

Summary

I. I.N.C.D.T.P. presentation

II. Representative projects

1. Who we are

The National R&D Institute for Textiles and Leather is the only institute which has expertise and R&D facilities in the field of textiles, clothing and leather processing, having a tradition of over 60 years in the area. Some reference points in our history are:

- In **1951** the **Textile, Leather and Rubber Research Institute** was established;
- In **1956**, as a result of the high activity volume in the two domains, the Institute was divided into two separate entities: **Textile Research Institute** and **Research Institute for Leather, Rubber and Glass**.
- Over time, the activity has been developed and the organizational structure has been changed, so that in **1996**, by GD 1304/25.11.1996, **INCDTP** was set-up as National Institute.

What are we doing?

- Multidisciplinary applicative research in the field of textiles – clothing and leather – footwear – rubber consumer goods – the main activity;

- Other related activities that support the research activity:

- technology transfer activity and valorization of research results through the Technology and Business Incubator ITA –TEXCONF, Spin-Off MEDTEX and Experimental Textile Stations;
- consulting, technical assistance and services activities (investigation & laboratory testