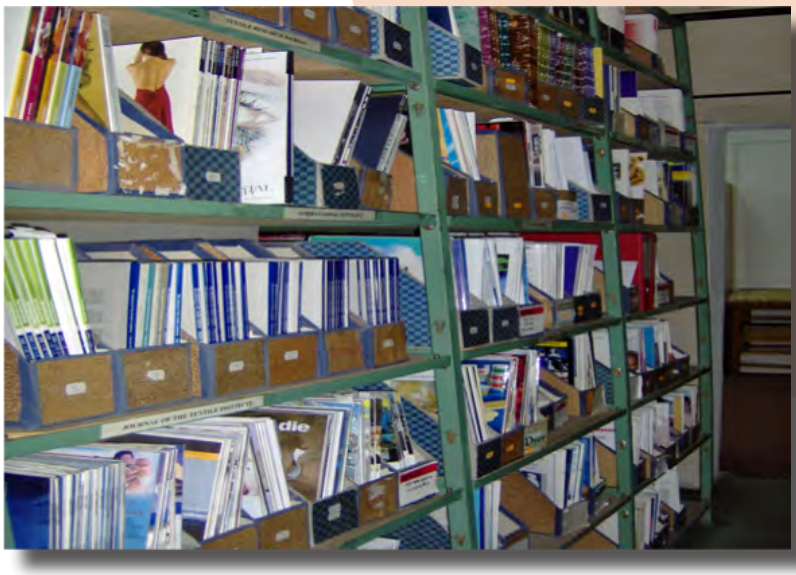
• traducerea corespondentei si a materialelor sosite sau trimise catre organisme sau asociatii internationale, In care institutul este membru sau colaborator;

• traducerea expunerilor si posterelor prezentate la manifestari stiintifice internationale;

• traducerea documentatiei pentru achizitiile din investitii ale institutului etc.

D. Alte activitati:

• editarea Revistei de Pielarie-Incaltaminte, precum si a unor documentatii tehnice, ghiduri, caiete tehnice, pliante, pagina web etc.



Technical library

Books 2008

12 Publishing activity

The main purpose of research is to contribute to scientific knowledge advance with uncountable benefits over human culture and civilization. It is very important for this knowledge to be encompassed by an institutionalized scientific literature, as well to foster the direct access to such information and the efficient use of knowledge diversity gathered along time. Scientific literature is essentially formed of books (especially treaties and monographies), articles published in magazines, research reports, proceedings of various scientific conferences, doctoral thesis papers, invention patents, research grants (respectively their scientific reports) etc.
Within CERTEX Publishing House, belonging to the National Research & Development Institute for Textiles and Leather, the following magazines are edited: Industria Textilă - ISI Thompson Reuters indexed since 2007 and Revista de Pielărie-Încălțăminte, under evaluation by CNCSIS.

In 2008, Industria Textilă Magazine kept its 6 issues a year frequency, yet, it increased the number of scientific articles published to 34, as compared to 2007, when 24 scientific articles were published. It also increased the number of scientific articles published from foreign authors, of countries like Iran, Belgium, Turkey, Czech Republic, China, India etc., thus widening the geographical area of information provided in the magazine.

"Industria Textila" Magazine

Considering the important informing sources at hand, included in the rich collection of speciality magazines to be found in the institute's library, among which newsletters and informing bulletins of different companies/organizations in the country and abroad or coming from direct contacts with the institute's collaborators, the editorial staff also had the possibility to select the published materials to be offered to the ones interested, related to:
• results achieved within national/European research projects;
• technical, scientific and economic data gathered by global literature;
• scientifical events already past, taking place or to be organized in the more or less near future;
• technical books launched in the country or abroad;
• actions and events undertaken as important measures on the European/international level and equally important for the

Scopul principal al cercetarii il constituie dobandirea unor cunostinte stiintifice, cu beneficii incomensurabile asupra culturii si civilizatiei umane. Desigur, este important ca aceasta cunoastere sa fie stocata in cadrul unei literaturi stiintifice institutionalizate, in scopul accesului direct la aceste informatii si a utilizarii eficiente a diversitatii cunostintelor dobandite de-a lungul timpului. Literatura stiintifica este alcatuita, in esenta, din carti (in special tratate si monografii), articole publicate in reviste, rapoarte de cercetare, cronici ale unor conferinte stiintifice (proceedings), teze de doctorat, brevete de inventie, granturi de cercetare (rapoartele stiintifice aferente) etc.
In cadrul editurii CERTEX, apartinand Institutului National de Cercetare-Dezvoltare pentru Textile si Pielarie, apar revistele: Industria Textila - indexata ISI Thompson Scientific, incepand cu anul 2007, si Revista de Pielarie-Incaltaminte, aflata in proces de evaluare de catre CNCSIS.

In anul 2008, revista Industria Textila si-a pastrat frecventa de 6 numere/an, insa a crescut numarul de articole stiintifice publicate la 34, comparativ cu anul 2007, cand au fost publicate 24 de articole stiintifice. De asemenea, a crescut numarul articolelor stiintifice publicate de autori din strainatate, de exemplu din Iran, Belgia, Turcia, Rep. Ceha, China, India etc., largindu-se astfel aria geografica a informatiilor aparute in revista.

Colectivul de redactie, avand la dispozitie importante surse de informatii, din colectia bogata de reviste de specialitate - aflata in biblioteca institutului, buletine informative de la firme/ diverse organizatii din tara si strainatate sau din contactele directe cu colaboratorii, selecteaza materiale publicate, pentru a oferi celor interesati noutati cu privire la:
• rezultatele obtinute in proiectele de cercetare nationale/europene;
• informatii tehnice, stiintifice si economice din literatura mondiala;
• manifestarile stiintifice desfasurate sau in perspectiva;
• cartile tehnice aparute in tara/ strainatate;
• actiunile si evenimentele desfasurate pe plan european/international, importante pentru activitatea firmelor;

companies activity;
• requests imposed by European Union regarding commercialization, legislation, standards etc.;
• possible opportunities of participation within research projects applied for the EU calls etc.
"Industria Textilă" continued to be distributed to over 23 countries in Europe, Asia and America, on a subscription basis, or in exchange for other magazines, both from the country and internationally. Efforts have been done to be also distributed to different fashion fairs, scientific and commercial events taking place on national and international plan.
The magazine editorial staff is formed of acknowledged professionals, personalities in the textile field, and in connected fields as well, being coordinated by Dr. Eng. Emilia Visileanu, Editor in Chief. In 2008, the editorial staff was enlarged through the involvement of two other new expert members: PhD Margareta Florescu – University Docent of the Academy of Economic Studies – Bucharest, and Dr. Eng. Lucian Constantin Hanganu – University Docent of "Ghe. Asachi" Technical University – Iaşi.
One of the editorial staff scopes is to gain the magazine's financial independence. To reach this objective, following measures have been put in place: initiation of a publishing fee, campaign to raise the interest of companies in buying publicity spaces, launch of some tempting offers related to special subscriptions – directed to companies – which include the publishing of a publicity material on the magazine's cover, advertising e-mailing to increase the number of subscriptions for the next year etc. On medium term, on-the-site integral publishing and printing at I.N.C.D.T.P. is aimed, which is expected to significantly reduce production costs.
"Revista de Pielărie – Încălţăminte" has been issued 4 times a year since 2000. It represents, both for the researchers in the institute, and for all the ones interested in the branch and outsiders (educational staff, specialists and experts in the related industrial sectors – leather, footwear, chemistry, plastics etc), the possibility to disseminate information and results achieved within their research projects, the magazine being structured in the following headings:
• Editorial, including general data about research, technical and economical events etc.;
• Leading articles, meant for all the institute activity sectors;
• Column dedicated to national events promotion (TIB 2008 – Inventika – Research Saloon);
• Column dedicated to the presentation of some foreign scientific events etc.
Textile and leather products spread into everyday life makes

• cerintele impuse de U.E. privind comertul, legislatia, standardele etc.;
• posibilitati de participare la proiectele de cercetare lansate de U.E. etc.
Industria Textila este difuzata in peste 23 tari din Europa, Asia si America, pe baza de abonamente, sau la schimb cu alte reviste atit din tara, cit si din strainatate. De asemenea este distribuita la diferite targuri de moda, evenimente stiintifice sau comerciale nationale si internationale.
Colegiul de redactie al revistei este format din personalitati de marca, atat din domeniul textil, cat si din domenii conexe, si este coordonat de dr. ing. Emilia Visileanu, in calitate de editor. In anul 2008 colegiul de redactie a fost largit, prin cooptarea a doi noi membri: conf. univ. dr. Margareta Florescu (Academia de Stiinte Economice - Bucuresti) si conf. univ. dr. ing. Lucian Constantin Hanganu (Universitatea Tehnica Ghe. Asachi - Iasi).
Unul dintre telurile redactiei il constituie obtinerea independentei financiare a revistei. Pentru atingerea acestui obiectiv, s-au aplicat urmatoarele masuri: perceperea unei taxe de publicare, atragerea unor firme pentru reclame publicitare, crearea unor abonamente speciale - ofertante pentru companii - care includ si aparitia unui material publicitar pe coperta revistei, marirea numarului de abonamente etc. Pe termen mediu, se doreste editarea si tiparirea integrala a revistei in cadrul I.N.C.D.T.P., ceea ce va reduce semnificativ costurile de productie.
"Revista de Pielărie – Încălţăminte" are o aparitie de 4 numere pe an, incepand cu anul 2000. Ea reprezinta, pentru cercetatorii din institut, precum si pentru toti cei interesati (cadre didactice, specialisti din ramurile industriale de pielarie, incaltaminte, chimie, mase plastice etc.), posibilitatea de diseminare a informatiilor si rezultatelor obtinute in proiectele de cercetare, fiind structurata pe urmatoarele rubrici:
• editorialul, care contine informatii generale legate de cercetare, evenimente tehnice, economice etc.;
• articole de fond, din toate sectoarele de activitate a institutului;
• prezentarea evenimentelor nationale (TIB 2008 – Inventika – Salonul Cercetarii);
• prezentarea unor manifestari stiintifice din strainatate etc.
Omniprezenta produselor textile si de pielarie face ca secto-

the sector a continuously dynamic one, forced to adapt to social and economic requests, and to advances emerging in all the fields possible. The multitude of scientific, technical and economical knowledge referring to the field in question needs to be disseminated to a most diverse range of economic and scientific entities, in order to:

• support businesses with a potentially informing count of ideas necessary for a good productive activity;
• lead the way to innovation in the sectors products and technologies;
• create and develop cooperation leverages at and among different levels.

Research and innovation, as top important factors to single out the textile and leather industry, need to be doubled by information dissemination, so that their results to reach as soon as possible the ones related to the field, either by interest or by interconnecting links. In this sense, I.N.C.D.T.P. assumed the responsibility by means of an intensive publishing activity.

The constant publishing of results achieved within the research projects of the R&D&I programmes, either national or European, and the dissemination of S/T and economical knowledge gathered in the institute's basic activity constituted one of its main mediatic objectives.

In 2008, I.N.C.D.T.P. researchers published:

• 28 articles in the international ISI database indexed magazines (ISI – Institute for Scientific Information) ;
• 16 articles in other speciality magazines from the country and abroad;
• 12 books published with the support of Certex Publishing House or other Publishing Houses.

CERTEX Publishing House

The main activity object of CERTEX Publishing House, within I.N.C.D.T.P., was to:

• publish the technical-scientific magazines:
  - "Industria Textilă",
  - "Revista de Pielărie-Încălțăminte";
• publish technical books for the textiles and leather-footwear sector.

Topics addressed by I.NC.D.T.P. published magazines was rich and various, including:

• results achieved by the research activity unfolded within

rul sa fie in permanenta dinamic, sa se adapteze cerintelor sociale si economice, dezvoltarilor aparute in toate domeniile. Multitudinea cunostintelor stiintifice, tehnice si economice, referitoare la acest domeniu, trebuie diseminata spre cele mai variate entitati economice si stiintifice, pentru:

• sustinerea agentilor economici cu un potential informatic de idei necesar unei bune activitati productive;
• introducerea inovatiei in domeniul produselor si tehnologiilor din acest sector;
• crearea si dezvoltarea cooperarilor la diferite niveluri.

Cercetarea si inovatia, fiind factorii cei mai importanti pentru afirmarea industriei textile si de pielarie, este necesar ca informatia sa fie difuzata si sa ajunga la cei interesati in cel mai scurt timp. I.N.C.D.T.P. si-a asumat aceasta responsabilitate printr-o intensa activitate de publicatii.

Publicarea constanta a rezultatelor obtinute in proiectele de cercetare din programele CDI, nationale sau europene, diseminarea cunostintelor tehnico-stiintifice si economice, acumulate in activitatea de baza a institutului, a constituit unul dintre principalele obiective.

In anul 2008, cercetatorii din I.N.C.D.T.P. au publicat:

• 28 de articole in reviste internationale indexate in baza de date ISI (Institute for Scientific Information) ;
• 16 articole in alte reviste de specialitate din tara sau din strainatate;
• 12 carti publicate in cadrul editurii Certex sau al altor edituri.

Editura CERTEX

Activitatea editurii CERTEX, din I.N.C.D.T.P., are ca principal obiect de activitate:

• editarea de reviste tehnico-stiintifice:
  - Industria Textila,
  - Revista de Pielarie-Incaltaminte;
• editarea de carti tehnice, pentru sectorul de textile si pielarie-incaltaminte.

Tematica prezentata in revistele editate de I.NC.D.T.P. este bogata si variata, cuprinzand:

• rezultate obtinute in activitatea de cercetare, desfasurata in

the textiles and leather-footwear sector;
• scientific and technical news in the fields specified;
• novelty signals about advances reported by global technical-scientific literature;
• signals and remarks on some internal and international events, fairs, exhibitions and symposia.
CERTEX Publishing House has been unfolding its activity within the institute since early 1990, the objective pursued along the period and continuing to be the driver of its activity being the elaboration of Industria Textilă magazine and publications editing – books, dictionaries, guides, and reference books – useful for businesses and specialists in the field.

In 2008, under the umbrella of CERTEX Publishing House 9 books (table 2) and proceedings of I.N.C.D.T.P. organized symposia were brought to light.

There have also been conceived technical sheets or technical documentation cards, leaflets, flyers etc. and other materials, such as:
• promotional catalogues for the collagen bio-products presentation;
• catalogues for products conceived and executed within the research projects;
• websites www.certex.ro and www.icpi.ro, including data about I.N.C.D.T.P. – presentation per departments and activities, research works, scientific results, abstracts of articles published, Intranet etc.

Strategic objectives:

I.N.C.D.T.P. intention is to intensify the actions able to lead to the achievement of a good impact factor, granted by ISI Thompson to "Industria Textilă" magazine, whose highering up is projected to be determined by:
• the number increase of the editorial staff by gathering the interest and thus commitment of some new members, of high professional caliber and international acknowledgement;
• maintain the line of magazines exchange and, if possible, level it up in the field of technical-scientific magazines with the same profile;
• attract new authors from various geographic areas, who could increase the prestige of the scientific maga-zine;
• quality increase and scientific leveling up of articles published;
• permanent harmonization of the structure and content, the

sectorul de textile si pielarie-incaltaminte;
• noutati stiintifice si tehnice din aceste domenii;
• semnalari din literatura tehnico-stiintifica mondiala;
• semnalari si comentarii ale unor evenimente interne si internationale, targuri, expozitii, simpozioane.
Editura CERTEX functioneaza in cadrul institutului inca din anul 1990 si are ca obiectiv principal realizarea revistei Industria Textila si tiparirea de carti, dictionare, ghiduri, indrumare - utile agentilor economici si specialistilor in domeniu.

In anul 2008, in editura CERTEX au aparut 9 carti si culegeri de referate de la simpozioanele organizate de I.N.C.D.T.P.

Au fost, de asemenea, realizate documentatii tehnice, pliante etc.:
• cataloage pentru prezentarea bioproduselor colagenice;
• cataloage pentru produse realizate in cadrul proiectelor de cercetare;
• paginile web www.certex.ro si www.icpi.ro, care contin date privind prezentarea I.N.C.D.T.P. - pe departamente si activitati, lucrari de cercetare, rezultate stiintifice, rezumatele articolelor publicate, Intranet etc.

Obiective strategice:

I.N.C.D.T.P. isi propune intensificarea actiunilor care sa conduca la obtinerea unui factor de impact, acordat de ISI Thompson revistei Industria Textila, cat mai ridicat, prin:
• largirea colegiului de redactie, prin cooptarea de noi membri de inalta valoare profesionala si recunoastere internationala;
• mentinerea si, daca este posibil, dezvoltarea schimbului de reviste tehnico-stiintifice cu acelasi profil;
• atragerea de noi autori, din diferite zone geografice, care sa ridice prestigiul stiintific al revistei;
• cresterea calitatii si nivelului stiintific al articolelor publicate;
• adaptarea continua a structurii si continutului revistelor de specialitate, care apar in Editura Certex – Industria Textila si Revista de Pielarie si Incaltaminte – la cerintele actuale ale

12 Publishing activity

speciality magazines edited by Certex Publish-ing House – Industria Textilă and Revista de Pielărie şi Încălţăminte – have, to the present requests the textiles and leather-footwear sector imposes;

• editing and publishing of 5-6 books/year, for CERTEX Publishing House development;

• participation to profile fairs, conferences, exhibitions:

- national – 7-8/year,
- international – 4-5/year;

• continuous personnel skills up-grading, to enlarge the range of competences and abilities the staff em-ploys in its activity, as well as to keep the pace with new technical and professional training emergences and requests;

• acquisition of performance equipments for quality increase of the materials published and for the decrease of editing/ printing costs;

• improve the efficiency of the promotional activity, in view of increasing the number of subscriptions, for the obtaining of sponsorships and to maximally valorize the space dedicated to advertisements etc.

I.N.C.D.T.P. intends to achieve the CNCSIS accreditation for Revistei de Pielărie şi Încălţăminte magazine in Group B, accreditation found in progress.

sectorului de textile-pielarie-incaltaminte;

• editarea si tiparirea a 5-6 carti/an, in vederea dezvoltarii editurii CERTEX;

• participarea la targuri, conferinte, expozitii de profil:

- nationale – 7-8/an,
- internationale – 4-5/an;

• perfectionarea continua a personalului, pentru largirea paletei competentelor si abilitatilor acestuia, dar si pentru a tine pasul cu noile aparitii si cerinte tehnice si de formare profesionala;

• achizitia de echipamente performante, pentru cresterea calitatii materialelor publicate si pentru scaderea costurilor de editare;

• eficientizarea activitatii de promovare, in vederea cresterii numarului de abonamente, a obtinerii de sponsorizarii si a fructificarii spatiului destinat tiparirii de reclame etc.

I.N.C.D.T.P. isi propune obtinerea acreditarii Revistei de Pielarie si Incaltaminte in grupa B, CNCSIS, aceasta fiind in curs de evaluare.

13 Scientific events

NATIONAL AND INTERNATIONAL SCIENTIFIC EVENTS 2008

Dissemination of results achieved in the research-development activity, the exchange of ideas and the identification of trends at European and international level, partnerships forming and projects development within national and European R&D&I programs, technology transfer and the creation of an innovative level within SMEs constitute the main objectives of specialists participation to national and international scientific events.

Present economical context also imposed other objectives that led to the purposeful participation in scientific events, these being especially related to:

- The promotion of Romanian interests in the field of textiles, clothing and leather, by representation within some actions taking place at European level, organized under the aegis: EURATEX, TEXTRANET, EARTO, INSME, European Charta and Code for Researchers and European Fashion Council;
- The support of Romanian research integration into the thematic areas of European and international programmes through the participation to national and international research projects;
- The creation of new research opportunities and partnerships at European Union level – Framework Programme VII, Eureka, Life, bilateral cooperation, as well as at national level etc., along with the development of new research thematic areas;
- The informing and documentation regarding novelties and trends registered in the field of technologies, machinery, raw materials, both on national, and on European and international plan in the field of interest;
- The training up-grading of human resources involved in the research-development activity, in line with the E.U. requests for the field.

CONRO – 2008

Participation in national and international scientific events is practically concretized by:

• National and international work meetings of the groups of experts belonging to the Platform of Technology for Textiles and Clothing;
• National and international conferences and congresses: either as guests or as participants presenting papers, posters on various research activity fields;

MANIFESTARI STIINTIFICE INTERNE SI INTERNATIONALE, IN ANUL 2008

Diseminarea rezultatelor obtinute in activitatea de cercetare-dezvoltare, schimbul de idei si identificarea tendintelor la nivel european si international, formarea de parteneriate si dezvoltarea de proiecte in programele nationale si europene de CDI, realizarea transferului tehnologic, crearea gradului de innovare al IMM-urilor, constituie obiectivele principale ale participarii specialistilor la manifestarile stiintifice interne si internationale.

Contextul economic actual, a impus si alte obiective in baza carora sunt realizate participarile la manifestari stiintifice, acestea fiind in special:

- Promovarea intereselor Romaniei in domeniul textile, confectii si pielarie prin reprezentarea in cadrul unor actiuni ce se desfasoara la nivel European, organizate sub egida: EURATEX, TEXTRANET, EARTO, INSME, Carta si Codul Cercetatorului si European Fashion Council;
- Sustinerea integrarii cercetarii romanesti in ariile tematice ale programelor europene si internationale prin participarea la proiectele de cercetare nationale si internationale;
- Crearea de noi oportunitati si parteneriate de cercetare la nivelul Uniunii Europene, in cadrul Programului Cadru VII, Eureka, Life, cooperare bilaterala, precum si la nivel national etc., dezvoltarea de noi arii tematice de cercetare;
- Informare, documentare, privind noutatile si tendintele in domeniul tehnologiilor, utilajelor, materiilor prime, pe plan national european si mondial in domeniul propriu de activitate;
- Specializarea resursei umane din activitatea de cercetare-dezvoltare, alinierea la cerintele U.E. in domeniu.

Participarea la manifestari stiintifice pe plan national si international se realizeaza in principal prin:

• Intalniri de lucru nationale si internationale ale grupurilor de experti ai Platformei Tehnologice pentru Textile si Confectii;
• Conferinte nationale si internationale, congrese: in calitate de invitati sau participanti cu prezentare de referate, postere pe diferite domenii ale activitatii de cercetare;
• Simpozioane, seminarii, workshopuri nationale si internationale;

13 Scientific events

• National and international symposiums, seminars, workshops;
• Works of the programmes managing the R&D&I projects at national and international level;
• Fairs, salons, exhibitions;

Participation in invention salons, fairs and exhibitions with tradition organized on yearly basis:
• Hanovra International Fair
• International Exhibition of Inventions, New Techniques and Products of Geneva,
• European Research and Innovation Salon in Paris
• International Salon of Inventors in Croatia - ARCA
• INVENTIKA – International Salon of Research, Inventions and New Technologies – organized by Romexpo Bucharest
• World Exhibition of Innovation, Research and New Technology EUREKA
• SALON INTERSELECTION PARIS-2008 "BIO-PHOTONIC CLOTHING"

In 2008, there have been registered 190 participations in scientific events, of which 84 national and 106 international, generally focused on the specified objectives:

• National and international work meetings of the groups of experts belonging to the Platform of Technology for Textiles and Clothing:
- 3rd Annual Conference of the Technology Platform, Brussels, Belgium

• National and international conferences and congresses: either as guests or as participants presenting papers, posters on various research activity fields:
- International Conference – Sericulture in the 3rd Millennium – Tradition and Top Biotechnology FP7 - Seristech 2008
- National Conference of University Scientific Research – CNCSIS 10
- 12th International Conference of Inventions
- Conference "Excellence Research - A way to innovation"
- 8th World Biomaterials Congress, Amsterdam, The Netherlands
- 2nd EuCheMS Chemistry Congress, Torino, Italy
- CHEMPOR – 10th International Chemical and Biological Engineering Conference, Braga, Portugal
- Conference Environmental Management Accounting and

Projects advertising

• Lucrari ale programelor care gestioneaza proiectele de CDI la nivel national si international;
• Targuri, saloane, expozitii.

Participarea la saloanele de inventii, targurile si expozitiile cu traditie, organizate anual:
• Targul International Hanovra;
• Salonul International al Inventiilor, Tehnicilor si Produselor Noi Geneva;
• Salonul European al Cercetarii si Inovarii Paris;
• Salonul international al Inventatorilor din Croatia ARCA;
• Salonul Cercetarii si Salonul International de Inventii si Tehnologii Noi – INVENTIKA organizat la Romexpo Bucuresti;
• Salonul Mondial al Inovarii, Cercetarii si Noilor Tehnologii Eureka;
• Salon Interselection Paris-2008 „BIO-PHOTONIC CLOTHING".

In anul 2008, au fost inregistrate un numar de 190 participari la manifestari stiintifice, din care: 84 nationale si 106 la manifestari internationale, axate in principal pe directiile mentionate:

• Intalniri de lucru nationale si internationale ale grupurilor de experti ai Platformei Tehnologice pentru Textile si Confectii:
- 3rd Annual Conference of the Technology Platform, Bruxelles, Belgia;

• Conferinte nationale si internationale, congrese : in calitate de invitati sau participanti cu prezentare de referate, postere pe diferite domenii ale activitatii de cercetare:
- Conferinta internationala Sericicultura in mileniul 3 - Traditie si Biotehnologie de varf in FP7 - Seristech 2008,
- Conferinta Nationala a Cercetarii Stiintifice din Invatamantul Superior – CNCSIS 10;
- Cea de-a XII-a Conferinta Internationala de Inventica;
- Conference Excellence Research - A way to innovation;
- 8th World Biomaterials Congress, Amsterdam, Olanda;
- 2nd EuCheMS Chemistry Congress, Torino, Italia
- CHEMPOR – 10th International Chemical and Biological Engineering Conference, Braga, Portugalia;
- Conference Environmental Management Accouting and Sustainable Supply Chains, Helsinki, Finlanda,

13 Scientific events

Sustainable Supply Chains, Helsinki, Finland
- 42nd World Polymer Congress – "Macro 2008", Taipei, China
- ECSM'08 - European Conference on Sludge Management, Liege, Belgium
- 7th World Surfactants Congress CESIO 2008, Paris, France
- 2nd International IUPAC Conference on Green Chemistry, Moscow, Russia
- Conference - Diaspora in Romanian Scientific Research
- 9th European Conference E - COMM – LINE 2008
- International Conference on Eco Technologies and Materials E C O M A T 2008
- National Conference – "Scientific Research in Mass Media – What the professionals in research and mass-media think about it?"
- International Conference on Biomaterials and Medical Devices – BIOMMEDD'2008
- 2nd Congress of CNCIR Association

• National and international symposiums, seminars, workshops:
- International Symposium on R&D Outsourcing and Smartsourcing
- 6th International Symposium Molecular Order and Mobility in Polymer Systems, St. Petersburg, Russia
- 22nd IUPAC Symposium on Photochemistry, Gothenburg, Sweden
- International Seminar and Workshop – Conservation and Restoration of Parchments, Torino, Italy
- 9th National Symposium for Colloids and Surfaces Chemistry,
- Workshop on the topic: University and the economical environment: knowledge, products and technology transfer
- Forum of Romanian Women Entrepreneurs
- XXVI Annual Meeting of SNBC, Cluj-Napoca
- 2nd National Forum for Sustainable Development and Environmental Protection
- National Seminar on Nanoscience and Nanotechnology – 7th Edition
- Workshop – Biomaterials and Tissue Engineering
- Symposium: Human Resources in the Textile-Leather Field
- Scientific Symposium Technological Advance – A Research Result
- Seminar: Effective Participation to Best Known Fashion Fairs in the World, part of the project Sustainable Export Development in Romania
- National Symposium – Innovative Products and Processes
- The 42nd World Polymer Congress -"Macro 2008", Taipei, China;
- ECSM'08 - European Conference on Sludge Management, Liege, Belgia;
- 7th World Surfactants Congress CESIO 2008, Paris, Franta;
- 2nd International IUPAC Conference on Green Chemistry, Moscova, Rusia,
- Conferita Diaspora in Cercetarea Stiintifica Romaneasca;
- A 9-a Conferita Europeana E - COMM – LINE 2008;
- Conferinta Internationala privind Tehnologiile si Materialele Ecologice E C O M A T 2008;
- Conferinta Nationala Cercetarea stiintifica in mass media – ce cred profesionistii din cercetare si cei din mass – media;
- Conferinta Internationala de Biomateriale si Dispozitive Medicale BIOMMEDD'2008
- Al II-lea Congres al Asociatiei CNCIR

• Simpozioane, seminarii şi workshopuri nationale si internationale:
- International Symposium on R&D Outsourcing and Smartsourcing,
- 6th International Symposium Molecular Order and Mobility in Polymer Systems, St. Petersburg, Rusia;
- 22nd IUPAC Symposium on Photochemistry, Gothenburg, Suedia;
- International Seminar and Workshop – Conservation and Restoration of Parchments, Torino, Italia;
- Al-IX-lea Simpozion National de Chimia Coloizilor si Suprafetelor;
- Workshop cu tema: Universitatea si mediul economic: transfer de cunostinte, produse si tehnologii;
- Forumul Femeilor Intreprinzatoare din Romania;
- A XXVI-a intalnire anuala a SNBC, Cluj-Napoca;
- Al 2-lea Forum National pentru Dezvoltare Durabila si Protectia Mediului;
- Seminarul National de Nanostiinta si Nanotehnologie – a 7-a editie;
- Workshop - Biomaterialele si Ingineria tisulara;
- Simpozion: Resurse umane in domeniul textile pielarie;
- Simpozionul Stiintific Progresul Tehnologic – Rezultat al Cercetarii;
- Seminarul: Participarea in mod eficient la cele mai cunoscute targuri de moda din lume, parte a proiectului Dezvoltarea Sustenabila a Exportului in Romania;
- Simpozionul National Promovarea proceselor si produselor inovative;

Promotion
- Technical-Scientific Symposium "Risks Assessment for the Occupational Safety and Health"
- XIX Edition of the International Symposium for the Educational Staff and Experts on the topic – Post-accession Strategies for Romania's Sustainable Development in the European and Global Context
- VI Edition of the Textile Industry Forum – Tradition and Professionalism
- Seminar on the Invention Patent Role as Technological Innovation Instrument within Universities and for the Technology Transfer of Research Results
- National Preserving-Restoration Session – "Doina Darvas"
- Workshop: Bio-functionalization of implants surface
- INGIMED 2008

• Works of the programmes managing the R&D&I projects at national and international level:

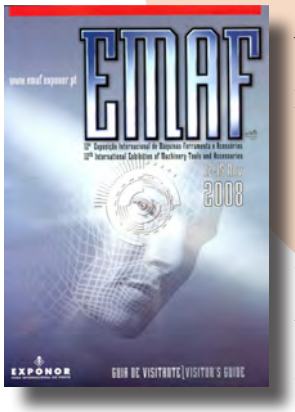
- Project Launching Conference: Gateway to Europe
- SYMPOSIUM Romanian Research visibility after three years of promoting actions within the Research of Excellence Programme, Module III
- Conference on "Research of Excellence – favorable premise of innovation, 2008 Edition
- Symposium on "Priority Fields Partnerships – Elements of contracted projects monitoring
- Round table dedicated to the completion of M-ERA project: "Creation of a supporting mechanism for the determination of scientific indicators applicable for evaluation and the notification of Romanian R&D&I Institutions, except the Academic and University ones, for ERA accession
- Symposiums: New Materials, Micro and Nanotechnologies, MATNANTECH – CEEX – 2nd Edition
- Scientific Session MENER 2008, MENER Programme yearly based scientific session
- International Conference on Aerospatiale Sciences – AEROSPATIAL 2008
- Launch of Calls for Project Proposals within FP-7, FP-7 REGPOT-2009-1 and FP-7 REGPOT-2009-2
- Annual Conference on the implementation of Sectorial Operational Programme – HR Development 2007-2013, in Romania
- International Conference dedicated to Textiles, Cairo, Egypt – 5th International Conference of Textile Research Division – National Research Center
- International Congress of Chemists and Colorists – 21st IFATCC International Congress, Barcelona, Spain

- Simpozionul tehnic-stiintific Evaluarea riscurilor – Locurilor de munca sigure si sanatoase;
- Editia a XIX-a a Simpozionului international al cadrelor didactice si expertilor cu tematica Strategii postaderare pentru dezvoltarea durabila a romaniei in context european si mondial;
- A VI-a editie a Forumului industriei textile – traditie si profesionalism;
- Seminar Rolul brevetului de inventie ca instrument al inovarii tehnologice din universitati si tranferul tehnologic al rezultatelor activitatii de cercetare;
- Sesiunea Nationalade Conservare - Restaurare Doina Darvas;
- Workshop: Biofunctionalizarea suprafetei implanturilor;
- INGIMED 2008.

• Lucrari ale programelor care gestioneaza proiectele de CDI la nivel national si international:

- Conferita de lansare proiect: Gateway to Europe;
- SIMPOZION Vizibilitatea cercetarii romanesti dupa 3 ani de actiuni de promovare prin Programul Cercetare de Excelenta Modul III;
- Conferita Cercetarea de excelenta- premiza favorabila pentru inovare, editia 2008;
- Simpozion cu tema: Parteneriate in domeniile prioritere - elementele monitorizarii proiectelor contractate;
- Masa rotunda cu ocazia finalizarii proiectului M-ERA cu tema: Crearea unui mecanism suport de determinare a indicatorilor stiintifici pentru evaluarea si atestarea institutiilor romanesti de C-D-I, nu cele academice si universitare, in perspectiva aderarii la ERA;
- Simpozioanele: Materiale Noi, Micro si Nanotehnologii, MATNANTECH – CEEX-2 editii;
- Sesiunea Stiintifica MENER 2008, sesiunea stiintifica anuala a programului MENER;
- Conferinta Internationala de Stiinte Aerospatiale AEROSPATIAL 2008;
- Lansare apeluri propuneri de proiecte PC7 FP-7 REGPOT-2009-1 si FP-7 REGPOT-2009-2;
- Conferinta anuala privind implementarea Programului Operational Sectorial Dezvoltarea Resurselor Umane 2007 – 2013 in Romania;
- Conferinta internationala textile Cairo Egipt – 5th International Conference of Textile Research Division – National Research Center;
- Congresul International al Chimistilor Coloristi – 21th IFATCC International Congress, Barcelona, Spania;

- Ivanovo Textile Conference, Russia – PROGRESS 2008
- Acireale International Conference, Sicilia – 3rd International Conference Smart Materials Structure Systems
- International Congress on Knits – IFKT – St. Petersburg, Russia
- International Conference on Recycling – REWAS 2008, Cancun, Mexico



• International fairs, salons, and exhibitions:

- 36th International Exhibition of Inventions – GENEVA
- Hannover Messe 2008 – International Machine tool and Tools Fair
- European Research and Innovation Exhibition, Paris Expo – Porte de Versailles – France
- International Salon of Inventors in Croatia - ARCA 2008, Zagreb
- 2nd Inventions Fair in the Middle East – 2008
- 57th Edition of Eureka International Competition – Brussels
- 12th International Exhibition of Machine-Tools and Accessories – EMAF, Porto, Portugal

• National fairs, salons, and exhibitions:

- The 40th TINIMTEX – the 40-42nd Editions of the National Clothing and Footwear Fair
- International Fair of Textile Materials, Services and Accessories for the Textile Industry
- INVENTICA IASI 2008 – XII International Salon of Research, Inventions and Technology Transfer
- International Home and Design Textiles Fair – LINEA BIANCA ROMANIA
- Regional Research Salons – 2008 PRO INVENT, 2nd Edition
- MODEXPO – International Exhibition of Textile Fabrics, Clothing and Accessories, XIV Edition
- 2008 BSDA International Exhibition and Conference – Black Sea Defense & Aerospace
- Exhibition of Romanian Research Achievements – RESEARCH SALON 2008, INVENTIKA 2008 and BROKERAGE EVENT
- FALL FAIR – CONFINTEXPO
- 6th Edition of ROMANIAFABRICDAYS Fair – International Fair of Textile Fabrics, Services and Accessories for the Clothing Industry

- Conferinta textile Ivanovo Rusia – PROGRESS 2008;
- Conferinta internationala Acireale, Sicilia – 3th International Conference Smart Materials Structure Systems;
- Congresul international in domeniul tricotajelor – IFKT- St. Petersburg, Rusia;
- Conferinta internationala in domeniul reciclării – REWAS 2008, Cancun, Mexic.

• Targuri, saloane, expozitii internationale:

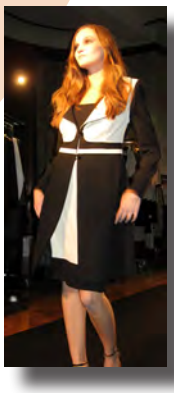
- Cel de-al Salon International al Inventiilor – GENEVA;
- Hannover Messe 2008- Târg international masini unelte
- Salonul International de cercetare/inovare Paris, Porte Versailles ;
- Salonul International al Inventiilor: ARCA 2008 Zagreb;
- Cel de-al doilea for al Inventiilor in Orientul Mijlociu - 2008;
- Cea de-a 57 editie a concursului international Brussels- Eureka;
- 12th International Exhibition of Machine-Tools and Accessories - EMAF, Porto, Portugalia.

• Targuri, saloane, expozitii nationale:

- TINIMTEX – a 40 –a editile 40-42 Targ National de Imbracaminte si Incaltaminte;
- Targ International de Materiale Textile, Servicii si Accesorii pentru Industria Textila;
- INVENTICA IASI 2008: Cel de-al XII-lea Salon International al Cercetarii, Inventiilor si Transferului Tehnologic;
- Targ International de textile de interior si articole decorative LINEA BIANCA ROMANIA;
- Saloanele Regionale ale Cercetarii – 2008 PRO INVENT, editia a - 2-a;
- MODEXPO – Expozitie internationala de tesaturi textile, imbracaminte, accesorii - editia a XIV-a;
- Expozitia Internationala si Conferita BSDA- 2008, Black Sea Defense & Aerospace;
- Expozitia realizarilor cercetarii romanesti – SALONUL CERCETARII - 2008, INVENTIKA 2008 si BROKERAGE;
- TARG de TOAMNA – CONFINTEXPO;
- A 6-a editie a targului ROMANIAFABRICDAYS - Targ International de Materiale Textile, Servicii si Accesorii pentru Industria de Confectii.

13 Scientific events

In December, together with the representatives of 10 Romanian companies, INCDTP participated in the Romanian Economical Mission to Paris. This was aimed to promote the Romanian Textile and Clothing Industry, informing over the penetration routes to the French market of the Romanian companies, including bilateral debates, information / idea exchanges, networking with French shop owners, retailers and traders, as well as with international fairs organizers, and raw material contracting.



In 2008, INCDTP actively participated in the so-called "INNOVATION CARAVAN" – project initiated by A.N.C.S. and directed to support the increase of Romanian companies competitiveness by use of national research results. Since the launch of this action, August 28, the institute took part in all the editions organized in Romanian development regions.

Within the events announced, there have been presented the research activity accomplishments: Kevlar gloves, sorts of blasting, medical articles, technical fabrics etc.

The participation to the actions organized by the Innovation Caravan created the opportunities of some collaborations with businesses interested in taking over the results of researches conducted within I.N.C.D.T.P. and of settling some partnerships within research projects on topics like: anthropometric measurements, environmental monitoring for filters efficacy by means of surface treatments and textiles structural modifications, clothing standards, and the use of enzymes in the textile industry for the finishing processes.

I.N.C.D.T.P. organizes, on yearly basis, symposiums with national and international participation on various fields of activity, enjoying a large attendance and ending up with remarkable results, but also workshops for its research projects. In 2008, I.N.C.D.T.P. organized 5 scientific events and over 10 workshops, of which there could be specified:

- International Conference: TECHNICAL TEXTILES – MULTI-DISCIPLINARY FIELD – Textiles in the medical field and protective equipments and Textiles for aeronautics and industrial applications
- RESEARCH TRENDS IN THE TEXTILE-LEATHER FIELD with an exhibition and two workshops – TEXTILES FOR THE FUTURE and MODERN FINISHING TECHNOLOGIES IN THE LEATHER INDUSTRY
- International Symposium: EUROPEAN STAN-

In luna decembrie, INCDTP a participat la Misiunea Economica de la Paris, impreuna cu reprezentanti ale altor 10 firme romanesti. Misiunea a avut ca scop promovarea industriei romanesti de textile si confectii, informarea asupra cailor de intrare a firmelor romanesti de textile pe piata franceza, discutii bilaterale, schimb de idei/informatii, stabilirea de contacte cu proprietarii de magazine, comerciantii francezi, organizatorii targurilor internationale si contractarii de materii prime.

In anul 2008, INCDTP a participat activ la CARAVANA INOVARII - proiect initiat de A.N.C.S. si avand drept scop sustinerea cresterii competitivitatii companiilor romanesti utilizand rezultatele cercetarii nationale. De la lansarea acestei actiuni in data de 28 august, institutul a partcipat la toate editiile, care au avut loc in regiunile de dezvoltare ale Romaniei.

In cadrul acestor manifestari au fost prezentare realizarile din activitarea de cercetare: manusi din Kevlar, sorturi pentru sablare, articole medicale, tesaturi tehnice etc.

Participarea la actiunile organizate de Caravana Inovarii a creat premisele unor colaborari cu agenti economici interesati in preluarea rezultatelor cercetarilor derulate in I.N.C.D.T.P., stabilirea unor parteneriate in cadrul unor proiecte de cercetare, avand ca tematica: masuratorile antropometrice, monitorizarea mediului, pentru eficacitatea filtrarii in tratamente de suprafata si modificari de structura a textilelor, standarde pentru confectii, utilizarea enzimelor in finisajul din industria textila.

Anual, I.N.C.D.T.P. organizeaza simpozioane cu participare nationala si internationala, pe diverse domenii de activitate, care se bucura de o larga participare, si care se finalizeaza cu rezultate remarcabile, precum si workshop-uri, in cadrul proiectelor de cercetare. In 2008, I.N.C.D.T.P. a organizat 5 manifestari stiintifice si peste 10 workshop-uri, din care se mentioneaza:

- Conferinta Internationala: TEXTILE TEHNICE - DOMENIU MULTIDISCIPLINAR - Textile in medicina si echipamente de protectie si Textile in aeronautica si industrie;
- TENDINTE IN CERCETAREA DIN DOMENIULTEXTILE-PIELARIE cu o expozitie si doua workshop-uri TEXTILE PENTRU VIITOR si TEHNOLOGII MODERNE DE FINISARE IN INDUSTRIA DE PIELARIE;
- Simpozion international: STANDARDIZAREA EUROPEANA SI IMPACTUL ASUPRA SECTORULUI TEXTIL;

DARDIZATION AND ITS IMPACT OVER THE TEXTILE SECTOR
- I.N.C.D.T.P. CONTRIBUTION TO THE EUROPEAN RESEARCH AREA – international conference TEXTRA-NET/GEDRT
- International Conference I.C.A.M.S. 2008
- Workshop – POLE OF EXCELLENCE IN THE FIELD OF TECHNICAL TEXTILES with industrial applications, strategic fields and health – <IND-STRA-MED-Tex>
- Workshop – FUNCTIONALIZED TEXTILE PRODUCTS FOR ENHANCED HUMAN PERFORMANCE
- Workshop – Promotion of results achieved along the projects in progress within Nucleus Programme CERTEXPEL

Within the scientific events listed, a number of 185 scientific papers and posters were delivered.

The efficiency of these participations in events was proven by:
• The increase of visibility for the Romanian research, especially the one performed by INCDTP;
• Participation as partners in European projects within FP 7, Leonardo da Vinci, Life, Eureka;
• The elaboration of a unified system covering the scientific and technical references for the communitarian policies formulation and implementation;
• Set some collaboration relationships with different European organizations involved in the elaboration of research policies: EPWS – European Platform of Women Scientists and European Charter for Researches and Code of Conduct for the Recruitment of Researches;
• The improve of attractiveness for the scientific career and its European dimension;
• The winning of awards and diplomas granted as a sign of acknowledgement for the activity unfolded by I.N.C.D.T.P. specialists

Thus, there have been awarded 31 diplomas and medals, of which: 9 gold medals, 7 silver medals and 5 bronze medals.

Among the special prizes won by I.N.C.D.T.P. in 2008, there could be specified:

- 2nd place "TOP BUCURESTI 2007", granted by the Bucharest Chamber of Commerce and Industry – XV Edition, November 2008
- 1st place "TOP SECTOR 3, 2007", granted by the Bucharest Chamber of Commerce and Industry and District 3 City

- CONTRIBUTIA I.N.C.D.T.P. LA ARIA EUROPEANA DE CERCETARE - conferinta Internationala TEXTRA-NET/GEDRT;
- Conferinta internationala - I.C.A.M.S. 2008;
- Workshop-ul POL DE EXCELENTA IN DOMENIUL TEXTILELOR TEHNICE cu aplicatii in industrie, domenii strategice si medicina <IND-STRA-MED-Tex>;
- Workshop-ul PRODUSE TEXTILE FUNCTIONALIZATE PENTRU O PERFORMANTA UMANA IMBUNATATITA;
- Workshop-ul - PROMOVAREA REZULTATELOR OBTINUTE IN DERULAREA PROIECTELOR DIN CADRUL PROGRAMULUI NUCLEU CERTEXPEL.

In cadrul manifestarilor stiintifice au fost sustinute un numar de 185 lucrari stiintifice si postere.
Eficienta participarii la aceste manifestari s-a materializat prin:
• Cresterea vizibilitatii cercetarii romanesti si in special a cercetarii desfasurate de INCDTP;
• Participarea ca parteneri la proiecte europene in cadrul PC 7, Leonardo da Vinci, Life, Eureka;
• Realizarea unui sistem unitar de referinte stiintifice si tehnice, pentru formularea si implementarea politicilor comunitare;
• Stabilirea unor relatii de colaborare cu diferite organizatii europene care realizeaza politicile in domeniul cercetarii: EPWS – European Platform of Women Scientists si European Charter for Researches and Code of Conduct for Recruitment of Researches;
• Cresterea atractivitatii carierei stiintifice si a dimensiunii ei europene;

Obtinerea de premii si diplome ca semn al recunoasterii activitatii depuse de specialistii I.N.C.D.T.P.; au fost obtinute astfel 31 de diplome si medalii, dintre care : 9 medalii de aur, 7 medalii de argint, 5 medalii de bronz.

Dintre premiile speciale obtinute de I.N.C.D.T.P., in anul se 2008, se mentioneaza:

- Locul 2 "TOP BUCURESTI 2007" - acordat de Camera de Comert si Industrie a Municipiului Bucuresti – editia a XV-a

Hall – 11th Edition, November 2008
- 1st place - "CREATIVITY TROPHY – SECTION RESEARCH-EDUCATION", granted by the State Office of Inventions and Trademark for the Bucharest City Stage, VII Edition

• I Prize "EXCELLENCE IN RESEARCH 2008" for the R&D projects, priority field – Innovative Materials, Processes and Products, for the project entitled "Multifunctional Technical Textiles for Protective Equipments", author PhD Candidate Eng. Doina Toma, October 2008
• I Prize "EXCELLENCE IN RESEARCH 2008" for the R&D projects, priority field: Biotechnologies, for the project "Bio-compost based on organic wastes (proteic and cellulosic) for a competitive agriculture", author PhD Candidate Eng. Gabriel Zainescu, October 2008
• III Prize "EXCELLENCE IN RESEARCH 2008" for the R&D projects, priority field: Agriculture, Food Safety and Security, for the project "Textile covers for agricultural crops protection", author Eng. Maria Dan, October 2008
• III Prize "EXCELLENCE IN RESEARCH 2008" for the R&D projects, priority field: Environment, for the project "Researches on the achievement of eco-technologies meant for the leather sector, to contribute the environmental protection, life quality enhancement and technological competitiveness increase", author Dr. Eng. Viorica Deselnicu, October 2008

• Diploma and Gold Medal "International Invention Fair of the Middle East", 2nd Edition, organized by the Kuwait Science Club, under the patronage of Great Amir, 9-13 November 2008, for the "Vascular Prostheses and Manufacturing Procedures", authors PhD. Candidate Eng. Alexandra Gabriela Ene, Dr. Eng. Carmen Mihai

• I Prize and FIRI Diploma granted by the President of the First Institute of Inventors and Researchers – I.R. of IRAN – "International Invention Fair of the Middle East", 2nd Edition, organized by the Kuwait Science Club, under the

, noiembrie 2008;
- Locul 1 "TOP SECTOR 3, 2007" - acordat de Camera de Comert si Industrie a Municipiului Bucuresti si Primaria Sector 3 - editia a 11-a , noiembrie 2008;
- Locul 1 "TROFEUL CREATIVITATII - SECTIUNEA CERCETARE-INVATAMANT " - acordat de Oficiul de Stat pentru Inventii si Marci, Etapa Municipiul Bucuresti, editia a VII-a;

• Premiul I " EXCELENTA IN CERCETARE 2008" pentru Proiecte de cercetare- dezvoltare in domeniul prioritar: materiale, procese si produse inovative - proiectul "Textile tehnice multifunctionale pentru imbracaminte de protectie" - autor drd. ing. Toma Doina, octombrie 2008;
• Premiul I " EXCELENTA IN CERCETARE 2008" pentru Proiecte de cercetare-dezvoltare domeniul prioritar: biotehnologii - proiectul "Biocompost pe baza de deseuri organice (proteice si celulozice) pentru o agricultura competitiva" - autor drd. ing. Gabriel Zainescu, octombrie 2008;
• Premiul III " EXCELENTA IN CERCETARE 2008"pentru Proiecte de cercetare dezvoltare domeniul prioritar: agricultura, securitate si siguranta alimentara - proiectul "Invelitori textile pentru protejarea culturilor agricole" - autor ing. Dan Maria, octombrie 2008;
• Premiul III " EXCELENTA IN CERCETARE 2008" pentru Proiecte de cercetare dezvoltare domeniul prioritar: mediu - pentru proiectul "Cercetari privind realizarea de ecotehnologii destinate sectorului de pielarie, care sa contribuie la protectia mediului, imbunatatirea calitatii vietii si cresterea competitivitatii tehnologice" - autor dr. ing. Deselnicu Viorica, octombrie 2008;

• Diploma si Medalia de aur "Targul International de Inventii din Orientul Mijlociu", editia a 2-a - organizat de Clubul de Stiinta din Kuweit, sub patronajul marelui Amir, in 9-13 noiembrie 2008 – pentru "Proteze vasculare si procedeu de obtinere" - autor drd. ing. Ene Alexandra Gabriela si dr. ing. Mihai Carmen;

• Premiul I si Diploma FIRI din partea Presedintelui Primului Institut de Inventatori si Cercetatori din I.R. IRAN "Targul

patronage of Great Amir, 9-13 November 2008, for the "Vascular Prostheses and Manufacturing Procedures", authors PhD. Candidate Eng. Alexandra Gabriela Ene, Dr. Eng. Carmen Mihai

MOST PRIZED WORKS in 2008 were:

- Braiding Machine for Square Cross-Section Textile Cord – authors PhD Candidate Eng. Daniela Bucur, Dr. Eng. Emilia Visileanu, Chief Operator Nicolae Dobre, Eng. Cristian Jipa, Prof. Dr. Eng. Ioan Cioara - 5 awards

- Product and Technology for leather pre-tanning - author Dr. Eng. Viorica Deselnicu - 3 awards

2009 STRATEGY of THE NATIONAL AND INTERNATIONAL SCIENTIFIC EVENTS

In the present economical as well as political context, the priorities set by any business is at least to keep an acceptable level of its economic stability, and, where the context would be favorable, to take an upward trend of the economical indicators.

For I.N.C.D.T.P., 2009 challenges will consist in maintaining the research, production, services and connected activities to present standards, both from the quality viewpoint, and from the quantity one, and the achievement of a notable economical growth, fact very sensitive to the national/international social-economical progress.

One of the important economical indicators I.N.C.D.T.P. presents, as a result of the institute basic activity, research activity unfolded on the national, and the international plan, is its participation to national and international scientific events.

For the year 2009, there have been created the favorable opportunities for the participation in scientific events since early 2008, by registration with posters and papers or confirmation for the participation in national or international scientific events.

At the same time, the draft for the future schedule of participations to the national and international events was conceived to be further subjected to debate and approval by the

International de Inventii din Orientul Mijlociu", editia a 2-a - organizat de Clubul de Stiinta din Kuweit, sub patronajul marelui Amir, in 9-13 noiembrie 2008 – pentru "Proteze vasculare si procedeu de obtinere" - autori drd. ing. Ene Alexandra Gabriela si dr. ing. Mihai Carmen

CELE MAI PREMIATE LUCRARI, in anul 2008, au fost :

- Masina de impletit snur textil cu sectiune patrata - autori drd. ing. Bucur Daniela, dr. ing. Emilia Visileanu, Maistru Nicolae Dobre, sing. Cristian Jipa, prof. dr. ing. Ioan Cioara - 5 premii;
- Produs si tehnologie de pretabacire a pieilor - autor dr. ing. Viorica Deselnicu - 3 premii.

STRATEGIA 2009 PRIVIND MANIFESTARILE STIINTIFICE INTERNE SI INTERNATIONALE

In actualul context economic, dar si politic, prioritatile fiecarei unitati economice sunt pastrarea stabilitatii economice la un nivel acceptabil si obtinerea unui trend ascendent al indicatorilor economici - acolo unde contextul va permite.

Pentru I.N.C.D.T.P., provocarile anului 2009 vor fi mentinerea activitatii de cercetare, productie, servicii si a activitatilor conexe la standardele actuale, atat din punct de vedere calitativ, cat si din punct de vedere cantitativ, precum si obtinerea unei cresteri economice sesizabile - in functie de evolutia socio-economica nationala/internationala.

Unul dintre indicatorii economici importanti ai I.N.C.D.T.P. - ca rezultat al activitatii de baza a institutului, si anume activitatea de cercetare derulata pe plan national si international - il constituie participarea la manifestarile stiintifice interne si internationale.

Pentru anul 2009, au fost create premisele participarii la manifestarile stiintifice inca din 2008, prin inscrierea cu postere, referate sau confirmarea participarii la activitatile stiintifice interne sau internationale.

Totodata, a fost intocmit proiectul de Plan de participari la manifestari stiintifice interne si internationale, care a fost supus dezbaterii si a fost aprobat de Consiliul de Admin-

13 Scientific events

Managing Board. The schedule will be permanently up-dated depending on opportunities arisen during the year.

In 2009, considering the present economic context, the managing strategy in the field supposes only the participation in the scientific events organized either nationally or internationally, to which posters/papers were already accepted. Each travel will be analyzed from its potential of valorization, from the viewpoint of the financial resources extant within the research projects, each poster or paper being also subjected to the Scientific Board approval, after the analysis.

For 2009, I.N.C.D.T.P. intends to organize an international scientific event, respectively:

The International Conference TEX TECH II – projected to take place in May 2009. For this event, the offer was already submitted to MECI-ANCS in view of evaluation and for funds granting.

istratie. Proiectul va fi actualizat permanent, in functie de oportunitatile aparute in cursul anului.

In anul 2009, in actualul contex economic, strategia manageriala in domeniu prevede participarea numai la manifeatrile stiintifice organizate pe plan intern si international, la care posterele/referatele stiitifice au fost acceptate. Fiecare deplasare va fi analizata din punct de vedere al oportunitatii realizarii sale, al resurselor de finantare existente in cadrul proiectelor de cercetare, fiecare poster sau referat va fi analizat si supus aprobarii Consiliului Stiintific.

Pentru 2009, I.N.C.D.T.P. si-a propus organizarea unei manifestari stiintifice internationale, respectiv:

Conferinta Internationala TEX TECH II - preconizata a se realiza in cursul lunii mai. Pentru aceasta manifestare, a fost depusa oferta la MECI – ANCS, in vederea evaluarii si a obtinerii finantarii.

14 Relational Frame

According to the strategic directions that INCDTP established as part of its own Development Strategy for 2007-2013 and the vision for 2020, in 2008 the actions for the increasing of the Institute international visibility, the strengthening of its position within the RDI system from Romania and at European level, the increasing of the number of contacts with the national and international partners, continued.

For the purpose of raising the degree of correlation and integration within the European and international research programmes and the increasing of its scientific capacity, in 2008 INCDTP actively developed its activity as part of national and international institution networks and bodies that could become sources of important scientific competence, being able to determine a visible impact in the quality research from Romania.

The forms of collaboration that characterize the relational frame of the Institute are:

- National and international associations and bodies INCDTP is a member of;
- Affiliation within national and international bodies

I. National associations and bodies INCDTP is a member of

AGIR –General Association of the Romanian Engineers The Society of Textilist Engineers (SIT)

As member of this body, INCDTP collaborated with AGIR for the organizing of „the Symposium of the Romanian Engineer from everywhere – SINGRO 2008", September 14th, 2008, AGIR- Bucharest.

INCDTP, being preoccupied with the sustaining of the textile domain, and by the elaboration of materials, publications, books, guidelines and other training activities, the Institute collaborated with SIT-AGIR for the elaboration of „the Encyclopaedical Treaty of Universal History of Textiles" , (vol. 1) and for the elaboration and electronic re-editing of the „Treaty of textile engineering" (5 vol. 6.500 pag.), ASTR coordinator.

In 2008, INCDTP won the AGIR Prize with the theme „Apparatus meant for determining the resistance of flat textile materials to water penetration" – Scientific Researcher, Candidate for a Doctor's Degree Eng. Bucur Daniela, at the contest for the AGIR PRIZES awarded for the engineering papers with outstanding scientific results.

The Research-Development National Institute for Textile and Leather (INCDTP) is assigned by the Romanian Standardization Association

Conform directiilor strategice pe care I.N.C.D.T.P. le-a stabilit in cadrul propriei Strategii de Dezvoltare 2007 -2013 si a viziunii pentru anul 2020, in anul 2008 au continuat actiunile pentru cresterea vizibilitatii internationale a institutului, consolidarea pozitiei sale in sistemul CDI din Romania si la nivel european, şi pentru sporirea contactelor cu partenerii nationali si internationali.

In scopul ridicarii gradului de corelare si integrare in programele europene si internationale de cercetare si a cresterii capacitatii sale stiintifice, I.N.C.D.T.P. a activat in mod activ, in anul 2008, in retele de institutii si organisme, nationale si internationale, care pot deveni surse de competenta stiintifica de referinta, in masura sa determine un impact vizibil in calitatea cercetarii in Romania.

Formele de colaborare, care caracterizeaza cadrul relational al institutului, sunt:

- calitatea de membru a I.N.C.D.T.P. in asociatii si organisme nationale si internationale;
- afilierea la organisme nationale si internationale.

I. Asociatii si organisme nationale in care INCDTP este membru:

AGIR – Asociatia Generala a Inginerilor din Romania şi Societatea Inginerilor Textilisti (SIT)

In calitatea sa de membru al acestui organism, I.N.C.D.T.P. a colaborat cu AGIR pentru organizarea „Simpozionului Inginerului Român de pretutindeni – SINGRO 2008", 14 septembrie 2008, AGIR- Bucureşti.

Inscriindu-se in preocuparile I.N.C.D.T.P., pentru sustinerea domeniului „textile" si prin elaborarea de materiale, publicatii, carti, ghiduri, alte activitati de training, institutul a colaborat cu SIT-AGIR la elaborarea „Tratatului Enciclopedic de Istorie Universală a Textilelor", (vol.1) si la elaborarea si reeditarea in format electronic a „Tratatului de inginerie textila" (5 vol. 6.500 pag.), coordonator ASTR.

In anul 2008, I.N.C.D.T.P. a castigat Premiul AGIR 2007, cu tema „Aparat destinat determinarii rezistentei materialelor textile plane la penetrarea apei" - cerc. st. drd. ing. Bucur Daniela - la concursul pentru PREMIILE AGIR, acordate lucrarilor ingineresti cu rezultate stiintifice deosebite.

Institutul National de Cercetare-Dezvoltare pentru Textile si Pielarie (I.N.C.D.T.P.) este desemnat de Asociatia Romana de Standardizare (ASRO) sa

(ASRO) to ensure the achieving of the standardization programme from Romania, for the textile sector. For this purpose, INCDTP owns the presidency of the Standardization Technical Committee CT 103, „Textiles" and CT 324 „Products for walls and floorings".
Having in view that the standardization creates a common language that allows the producers and suppliers to clearly communicate with the engineers, designers, sale agents, representing an instrument for adjusting the activity processes and results in all the national economy domains, INCDTP participates to this activity in its own activity domain, being by ASRO, a member of CEN/CENELEC. As such, in 2008 INCDTP organized the scientific event „the European Standardization and the impact on the textile sector", which gathered experts in the domain of textile materials and products with various usages: for adult and children clothing, in industry and medicine, famous specialists from European research institutes, from the higher education, experienced researchers and researchers who have important results in:
• the designing and testing of textile materials, dyes, additives used in the textile industry;
• the analysis of the substances which are forbidden by the European Commission;
• the safety of the children clothing.
The debated issues were correlated with the standardization priorities in the textile domain:
- the developing and maintaining of a set of standards for the textile products that should be in accordance with the market requirements;
- the elaboration of relevant standards for the industry in optimum periods of time;
- the collaboration with other international bodies for the coordination of the standardization programmes, with a purpose of eliminating the parallel efforts, possible conflicts, cost reducing.

asigure realizarea programului de standardizare din Romania, pentru sectorul textil. In acest scop, I.N.C.D.T.P. detine presedentia comitetului tehnic de standardizare CT 103, „Textile" si CT 324 „Produse pentru pereti si pardoseli".
Avand in vedere faptul ca standardizarea creeaza un limbaj comun, care permite producatorilor si furnizorilor sa comunice clar cu inginerii, designerii, agentii de vanzari, constituind un instrument de ajustare a proceselor si rezultatelor activitatii in toate domeniile economiei nationale, I.N.C.D.T.P. participa la aceasta activitate in domeniul propriu de activitate, fiind prin ASRO, membru CEN/CENELEC. In aceasta calitate, I.N.C.D.T.P. a organizat, in anul 2008 manifestarea stiintifica „Standardizarea europeana si impactul asupra sectorului textil", care a reunit experti in domeniul materialelor si produselor textile cu utilizari diverse: pentru imbracaminte de adulti sau copii, in industrie si medicina, specialisti recunoscuti din institute de cercetare europene, din invatamantul superior, cercetatori cu experienta şi rezultate deosebite in:
• proiectarea şi testarea materialelor textile, a colorantilor, aditivilor folositi in industria textila;
• analiza substantelor interzise de Comisia Europeana;
• securitatea imbracamintei pentru copii.
Problemele dezbatute s-au corelat cu prioritatile de standardizare in domeniul textil:
- dezvoltarea si mentinerea unui set de standarde pentru produsele textile care sa fie in concordanta cu cerintele pietii;
- elaborarea de standarde relevante pentru industrie si in perioade de timp optime;
- colaborarea cu alte organisme internationale pentru coordonarea programelor de standardizare, in scopul eliminarii eforturilor paralele, a posibilelor conflicte, a reducerii costurilor.

FEPAIUS – The Employers' Federation from the Light Industry

INCDTP, an active member within FEPAIUS, participated by its representatives to scientific events organized in 2008:
• TINIMTEX – the 40th Edition of the National Fair for Clothing and Footwear, February 13 – 17, 2008, Mamaia; the discussions with the representatives of the economic agents had as main objective the training for the elaboration of the self-evaluation reports laid down by the R-D-I units and institutions from this domain;
• The symposium " Support for the development of the enterprises from the textile-leather industry", May 14-18, 2008,

FEPAIUS – Federatia Patronala din Industria Usoara

I.N.C.D.T.P. , membru activ in cadrul FEPAIUS, a participat, prin reprezentantii sai, la evenimentele stiintifice organizate in cursul anului 2008:
• TINIMTEX – a 40 –a editie a Targului National de Imbracaminte si Incaltaminte, 13 – 17 februarie 2008, Mamaia; discutiile purtate cu reprezentantii agentilor economici au avut principalul obiectiv de a realiza o instruire in vederea elaborarii rapoartelor de autoevaluare depuse de unitati si institutii C-D-I din domeniu;
• Simpozionul " Sprijin in dezvoltarea intreprinderilor din industria de textile-pielarie", 14 -18 mai 2008, Mamaia, ocazie

Mamaia, an opportunity to which the INCDTP specialists presented technical-scientific papers: "European Directive REACH and modalities for its application in the textile industry" – Dr. Eng. Emilia Visileanu; "The Regulation for the registration, evaluation, authorization and restraining of chemical products" - authors: Dr. Eng. Iuliana Dumitrescu, Dr. Eng. Emilia Visileanu, Eng. Ana Maria Mocioiu – Fashion Show –"RETRO POETRY" Collection;

• CONFINTEXPO Autumn Fair, organized by FEPAIUS during 3-7 09.2008 in Bacau, where INCDTP participated with the cabin for 3D scanning of the human body anthropometric dimensions

• TINIMTEX – 42th Edition, September 10 - 14, Mamaia;

• MODEXPO – International Exhibition of textile woven fabrics, clothing and accessories, The 14th Edition, September 18-21 , Bucharest;

• The 6th Edition of the ROMANIAFABRICDAYS Fair- International Fair of Textile Materials, Services and Accessories for the Clothing Industry, October 29-31, Bucharest;

• The 6th Edition of THE TEXTILE INDUSTRY FORUM – TRADITION AND PROFESSIONALISM, December 4th, Bucharest; on this occasion the following papers were presented: „Medical devices made of textile materials" authors: Alexandra Ene, Carmen Mihai; „Flight apparatus made of technical textiles" authors: Candidate for a Doctor's Degree Eng. Adrian Salistean, Candidate for a Doctor's Degree Eng. Claudia Niculescu; „Safety parachute for paraglide" author: Candidate for a Doctor's Degree Eng. Claudia Niculescu.

In the domain of leather industry – consumer goods made of rubber, INCDTP is managing an important relational frame, carrying out various collaborations and partnerships as part of various research-development-innovation programmes with numerous institutions: employers' organizations, profit and non-profit associations, government, audit and accreditation bodies, cultural institutions, museums, out of which we can mention:

- OP- PINC – Leather-Footwear Employers' Organization
- The Romanian Association of Rubber Industry
- The Society of Chemistry from Romania
- The Society of Analytical Chemistry from Romania (SCAR)
- the Romanian Society for Interdisciplinary Studies with Applicability in Medicine
- the Romanian Society of Biomaterials (SRB)

II. International associations and bodies INCDTP is a member of EURATEX

The European Apparel and Textile Organization – member by FEPAIUS, contact persons: Emilia VISILEANU, Lutz WALTER.

With the headquarters in Brussels, EURATEX carries out numerous actions for co-

cu care specialistii I.N.C.D.T.P. au prezentat referate tehnico-stiintifice: "Directiva Europeana REACH si modalitati de aplicare in industria textila"– autor dr. ing. Emilia Visileanu; "Regulamentul pentru inregistrarea, evaluarea, autorizarea si restrictionarea chimicalelor" - autori: dr. ing. Iuliana Dumitrescu, dr. ing. Emilia Visileanu, ing. Ana Maria Mocioiu - prezentare moda – Colectia "RETRO POETRY";

• Targul de toamna - CONFINTEXPO, organizat de FEPAIUS, in perioada 3-7 09.2008, la Bacau, la care I.N.C.D.T.P. a participat cu cabina de scanare 3D a dimensiunilor antropometrice ale corpului uman;

• TINIMTEX - Editia a 42-a, 10 - 14 septembrie, Mamaia;

• MODEXPO - Expozitie internationala de tesaturi textile, imbracaminte, accesorii editia a XIV-a, 18-21 septembrie , Bucuresti;

• A 6-a editie a targului ROMANIAFABRICDAYS - Targ international de materiale textile, servicii si accesorii pentru industria de confectii, 29-31 octombrie, Bucuresti;

• A VI-a editie a FORUMULUI INDUSTRIEI TEXTILE – TRADITIE SI PROFESIONALISM, 4 decembrie, Bucuresti; cu aceasta ocazie au fost prezentate referatele: „Dispozitive medicale din materiale textile" - autori: Alexandra Ene, Carmen Mihai; „Aparat de zbor din textile tehnice"- autori: drd. ing. Adrian Salistean, drd. ing. Claudia Niculescu; „Parasuta de siguranta pentru parapanta" - autor: drd. ing. Claudia Niculescu.

In domeniul industriei de pielarie-bunuri de consum din cauciuc, I.N.C.D.T.P. gestioneaza un cadru relational semnificativ, desfasurand colaborari si parteneriate diverse, in cadrul diferitelor programe de cercetare-dezvoltare-inovare, cu numeroase institutii: organizatii patronale, asociatii profit si non-profit, organisme guvernamentale, de audit si acreditare, institutii de cultura, muzee; dintre care:

- OP-PINC - Organizatia Patronala Pielarie Incaltaminte;
- Asociatia Romana a Industriei Cauciucului;
- Societatea de Chimie din Romania;
- Societatea de Chimie analitica din Romania (SCAR);
- Societatea Romana pentru Studii Interdisciplinare cu Aplicabilitate in Medicina;
- Societatea Romana de Biomateriale (SRB).

II. Asociatii si organisme internationale in care INCDTP este membru EURATEX

The European Apparel and Textile Organization – membru prin FEPAIUS, persoane de contact: Emilia VISILEANU, Lutz WALTER.

Cu sediul la Brussels, EURATEX deruleaza numeroase actiuni de coordonare a ac-

ordinating the research activity at European level, within the Technology Platform for Textiles and Clothing:
- calls for expressions of interest –FP7 projects (TEPPIES actions);
- meetings of experts who are members in Thematic Expert Group, as part of the Technology Platform;
- meetings of the specialists in the field, with a view to initiating networks and forming research consortia at European level.
INCDTP participated in 2008 to 2 calls for expressions of interest – FP7 projects organized by EURATEX, by which the project proposals were disseminated to the European researchers, the EURATEX members having thus the possibility to know them and to express their interest for participation:
- TEPPIES III (deadline 18.01.2008) - call FP7-NMP-2008-SME-2, topic
- NMP-2008-4.0-9 Reducing the risk of injury in complex systems through advanced personal protective equipment -2 EOI
• Personal protective equipment-safety and performance in emergency operations
• Advanced bioactive cardiovascular grafts
- TEPPIES IV (deadline 5.12.2008) - call FP7-NMP-2009. topics:
- NMP-2009-2.4-1 New biomass-based composite materials and their processing;
-NMP-2009-2.5-1Lighthighperformancecomposites.–6EOI:
• Light weight complex coverings for plant and soil protection in horticulture made of new textiles and composites
• Granulated thermoplastic composite reinforced with matrix adherent treated bast fibres for land transport
• Integrated system for parachute design
• Advanced Textile for Aerostructures
• Intelligent textiles -Meta textiles structures
• High value added composites textile base in sport, leisure, recovery

This offered the INCDTP specialists opportunities for integration in European research consortia, the development of projects with themes of mutual interest, leading to the laying down and the winning of three new European projects:
- "A pilot line of antibacterial and antifungal medical textiles based on sonochemical process"- SONO, coordinator Bar Ilan University Israel, FP7 project;
- "Multimedia and internet guide for international trade" -FASHION SCHOOL II, coordinator - Association of Textile–Clothing–Leather Industry (ATOK), Czech Republic, Leonardo da Vinci project;

tivitatii de cercetare la nivel european, in cadrul Platformei Tehnologice pentru Textile si Confectii:
- apeluri pentru expresii de interes –proiecte FP7 (actiunile TEPPIES);
- intalniri ale expertilor, membri in Thematic Expert Group din cadrul platformei tehnologice;
- intalniri ale specialistilor din domeniu, in scopul initierii de retele si formarii de consortii de cercetare la nivel european.
I.N.C.D.T.P. a participat, in anul 2008, la 2 apeluri pentru expresii de interes – proiecte FP7 organizate de EURATEX, prin care propunerile de proiecte au fost diseminate catre cercetatorii europeni, membrii EURATEX, avand astfel posibilitatea sa le cunoasca si sa-si exprime interesul pentru participare:
- TEPPIES III (termen limita 18.01.2008) - apelul FP7-NMP-2008-SME-2, topicul
- NMP-2008-4.0-9 Reducing the risk of injury in complex systems through advanced personal protective equipment -2 EOI:
• personal protective equipment-safety and performance in emergency operations,
• advenced bioactive cardiovascular grafts;
- TEPPIES IV (termen limita 5.12.2008) - apelul FP7-NMP-2009, topicele:
- NMP-2009-2.4-1- New biomass-based composite materials and their processing;
- NMP-2009-2.5-1- Light high performance composites. – 6 EOI:
• light weight complex coverings for plant and soil protection in horticulture made from new textiles and composites,
• granulated thermoplastic composite reinforced with matrix adherent treated bast fibers for land transport,
• integrated system for parachute design,
• advanced textile for aerostructures,
• intelligent textiles - meta textiles structures,
• high value added composites textile base in sport, leisure, recovery.

Aceasta a oferit specialistilor din I.N.C.D.T.P. oportunitati pentru integrarea in consortii de cercetare europene, dezvoltarea de proiecte cu tematici de interes comun, conducand la depunerea si castigarea a trei noi proiecte europene:
- "A pilot line of antibacterial and antifungal medical textiles based on sonochemical process"- SONO - coordonator Bar Ilan University Israel, proiect FP7;
- "Multimedia and internet guide for international trade" -FASHION SCHOOL II - coordonator Association of Textile–Clothing–Leather Industry (ATOK), Cehia, proiect Leonardo da Vinci;

- "E-learning programme for skill development in textile defect analysis" – SKILLTEX, coordinator CITEVE, Portugal, Leonardo da Vinci project.
Also, the INCDTP specialists, who are experts within the Thematic Expert Group no. 8 from the European Technology Platform for Textiles and Clothing, participated in 2008 to the work meeting that took place in Brussels on 5-7.03.2008, Textile Waste Management domain.
On 11.12.2008, INCDTP participated as ANCS representative to the first work meeting for the setting up of ERA NET network in the textile domain, High value added textiles and fibre based materials, organized by EURATEX. The objectives of this network are:
- The creating of a common action programme for supporting and attracting a high number of SMEs from the European textile industry sector for the participation within FP7;
- The creating of an "Internal Market" in the European textile research: "free movement of knowledge, researchers and technology";
- The development of the policies for expanding the European textile research, by formulating a priority axis in this domain in the FP7 Programme, starting with 2010;
- The managing of the resources for financing the research activity in the textile industry sector throughout Europe and its implementing in the FP7 Programme.

- "E-learning program for skills development in textile defects analysis", SKILLTEX - coordonator CITEVE, Portugalia, proiect Leonardo da Vinci.
De asemenea, specialistii I.N.C.D.T.P. , experti in cadrul Thematic Expert Group nr. 8 din Platforma Tehnologica Europeana pentru Textile si Confectii au participat in cursul anului 2008 la intalnirea de lucru ce s-a desfasurat la Bruxelles, in perioada 5-7.03.2008, domeniul Textile Waste Management.
In data de 11.12.2008, I.N.C.D.T.P. a participat ca reprezentant la ANCS la prima intalnire de lucru pentru constituirea retelei ERA NET in domeniul textil, High value added textiles and fibre based materials, organizata de EURATEX. Obiectivele acestei retele sunt:
- crearea unui program comun de actiune pentru sprijinirea si atragerea unui numar tot mai mare de IMM-uri din sectorul industriei textile europene pentru participarea in cadrul programului FP7;
- crearea unei "Internal Market" in cercetarea textila europeana: "free movement of knowledge, researchers and technology";
- dezvoltarea politicilor de dezvoltare a cercetarii textile europene, cu formularea unei arii prioritare pe acest domeniu in Programul FP7, incepand din anul 2010;
- coordonarea resurselor pentru finantarea activitatii de cercetare in sectorul industriei textile de-a lungul Europei si implementarea sa in programul FP7.

TEXTRANET –European Network of Textile Research Organisations

TEXTRANET (European Network for Textile Information Transfer)
is a non-profit association with the headquarters in Paris. Its objectives are:
- it provides technical and commercial information to all the members;
- it promotes the information exchange among its members;
- it facilitates the making-up of European consortia for multinational projects, especially the European financing ones;
- it develops and sustains links for the cooperation with textile associations, especially those having a pan-European activity.

TEXTRANET –European Network of Textile Research Organisation

TEXTRANET (Reteaua Europeana de Transfer de Informatii pentru Textile) este asociatie non-profit cu sediul central la Paris. Obiectivele organizatiei sunt:
- ofera informatii tehnice si comerciale tuturor membrilor;
- promoveaza schimbul de informatii intre membri sai;
- faciliteaza formarea de consortii europene pentru proiecte multi-nationale, cu accent aparte pentru cele cu finantare europeana;
- dezvolta si sustine link-uri pentru cooperare cu asociatii textile, indeosebi cu cele cu activitate pan-europeana.

GEDRT
GEDRT – The European Group for experience exchange upon the research directions in textiles has the following main objectives:

GEDRT
GEDRT – grupul european pentru schimb de experienta asupra directiilor de cercetare in textile, are urmatoarele principale obiective:

• mutual preparation of the subjects of general strategic interest regarding the problems the European textile sector is confronting with;
• the promoting of science and technology in the textile domain;
• the organizing of annual meetings of its members, with a purpose of intensifying the information exchange and strengthening the cooperation relationships.

On October 5-6, 2008, INCDTP, in collaboration with TEXTRANET and GEDRT,
organized by the help of the specialty Commission as part of ANCS, the first edition of the international conference "INCDTP contribution to the European Research Area" –TEXTRANET 2008.

The organizing of this scientific event gave the chance for the establishing of action directions for:
- the completing with "eTextile" domain of the structure of expert thematic groups, Euratex;
- the including of the technologic transfer in the agenda of the GEDRT general meeting that will take place in September 2009;
- the elaboration of bilateral collaboration proposals with Germany.

• pregatire comuna a subiectelor de interes strategic general privind problemele cu care se confrunta sectorul textil european;
• promovarea stiintei si tehnologiei in domeniul textil;
• organizarea de intalniri anuale ale membrilor sai, in scopul intensificarii schimbului de informatii si a intaririi relatiilor de cooperare.

In perioada 5-6 octombrie 2008, I.N.C.D.T.P. - in colaborare cu TEXTRANET si GEDRT - a organizat cu sprijinul Comisiei de specialitate din cadrul ANCS prima editie a conferintei internationale „Contributia I.N.C.D.T.P. la aria europeana de cercetare" – TEXTRANET 2008.

Organizarea acestei manifestari stiintifice a oferit ocazia stabilirii de directii de actiune, pentru:
- completarea cu domeniul "eTextile" a structurii grupurilor tematice de experti Euratex;
- includerea transferului tehnologic pe ordinea de zi a adunarii generale a GEDRT din septembrie 2009;
- elaborarea de propuneri de colaborare bilaterala cu Germania.

EARTO –European Association of Research and Technology Organisations

On May 28th, 2008, INCDTP participated to the EARTO General Meeting that took place in Madrid. The themes of the meeting focused on the information and discussions for the research policies, intellectual property rights and "the partnership responsibility".

EARTO –European Association of Research and Technology Organisations

In data de 28 mai 2008, I.N.C.D.T.P. a participat la Adunarea Generala a EARTO, ce s-a desfasurat la Madrid. Tematica intalnirii a fost concentrata pe informare si discutii pentru politici de cercetare, drepturi de proprietate intelectuala si conceptul de "responsabilitatea parteneriatului".

INSME – International Network for SMEs

INCDTP is an INSME observatory member (International
SMEs Network), organization based in Italy, which has the purpose of stimulating the transnational cooperation the public – private partnership in the domain of innovation and technology transfer towards SMEs.

On July 2-4, 2008, INCDTP representatives participated to the symposium "Encouraging SME Innovation and Growth: Increasing Capital Access" and "2008 INSME Annual Meet-

INSME – Reteaua Internationala a IMM-urilor

I.N.C.D.T.P. este membru observator INSME (International Network for SMEs), organizatie cu sediul in Italia care are ca scop stimularea cooperarii transnationale si a parteneriatului public – privat in domeniul inovarii si transferului de tehnologie catre Intreprinderile Mici si Mijlocii.

In perioada 2-4 iulie 2008, reprezentantii I.N.C.D.T.P. au participat la simpozionul "Encouraging SME Innovation and Growth: Increasing Capital Access" si "2008 INSME Annual Meeting", Guangzhou, China. Manifestarea a fost

ing", Guangzhou, China. The event was organized by INSME – International Network for SMEs in collaboration with partners from China (Guangdong Science & Technology Exchange Center).
The symposium comprised presentations of the specialists from the domain of technology transfer, policies and support measurements for the development of innovative SMEs, as a valorization of the research results.
There were promoted the accomplishments of INCDTP and Technologic and Business Incubator ITA TEXCONF, a technologic transfer entity which belongs to the ReNITT network (the National Network for Innovation and Technologic Transfer)
As a new member of the international organizations „Charter and Code" and „The European Platform of Women Scientists", (the institute having the status of „ supporting organisation"), INCDTP participated on April 26-31, 2008 in Brussels, to the work meeting regarding the elaboration of the European Charter and the Researcher Code, and on June 5-7, 2008 to the annual conference organized as part of the European Platform of Women Scientists EPWS, Vilnius, Lithuania.
The participation to this conference of the INCDTP representative allowed the accomplishing of:
- contacts with the specialists from the research institutes and universities having tradition as regards the promoting of women in the scientific activity, and especially in the choosing and training for a carrier in the scientific research;
- discussions regarding potential collaborations in European research projects, FP7 programme, with a view to encouraging the participation of active women in the scientific research activity.

organizata de INSME – International Network for SMEs in colaborare cu parteneri din China (Guangdong Science & Technology Exchange Center).
Simpozionul a cuprins prezentari ale specialistilor din domeniul transferului de tehnologie, politici si masuri suport pentru dezvoltarea IMM-urilor inovative, ca valorificare a rezultatelor cercetarii. Au fost promovate realizarile I.N.C.D.T.P. si ale Incubatorului Tehnologic si de Afaceri ITA TEXCONF, entitate de transfer tehnologic, ce face parte din reteaua ReNITT (Reteaua Nationala de Inovare si Transfer Tehnologic).
In calitatea sa de nou membru al organizatiilor internationale „Carta şi Codul" si „Platforma Europeană a Femeilor Oameni de Ştiinţa", (institutul avand calitatea de „ supporting organisation"), I.N.C.D.T.P. a participat, in perioada 26-31 aprilie 2008 - la Bruxelles, la intalnirea de lucru privind elaborarea Cartei europene si a Codului Cercetatorului, iar in perioada 5-7 iunie 2008 la conferinta anuala, organizata in cadrul Platformei Europene a Femeilor Oameni de Stiinta EPWS, Vilnius, Lituania.
Participarea la aceasta conferinta a reprezentantului I.N.C.D.T.P. a permis realizarea de:
- contacte cu specialisti de la institute de cercetare si universitati cu traditie privind promovarea femeilor in activitatea stiintifica si indeosebi in alegerea si instruirea pentru o cariera in cercetarea stiintifica;
- discutii privind potentiale colaborari in proiecte de cercetare europene, programul FP7, in scopul incurajarii participarii active a femeilor la activitatea de cercetare stiintifica.

In the domain of leather-footwear-rubber consumer goods, the following international professional networks and associations INDCTP is a member of, can be distinguished:

COTANCE – The Confederation of National Associations of Tanners and Dressers of the European Community, the representative body of the European Leather Association. It is a non-profit organization set-up for promoting the interests of the European tannery industry at international level. Together with the mission of representing tannages and European finishers, COTANCE has also the role of promoting the European leather industry on the European and international markets.
In 2008, INCDTP-ICPI collaborated with CO-

In domeniul pielarie –incaltaminte-bunuri de consum din cauciuc, se evidentiaza urmatoarele retele si asociatii profesionale internationale , la care I.N.C.D.T.P. este membru:

COTANCE – Confederatia Asociatiilor Nationale ale Tabacarilor si Finisorilor din Uniunea Europeana, organismul reprezentativ al European Leather Association (Asociatia Europeana a Pielii). Este o organizatie non-profit infiintata pentru a promova interesele industriei de tabacarie europeana la nivel international. Alaturi de misiunea de a reprezenta tabacarii si finisorii europeni, COTANCE are de asemenea rolul de a promova industria de pielarie europeana pe pietele europene si internationale.
In anul 2008, I.N.C.D.T.P. – I.C.P.I. a colaborat cu

TANCE in specific areas of interest.
Also, Mr. Gustavo Gonzalez-Quinjano, General Secretary of COTANCE participated as special guest, and Key Speaker within the 2nd edition of the International Conference ICAMS 2008, organized by INCDTP-ICPI in Bucharest on October 23-24, 2008.

IULTCS - International Union of Leather Technologists and Chemists Societies

INCDTP – ICPI is an associated member of IULTCS.
IULTCS will organize in 2009 in Beijing, China, on October, 11-14, the 30th Edition of the IULTCS Congress, an event to which the INCDTP-ICPI representatives are well-established participants.

GERIC – The Grouping of European Leather Research Institutes

GERIC includes all the technologic centres from the European Union specialized in research-development for the leather industry. These collaborations led to a series of advanced technologic projects in the domains of environment protection, quality assuring and high-tech applications for the leather production processes.
INCDTP – ICPI is a member of GERIC since 2007.
INCDTP-ICPI representative, Dr. Eng. Luminita Albu participated in 2008 to the GERIC meeting that took place on February, 16-19 in Brussels where research directions for the leather domain were mainly discussed. Also, the finalization meeting of the Leonardo da Vinci project ONE LEATHER TRAINING took place, and INCDTP-ICPI contributed as a partner.

UITIC - The International Union of Shoe Industry Technicians

UITIC is an organization that has as purpose the development of technical knowledge in the footwear industry, especially by organizing international conferences, and by facilitating information exchanges among its members, exclusively in the technology domain.
UITIC organized its 16th Congress on October 18, 2008, in Elche, Spain. On this occasion, there were discussed current themes of interest for the footwear industry: „Consumers, Product Innovation, Management, Sustainable Development„ etc.

COTANCE in arii de interes specifice. De asemenea, D-l Gustavo Gonzalez-Quinjano, Secretar General al COTANCE, a participat ca invitat special si Key Speaker in cadrul Celei de-a doua editii a Conferintei Internationale ICAMS 2008, organizata de catre I.N.C.D.T.P. – I.C.P.I., la Bucuresti - in perioada 23-24 octombrie 2008.

IULTCS - Uniunea Internationala a Societatilor Tehnologilor si Chimistilor Pielari

I.N.C.D.T.P. – I.C.P.I. este membru asociat al IULTCS.
IULTCS organizeaza in anul 2009 la Beijing in China, in perioada 11-14 octombrie, cea de-a 30-a editie a Congresului IULTCS, manifestare la care reprezentantii I.N.C.D.T.P. – I.C.P.I. sunt participanti de traditie.

GERIC – Grupul Institutelor de Cercetare in Pielarie din Europa

GERIC inglobeaza toate centrele tehnologice din Uniunea Europeana cu profil de cercetare-dezvoltare pentru industria de pielarie. Aceste cooperari au dus la o serie de proiecte tehnologice avansate in domeniul protectiei mediului, asigurarii calitatii si aplicatiilor high-tech pentru procesele de productie de piele. I.N.C.D.T.P. – I.C.P.I. este membru GERIC din anul 2007.
Reprezentatul I.N.C.D.T.P. – I.C.P.I., dr. ing. Luminita Albu, a participat la reuniunea GERIC din anul 2008, ce a avut loc in perioada 16-19 februarie la Bruxelles, in cadrul careia s-au abordat in principal directii de cercetare pentru domeniul pielarie. De asemenea, a avut loc intalnirea de finalizare a proiectului Leonardo da Vinci ONE LEATHER TRANING, la care I.N.C.D.T.P. – I.C.P.I. si-a adus contributia ca partener.

UITIC - Uniunea Internationala a Tehnicienilor din Industria de Incaltaminte

UITIC este o organizatie ce are drept scop dezvoltarea de cunostinte tehnice in industria de incaltaminte, in particular prin organizarea de conferinte internationale, si prin facilitarea de schimburi de informatii intre membrii sai, exclusiv in domeniul tehnologiei.
UITIC a organizat Cel de-al 16-lea Congres al sau in perioada 16-18 octombrie 2008, in Elche, Spania. Cu aceasta ocazie s-au discutat teme de interes actuale pentru industria de incaltaminte: ”Consumatorii, Inovarea de produs, Tehnologia, Managementul, Dezvoltare durabila„ etc.

EURIS – European Union of Research Institutes for Shoes

EURIS has the following missions:

• to offer a mechanism for the information exchange between research footwear institutes from the European Union.

• to promote and coordinate the participation of the companies which produce footwear to the research and technology programmes of the European Union

• to promote the technologic actions which support the footwear sector in the European Union

EURIS – Uniunea Europeana a Institutelor de Cercetare pentru Incaltaminte

EURIS are ca misiuni asumate:

• oferirea unui mecanism pentru schimbul de informatii intre institute de cercetare in incaltaminte din Uniunea Europeana.

• promovarea si coordonarea participarii companiilor producatoare de incaltaminte in programele de cercetare si tehnologie ale Uniunii Europene;

• promovarea actiunilor tehnologice ce sustin sectorul de incaltaminte in Uniunea Europeana.

ICOM-CC – International Council of Museums – Committee of Conservation

ICOM is the international organization of museums and museum specialists, an organization which is meant for conserving and keeping the present and future, tangible and intangible global heritage.

ICOM-CC is the largest International Committee of ICOM, having over 1 700 members in the whole world from all the branches of the treasure house and conservation profession.

INCDTP-ICPI members are registered as individual members in the ICOM-CC Committee of Conservation. In 2008, INCDTP-ICPI representatives participated to the International Seminar and Workshop „Conservation and Restoration of Parchment" that took place in Torino, on September 3-5, 2008.

ICOM-CC – Consiliul International al Muzeelor – Comitetul de Conservare

ICOM este organizatia internationala a muzeelor si profesionistilor din muzee care este dedicata conservarii, pastrarii transmiterii mostenirii mondiale culturale si naturale, actuale si viitoare, tangibile si intangibile.

ICOM-CC este cel mai mare dintre Comitetele Internationale ale ICOM, numarand peste 1700 de membri in intreaga lume, provenind din toate ramurile profesiei muzeistice si de conservare. Cercetatorii I.N.C.D.T.P. – I.C.P.I. figureaza ca membri individuali in Comitetul de Conservare ICOM-CC. In anul 2008 reprezentantii I.N.C.D.T.P. – I.C.P.I. au participat la Seminarul International si Workshop „Conservation and Restoration of Parchement", ce s-a desfasurat la Torino, intre 3 si 5 septembrie 2008.

IDAP NETWORK – Improved Damage Assessment of Parchment

IDAP Network is a non-profit organization which aims at offering to the specialists from the domains of conservation - applied restoration, research and education in this domain, an interactive instrument under the form of a data base meant for the evaluation of damages and the research of parchment materials, which are a cultural heritage.

In 2008, INCDTP-ICPI participated together with the members of IDAP Network to certain national and international research programmes: OPERA (Old Parchment: Evaluating Restoration and Analysis) and PERGAMO.

IDAP NETWORK – Reteaua IDAP – Evaluarea Imbunatatita a Daunelor Pergamentelor

Reteaua IDAP este o organizatie non-profit al carei scop este sa ofere profesionistilor din domeniul conservarii-restaurarii aplicate, cercetarii si educatiei in acest domeniu, un instrument interactiv sub forma unei baze de date destinat evaluarii daunelor si cercetarii materialelor de pergament ce constituie mostenire culturala.

I.N.C.D.T.P. – I.C.P.I. a participat in anul 2008 impreuna cu membrii Retelei IDAP in unele programe de cercetare nationale si internationale: OPERA (Old Parchment - Evaluating Restoration and Analysis) si PERGAMO.

2009 Strategy

The relational frame is an efficient, useful, adequate instrument which is necessary for the increasing of the visibility

Strategie 2009

Cadrul relational este un instrument eficace, util, adecvat si necesar pentru cresterea vizibilitatii organizatiilor de cer-

of the research organizations, the strengthening of their position in the RDI system, at national and international level. According to the Development Strategy of INCDTP for the period 2007-2013, and the strategic vision for 2020, the Institute will pay high attention to the strengthening of the collaboration relationships with different national and international organizations, institution and body networks. But having in view the global economic crisis we go through, INCDTP will maintain in 2009 the contacts/affiliation especially within those national and international institutions, being able to contribute to the initiation of new research projects, new partnerships, with a view to obtaining as many European funds as possible, adapting thus its 2009 strategy to the economic, financial and institutional conditions specific for this year.

Thus, INCDTP will take actions in 2009 for the continuation of its collaboration with the national (ASRO, FEPAIUS, AGIR, OP-PINC, RENAR) and international (EURATEX, TEXTRANET, GEDRT, COTANCE, EURIS) bodies, by participating to brokerages, TEPPIES actions organized by EURATEX with the purpose of identifying research themes and partners for new European projects specific to the calls that will be launched in 2009, the organizing/participation to scientific events on up-to-date themes for the European textile research; in this sense there can be mentioned the organizing in Bucharest on 7-8 05.2009, of the second edition of the International Conference TEXTECH 2009, which will represent a good opportunity for identifying research partners and themes of mutual interest.

cetare, consolidarea pozitiei lor in sistemul CDI pe plan national si international. Conform Strategiei de dezvoltare a I.N.C.D.T.P., pentru perioada 2007-2013, si a viziunii strategice 2020, institutul va acorda in continuare o atentie deosebita consolidarii relatiilor de colaborare cu diferite organizatii, retele de institutii si organisme, nationale si internationale. Avand in vedere insa situatia de criza economica mondiala pe care o parcurgem, I.N.C.D.T.P. isi va mentine in anul 2009 contactele/afilierea cu precadere in cadrul acelor institutii nationale si internationale, in masura sa contribuie la initierea de noi proiecte de cercetare, parteneriate noi, in scopul atragerii de cat mai multe fonduri europene, adaptandu-si astfel strategia 2009 la conditiile economice, financiare si institutionale specifice acestui an.

Astfel, I.N.C.D.T.P. va actiona in 2009 pentru continuarea colaborarii cu organismele nationale (ASRO, FEPAIUS, AGIR, OP-PINC, RENAR) si internationale (EURATEX, TEXTRANET, GEDRT, COTANCE, EURIS), prin participarea la brokerage, actiuni TEPPIES organizate de EURATEX in scopul identificarii de tematicii si parteneri de cercetare pentru noi proiecte europene, specifice call-urilor ce vor fi lansate in 2009, organizarea/participarea la manifestari stiintifice pe teme de actualitate in cercetarea textila europeana; se mentioneaza in acest sens organizarea la Bucuresti, in 7 - 8 mai 2009, a celei de a doua editii a Conferintei internationale TEXTECH 2009, ce va constitui un bun prilej pentru identificarea de parteneri si tematici de cercetare de interes comun.

PROIECTE DERULATE IN CURSUL ANULUI 2008

Nr. Crt.	Titlu Proiect	Perioada de derulare	Coordonator/partener
0	1	2	3
CEEX RELANSIN			
1.	Dezvoltarea de noi sisteme fotovoltaice pe baza de materiale polimerice pe substraturi flexibile	2005-2008	Coordonator
2.	Sistem tehnologic integrat de producere a snurului de etansare 3D ecologic textil pentru aplicatii industriale	2005-2008	Coordonator
3.	Smart textile – platforma convergenta pentru identificarea si procesarea informatiei personalizate mobile	2006-2008	Coordonator
4.	Cercetari multidisciplinare pentru stabilirea mecanismelor de deteriorare a documentelor istorice si culturale din pergament. Pergamo	2006-2008	Coordonator
5.	Dezvoltarea de tehnologii noi privind obtinerea de materiale ignifuge non azbest acoperite cu elastomeri pentru protectii si izolatii termice	2006-2008	Coordonator
6.	Biofertilizatori si biostimulatori de crestere, cu aditivi obtinuti prin biorafinarea subproduselor proteice, pentru cultura durabila a plantelor biodurafert	2006-2008	Coordonator
7.	Sistem complex integrat de tehnologii si produse destinate digitalizarii imprimarii textile	2005-2008	Partener
8.	Sisteme mecatronice mobile inteligente cu impact ecologic pentru echipamente textile	2006-2008	Partener
9.	Sistem decisional multicriterial si instrumente inteligente destinate dobandirii de avantaj competitive durabil pe piete turbulente in industria de textile si confectii – Acronim: SIDEMINT	2006-2008	Partener
10.	Compozite pe baza de polimeri ionici utilizate ca suport biomimetic de tesut osos pentru testari in vitro-COMPOVIT	2006-2008	Partener
11.	Biofunctionalizarea suprafetei implanturilor pentru Osteosinteza. OSTEOSUR	2006-2008	Partener

0	1	2	3
CEEX MATNANTECH			
12.	Textile tehnice multifunctionale pentru imbracaminte de protectie	2005-2008	Coordonator
13.	Dispozitive medicale invasive si neinvazive din materiale textile high-tech	2005-2008	Coordonator
14.	Confort si performanta vs materiale textile multifunctionale in domeniul activitatilor sportive si de timp liber	2005-2008	Coordonator
15.	Microstructuri polimerice avansate, multifunctionale, cu continut variabil de elastomer structurat si mase plastice	2006-2008	Coordonator
16.	Cercetari privind realizarea de eco-tehnologii destinate sectorului de pielarie, care sa contri-buie la protectia mediului, imbunatatirea calitatii vietii si competitivitatii tehnologice / ECO-TECH LEATHER	2005-2008	Coordonator
17.	Tehnologii noi aplicate materialelor din fibre liberiene utilizand procese chimice si enzimatice in ultrasunete pentru obtinerea de materiale performante – TENZINUS	2006-2008	Partener
18.	Fundamentarea sinergiei dirijate a nano-/ microcomponentelor integrate in materiale textile compozite, in scopul asigurarii unor functii inteligente ale echipamentelor de protectie pentru medii agresive	2006-2008	Partener
19.	Nanotehnologii biofotonice aplicate in industria textila, efecte benefice asupra organismului uman prin vestimentatie BIOFOTONTEX	2005-2008	Partener
CEEX BIOTECH			
20.	Biocompost pe baza de deseuri organice(proteice si celulozice) pentru o agricultura competitiva Biocompost	2006-2008	Coordonator
21.	Productia integrata si managementul durabil al unei ferme sericicole de reproductie	2005-2008	Partener
CEEX CALIST			
22.	Materiale din cauciuc obtinute prin metode noi, complexe de reticulare si grefare a elastomerilor prin iradiere cu electroni accelerati si microunde in prezenta de monomeri polifunctionali	2005-2008	Partener

0	1	2	3
CEEX INFOSOC			
23.	Cercetari exploatorii privind crearea si dezvoltarea interfetei consumator-produs de incaltaminte in vederea realizarii rapide a	2006-2008	Partener

	prototipurilor		
CEEX INFRAS			
24.	Extinderea ariei de competenta a laboratorului de incercari fizico-mecanice si analize chimice pe domeniul reglementat de directivele europene 89/686/CEE si 231/2002/ CE si promovarea serviciilor la scara nationala EQUIPLAB	2006-2008	Coordonator
CEEX MENER			
25.	Tehnologii competitive de prelucrare a deseurilor si din piele in produse cu valoare adaugata mare	2006-2008	Coordonator
CEEX VIASAN			
26.	Asistarea / recuperarea ortostatismului si mersului la batrani sever dizabilitati si bolnavi cu insuficiente cardio-respiratorii si / sau deficiente neuro-locomotorii grave cu ajutorul unor sisteme ortetice robotizate	2005-2008	Partener
27.	Elaborarea unor sisteme mecatronice de diacnostic si tratament utilizate in patologia membrului inferior.	2006-2008	Partener
28.	Dezvoltarea de tehnici inovative in chirurgia abdominala bazate pe utilizarea unor structuri biointegrabile sidezvoltarea de noi metode de evaluare a biodegrabilitatiacestora. MEBIOS biofunctionale de natura diferita	2006-2008	Partener
CEEX MODULUL III			
29.	Promovarea participarii cercetarii stiintifice in domeniul textilelor tehnice cu aplicatii in aeronautica-spatiu si medicina Acronim: AEROMED	2006-2008	Coordonator

0	**1**	**2**	**3**
SECTORIAL			
30.	Dezvoltarea pietei interne de confectii prin utilizarea metodei de scanare 3 Din indentificarea caracteristicilor antropometrice specifice populatiei din Romania	2007-2009	Coordonator
31.	Alinierea industriei textile si de confectii la cerintele cadrului reglementat al UE	2007-2008	Coordonator
32.	Industria de textile-confectii din Romania in context european si mondial. Elemente strategice privind cresterea competitivitatii	2008-2010	Coordonator

	sectorului in conditiile concurenteipe piata nationala si globala		
33.	Materiale si tehnologii noi de realizare a unor polimeri avansati in vederea reducerii efectelor nocive pentru mediu si sanatate in industria de prelucrare a cauciucului si maselor plastice	2007-2009	Coordonator
34.	Sistem integrat de baze de date privind activitatea industriei de pielarie si incaltaminte, cu evidentierea indicatorilor conform incadrarii - CAEN rev. 2/2008- pentru fundamentarea directiilor de evolutie si a cailor de crestere a competitivitatii sectorului in scopul dezvoltarii durabile	2008-2009	Coordonator
35.	Mana Managementul deseurilor solide de piei din industria de pielarie si incaltaminte – Solutii de valorificare pentru IMM-uri	2007-2009	Coordonator
GRANT			
36.	Simularea comportamentala elastica a nanocompozitelor textile	2007-2008	Coordonator
PNCDI II –PROGRAMUL PARTENERIATE			
37.	Dezvoltare durabila prin realizarea si testarea de articole tehnice textile tesute destinate proceselor curate din industrie	2007-2010	Coordonator
38.	Tehnologii avansate de mediu in industria textila si sisteme integrate de supraveghere si prevenire a poluarii apelor reziduale	2007-2010	Coordonator
39.	Sistem optic integrat de gestionare a defectelor din industria textila	2007-2010	Coordonator
40.	Nanostructuri superhidrofobe respirabile*)	2008-2011	Coordonator
41.	Biomateriale avansate cu geometrie variabila si biofunctionalitate controlabila pentru chirurgie generala si terapii sistematice si/sau neurologice*)	2008-2011	Coordonator

0	**1**	**2**	**3**
42.	Tehnologii si materiale durabile de conservare si de restaurare a obiectelor de patrimoniu din piele pentru. asigurarea viabilitatii si mostenirii culturale la nivel comunitar	2007-2010	Coordonator
43.	Cercetari privind inlocuirea totala sau partiala a cu toxicitate recunoscuta utilizate in prelucrarea naturale in vederea prevenirii poluarii mediului	2007-2010	Coordonator
44.	Realizarea de noi biomateriale cu structuri colagenice supramoleculare dopate, cu proprietati piezoelectrice, de cristale lichide, electrice si magnetice, utilizate in bioinginerie	2007-2010	Coordonator
45.	Biomateriale avansate pe baza de structuri proteice bioactive, nanostructurate dopate cu	2007-2010	Coordonator

	nanoparticule metalice		
46.	Sistem tehnologic integrat pentru nanofinisarea ecologica a suprafetelor si monitorizarea emisiilor	2007-2010	Coordonator
47.	Nanodispersii adezive ecologice realizate prin grefarea elastomerilor destinate procesarii imbinarilor din piele cauciuc si mase plastice	2008-2011	Coordonator
48.	Tehnici complexe de investigare, evaluare, conservare si restaurare a materialelor colagenice etnografice.	2008-2011	Coordonator
49.	Tehnologii inovative de obtinere a nanofibrelor prin sistem computerizat de electrofilare	2007-2010	Partener
50.	Sisteme fotocatalitice complexe pentru epurarea avansata a apelor rezultate din industria textila	2007-2010	Partener
51.	Platforma aeriana autonoma cu modul de lupta strategic	2007-2010	Partener
52.	Investigarea si identificarea particularitatilor sistemului contabil specific activitatilor de cercetare-dezvoltare	2007-2009	Partener
53.	Compozite (bio) degradabile cu insertii textile pentru produse ambientale ecologice*)	2008-2011	Partener
54.	Sisteme si mecanisme colaborative specifice clusterelor economice si retelelor de firme in economia bazata pe cunoastere*)	2008-2011	Partener
55.	Sisteme mecatronice inteligente pentru echipamente textile*)	2008-2011	Partener

0	**1**	**2**	**3**
56.	Sistem interventional modern de proiectare si realizare rapida a incaltamintei destinate compensarii deficientelor locomotorii si profilaxiei afectiunilor piciorului	2007-2010	Partener
57.	Nanocompozite bioactive pentru ambalaje alimentare ecologice	2007-2010	Partener
PNCDI II –PROGRAMUL CAPACITATI			
58.	Cresterea performantei in activitatea de CDI prin atingerea dotarii state – of-the-art in laboratorul de investigare	2007-2009	Coordonator
59.	Designul vestimentar-factor decisiv in cresterea competitivitatii industriei de confectii din Romania	2007-2009	Coordonator
60.	Evaluarea confortului la purtarea imbracamintei	2008-2009	Coordonator
61.	Infrastructura pentru cercetarea in designul pielarie-incaltaminte,in scopul dezvoltarii, la standarde europene, a serviciilor de cercetare, in scopul dezvoltarii, la standarde europene, a	2007-2010	Coordonator

	serviciilor de cercetare pentru industria creativa”		
PNCDI II –PROGRAMUL INOVARE			
62.	Produse textile inovative pentru imbunatatirea functiilor biofiziologice si a performantelor organismului uman	2008-2010	Partener
63.	Dezvoltarea si implementarea unor tehnologii inovative, alternative, ecoprietenoase destinate diversificarii sortimentale si cresterii competitivitatii in domeniul prelucrarii pieilor	2008-2011	Partener
64.	Sistem integrat de valorificare a namolului rezultat de la epurarea apelor reziduale din tabacarii	2008-2011	Partener
PNCDI II –PROGRAMUL INOVARE EUREKA			
65.	Materiale textile bioresorbabile din amestecuri poliesterice biodegradabile BIOTEXTIL	2005-2008	Coordonator
66.	Textile antibacteriene BIOTEX	2004-2008	Coordonator
67.	Metode noi pentru identificarea firelor textile moderne FIBRIN	2004-2008	Coordonator pe plan national
68.	New Garment-Cad For Modem 2D/3D Geometric Modelling of Wearing Apparel G-CAD *)	2008-2011	Partener

0	**1**	**2**	**3**
69.	Textile Waste Management MADETEXTIL *)	2008-2010	Partener
70.	Manufacture of Multifunctional Textiles with Cotton/Silver Blended Yams FUNTESIL*)	2008-2011	Partener
71.	Development of Nanostructured Funtionalised Textiles NANOTEX*)	2008-2011	Partener
72.	Sistem integrat de proiectare a incaltamintei calculator.	2006-2009	Partener
73.	Crearea unui sistem de furnizare a serviciilor sa gestioneze prin intermediul internetului vehicule al IMM-urilor.	2006-2008	Partener
74.	Infrastructura de sustinere pentru realizarea rapida si semi-particularizata a incaltamintei	2008-2011	Partener
PROGRAMUL DE CRESTERE A COMPETITIVITATII PRODUSELOR INDUSTRIALE -MEF			
75.	Dotarea laboratorului de incercari fizico-mecanice cu echipamente destinate controlului de calitate a materialelor textile	2007-2008	Coordonator
PROGRAMUL NUCLEU			
76.	Dezvoltarea unui centru de servicii tehnice, diseminare informatii si formare de personal in domeniul pielarie-incaltaminte	2006-2008	Coordonator
77.	Poli de excelenta pentru sustinerea Fondurilor structurale	2006-2008	Coordonator

78.	Instrumente de diseminare si transfer tehnologic al rezultatelor activitatii de cercetare	2006-2008	Coordonator
79.	Organizarea sistemului propriu de protectie a informatiilor clasificate, in conformitate cu legislatia nationala, in vederea aplicarii lui in activitatea de cercetare	2006-2008	Coordonator
80.	Textile inteligente utilizate in monitorizarea medicala / fiziologica a pacientilor	2006-2008	Coordonator
81.	Invelitori textile pentru protejarea culturilor agricole	2006-2008	Coordonator
82.	Noi generatii de produse filtrante pentru scopuri industriale	2006-2008	Coordonator
83.	Proiectarea si elaborarea tehnologiilor de realizare a incaltamintei profilactice destinata persoanelor bolnave de diabet	2006-2008	Coordonator
84.	Parasuta de siguranta pentru parapanta – prototip	2006-2008	Coordonator
85.	Aparat de zbor din textile tehnice	2006-2008	Coordonator

0	1	2	3
86.	Tehnologii de prelucrare a pieilor bovine in sortimente rezistente la apa destinate fetelor de incaltaminte	2006-2008	Coordonator
87.	Structuri performante tesute acoperite cu polimeri si elastomeri pentru transport maritim strategic	2006-2008	Coordonator
88.	Aplicatii ale radiatiilor laser pe diverse suporturi (piele, cauciuc etc.), in scopuri tehnice si estetice	2006-2008	Coordonator
89.	Optimizarea tehnologiei de confectie a incaltamintei prin utilizarea materialelor termoplastice si termoadezive, pentru bombeuri si staifuri	2006-2008	Coordonator
90.	Sisteme de vulcanizare destinate unor materiale avansate de tip aliaje elasto-plastice pentru talpi de incaltaminte	2006-2008	Coordonator
91.	Textile electronice interactive (TEI)	2006-2008	Coordonator
92.	Studiu stiintific privind nanotehnologiile in textile	2006-2008	Coordonator
93.	Tehnologii de pregatire preliminara a materialelor textile pentru asigurarea proprietatilor necesare imprimarii digitale cu jet de cerneala	2006-2008	Coordonator
94.	Simularea deformarilor nanostructurilor textile	2006-2008	Coordonator
95.	Modelarea si prelucrarea informatiilor grafice	2006-	Coordonator

	a componentelor de incaltaminte prin aplicatii de tip CAD/CAM	2008	
96.	Tehnici digitale moderne de caracterizare a structurilor textile (functii wavelet, clustere, etc.)	2006-2008	Coordonator
97.	Realizarea spatiului informational al textilelor	2006-2008	Coordonator
98.	Studiu privind utilizarea unor compusi anorganici, la prelucrarea pieilor naturale, in vederea prevenirii poluarii mediului	2006-2008	Coordonator
99.	Cercetari de separare si izolare durabila (prin adsorbtie avansata) a ionilor metalici cu potential toxic, din deseurile de piele tabacita	2006-2008	Coordonator
100.	Impactul biotehnologiilor de prelucrare a materialelor textile din fibre naturale asupra apelor reziduale	2006-2008	Coordonator
101.	Stabilirea metodelor de testare „in vitro" a capacitatii de cedare controlata a diverselor substante medicamentoase din hidrogeluri colagenice	2006-2008	Coordonator

0	1	2	3
102.	Proiectare dispozitive de realizare componente 3D pentru industria aerospatiala	2006-2008	Coordonator
103.	Diversificarea si modernizarea echipamentelor de injectie talpi de incaltaminte in vederea largirii gamei de copounduri utilizabile la injectie	2006-2008	Coordonator
104.	Dispozitive de control a tratamentelor aplicate prin fulardare	2006-2008	Coordonator
105.	Sisteme tehnologice de laborator si industriale pentru peliculizarea articolelor textile	2006-2008	Coordonator
106.	Aparat de laborator pentru vopsirea materialelor textile (fibra, fir, tesatura, tricot)	2006-2008	Coordonator
107.	Aplicarea metodelor spectrometrice IR de testare a polimerilor avansati	2006-2008	Coordonator
108.	Evaluarea ciclului de viata al produselor textile	2006-2008	Coordonator
109.	Metode rapide de identificare si evaluare a tipului de tanin utilizat la tabacirea pieilor de patrimoniu	2006-2008	Coordonator
110.	Dezvoltarea tehnicilor de analiza microbiologica a produselor textile si din piele	2006-2008	Coordonator
111.	Elaborarea metodei statistice de analiza a datelor pentru asigurarea calitatii rezultatelor incercarilor fizico-mecanice si analizelor chimice din cadrul Sistemului de Management al Calitatii al laboratorului ICPI, conform	2006-2008	Coordonator

	cerintelor SR EN ISO/CEI 17025:2001		
112.	Elaborare standarde proiectare confectii	2006-2008	Coordonator
COOPERARI BILATERALE			
113.	Romania – Slovenia Tehnologii de mediu in industria textile si sistem integrat pentru supraveghere si prevenire a poluarii apei	2008-2009	Coordonator
114.	Romania – Turcia Finisari enzimatice si efectul asupra materialelor textile celulozice	2008-2009	Coordonator
115.	Romania – India Studii asupra unor coloranti naturali *)	2009	Coordonator
116.	Romania – Cipru Studies on the controlled delivery of antipsoriatic drugs from the collagen support scaffold (matrix) with various hydration levels	2008-2010	Coordonator
117.	Romania –Turcia Cercetari privind sinteza si aplicarea unei clase de noi biocide benzotiazolice la prezervarea pieilor de bovine wet-blue	2008-2010	Coordonator

0	**1**	**2**	**3**
118.	Romania – Ukraina Materiale noi durabile pentru conservarea si restaurarea obiectelor de patrimoniu din piele si pergament	2008-2010	Coordonator
119.	Romania – Turcia Materiale avansate obtinute prin aplicarea tehnicilor de varf in prelucrarea subproduselor pielii	2008-2010	Coordonator
120.	Elaborarea unor metode spectroscopice pentru controlul calitativ al materialelor proteice	2008-2010	Coordonator
FP VII			
121.	Virtual Collaborative Design Environment ECO-TEX-DESIGN*)	2008-2011	Coordonator pe plan national
122.	Novel Temperature Regulating Fibres and Garments NOTEREFIGA *)	2009-2012	Coordonator pe plan national
LEONARDO DA VINCI			
123.	E-learning program for skills development in textile defects analysis SKILLTEX	2007-2009	Coordonator pe plan national
124.	Multimedia and internet guide for international trade FASHION SCHOOL II *)	2007-2009	Coordonator pe plan national
ASISTENTE TEHNICE			
125.	Analiza fondului actual de standarde in vederea alinierii cerintelor acestora la evolutia tehnicii si cresterea vizibilitatii activitatii de standardizare pe plan european	2008	Coordonator
126.	Analiza fondului actual de standarde in vederea alinierii cerintelor acestora la evolutia tehnicii si cresterea vizibilitatii activitatii de standardizare pe plan European	2008	Coordonator

*) Castigate in 2008, finantate din 2009

COLABORATORI PROIECTE CDI - 2008

INSTITUTE NATIONALE/INSTITUTE DE CERCETARE	UNIVERSITATI	AGENTI ECONOMICI	ALTE UNITATI ECONOMICE
1	2	3	4
Institutul National de Cercetare Dezvoltare pentru Microtehnologie IMT	Universitatea Politehnica Bucuresti	Institutul de Cercetari Produse Auxiliare Organice SA – ICPAO	ASRO
Institutul de Cercetare si Proiectare pentru Electrotehnica ICPE SA	Universitatea din Bucuresti	SC STIMPEX SA	GEA
Institutul National de Cercetare Dezvoltare de Fizica Laserilor Plasmei si Radiatiei INCDFLPR	UPB Centrul de Cercetare Dezvoltare pentru Mecatronica Bucuresti	SC LACECA SA	INC pentru Sport
Institutul National de Cercetare Dezvoltare pentru Chimie si Petrochimie- ICECHIM	UPB Centrul National de Cercetare a Performantelor Sistemelor Tehnologice - Optimum Bucuresti	SC STIROM SA	CEIS-Centrul de Economia Industriei si Serviciilor
INCDIE ICPE CA–Institutul National de Cercetare Dezvoltare pentru Inginerie Electrica - Bucuresti	Universitatea Aurel Vlaicu Arad	SC SERICAROM SA Filiala cercetare	Spitalul Colentina
Institutul National de Cercetare Dezvoltare pentru Protectia Muncii-Alexandru Darabont – INCDPM	Universitatea Tehnica Gheorghe Asachi Iasi	SC COVIMPEX SRL	Muzeul National de Istorie al Romaniei
Institutul National de Cercetare Dezvoltare pentru Fizica si Inginerie Nucleara „Horia Hulubei” - IFIN-HH – Bucuresti	Universitatea de Medicina si Farmacie “Victor Babes” Timisoara	SC Institutul de Cercetare si Proiectare Tehnologica pentru Constructii de Masini - ICTCM	Muzeul National al Satului Dimitrie Gusti Bucuresti

1	2	3	4
INCD Fizica Materialelor	UPB Centrul de Cercetare pentru Aeronautica si Spatiu	SC Industria Iutei SA	Muzeul Militar National Bucuresti
Institutul National de Cercetari Aerospatiale Elie Carafoli Bucuresti	Universitatea Tehnica Lucian Blaga Sibiu	SC OVM-ICCPET SA-Institutul de Conceptie Cercetare si Proiectare Echipamente Termoenergetice	Muzeul Municipiului Bucuresti
Institutul National de Cercetare Dezvoltare pentru Ecologie Industriala - ECOIND	Universitatea Tehnica Gheorghe Asachi Iasi-Centrul de Cercetare si Transfer Tehnologic Polytech Iasi	SC FI-RI VIGONIA SA-Timisoara	Complexul Muzeal National „Moldova" Iasi
Institutul National de Cercetare Dezvoltare pentru Optoelectonica	UPB Centrul de Cercetari Energetice si de Protectia Mediului	SC MAGNUM SX SRL	Complexul National Muzeal Astra Sibiu
Institutul National de Cercetare-Dezvoltare pentu Optoelectronica – INOE 2000	Academia de Studii Economice Bucuresti	SC PLASTPROD SRL	Centru de Cercetari TABOR – Iasi
Institutul National de Cercetare-Dezvoltare pentru Pedologie, Agrochimie si Protectia Mediului – ICPA	Universitatea Transilvania din Brasov	SC ICPE Bistrita SA	Complexul Muzeal Bucovina Suceava
Institutul de Chimie Macromoleculara "Petru Poni" Iasi	Universitatea de Medicina si Farmacie "Gr. T. Popa" Iasi	SC Institutul de Cercetari Produse Auxiliare Organice SA Medias	Italian National Agency for new technologies, energy and the environmental – ENEA, Italia
Institutul de Bioresurse Alimentare	Universitatea de Medicina si Farmacie "Carol Devila" Bucuresti	VODIMEDICOR SRL	
Institutul National de Cercetare in Domeniul Conservarii si Restaurarii	Universitatea Oradea	HRIPSIME COM SRL	

Institutul de Cercetare Dezvoltare pentru Legumicultura si Floricultura Vidra	Universitatea Politehnica Bucuresti – Centrul BIOMAT	SC NAPPA COM SRL Ploiesti	
Institutul National de Inventica Iasi	Universitatea "POLITEHNICA" Bucuresti, Centrul National de Consultanta pentru Protectia Mediului	SC Malzileri SRL Ploiesti	
Institutul de Cercetare - Dezvoltare pentru Protectia Plantelor (ICDPP)	Universitatea de Stiinte Agronomice si Medicina Veterinara Bucuresti -USAMV	SC CARDINAL SRL	
Institut Francais Textile Habillement (IFTH) - Franta	Universitatea „Dunarea de Jos"Galati–Facultatea de Inginerie Braila -UGAL	SC Ecoproiect SRL	
Centrul de cercetare si Dezvoltare Aplicata, Nicosia, Cipru	Centrul de Chimie Organica C.D. Nenitescu al Academiei Romane	SC DANGER SRL Brasov	
Union des Industries Textiles (UIT). - Franta	Slovenia – Univ.of Maribor / Faculty of Mechanical Engineering / Department of Textile Materials and Design; Konus Konex Ltd.	METAV - /CERCETARE DEZVOLTARE SA	
Athens Technology Center (ATC) - Grecia	Italia – Univ.Di Bologna / Chemistry Department "G. Ciamician".	SC PIELOREX SA	
ELKEDE - TECHNOLOGY & DESIGN CENTRE SA - Grecia	Polonia – Academy of Sciences / Polymer Chem. Inst. /Ionic Polymerisation ; Textile Research Institute (Iw);	SC INCUBUS CONSULTING SRL	

1	2	3	4
Institut fur Graphische Datenverarbeitung (IGD) - Germania	Turcia – Ege Universitesi Muehendislik Fakueltesi Teksil Muehendisligi, Izmir, Turcia	SC ZIROM SA Giurgiu	
Inotex; Slezan - Cehia.	CITTA STUDI (ITA)	SC Rialto Prod SRL Bucuresti	
Centexbel – Belgia	TCE (Textile Centre of Excellence UK)	SC TAMIV SA	
Thuringian Institute of Textile and Plastics Research - Germania	Universitatea de Tehnologie si Design, Kiev	SC ROMBOX SA	
TAMPEREEN TEKNILLINEN YLIOPISTO - Finlanda	Universitatea din Liubliana, Slovenia	SC SINTACTIC GRUP SRL Bucuresti	
SEPEE - Grecia	Universitate GAZI, Turcia	SC MATEFIN SRL Bucuresti	
CITEVE - Portugalia		SC ECOPROIECT SRL Bucuresti	
BAATPE- Bulgaria		SC ARPITEX SA Bucuresti	
Lituania – Lithuanian Textile Institute ; Jsc “Neaustima”		SC STOFE BUHUSI SA	
Turcia – Bursa Testing and Analysing Laboratory (Butal)		SC ICEFS SA Savinesti	
Polonia – Textile Research Institute (Iw)		POWERSOFT COMPUTER SOLUTIONS LTD, Cipru	
Spania – Aitex –Asociacion De Ivnestigacion De La Industria Textil; Pascual Y Bernabeu S.A.		Tecnotessile- Italia	
Cehia - ATOK – Association of Textile – Clothing – Leather Industry		Pecci – Italia	
SOTEX –Association for Textile, Clothing and Leather products Labelling;		Germany - Fraunhofer-Gesellschaft zur Forderung der angewandten Forschung e.V	

1	2	3	4
Bulgaria – ACLI – Association of light industry		Modern Testing Services (MTS);- Germania	
TZU – Textile Testing INSTITUTE.		Color Web - Germania	
Grecia – CLOTEFI – Textile Clothing and Fibre Technological Development Company		Slezan- Cehia	
		Swerea IVF AB - Suedia	
		STIFTELSEN SINTEF - Suedia	
		Luxilon Industries NV	
		POLISILKA S.A.	
		Ulfrotte AB	
		DEVOLD OF NORWAYS AS	
		Smart Fiber AG	
		ADDCOMP HOLLAND BV	
		EUROHOD Divat Kft	
		GOTECH SRL	
		PREDILNICA LITIJA Ltd	
		Cehia – Spolsin Spol S.R.O.	
		Kortecs Mensucat San. Tic. A.S.	
		OMEGA DESIGN –specialist in internet solutions;	
		AUTOMOTIVE DIAGNOSTIC SOLUTIONS (ADS) CYPRUS LTD, Cipru	

The National Research & Development Institute for Textiles and Leather
Institutul Național de Cercetare-Dezvoltare pentru Textile şi Pielărie

Str. Lucrețiu Pătrăşcanu nr. 16,
Sector 3, Bucureşti, România

tel.: (0040)21 340 4200
fax: (0040)21 340 5515
www.certex.ro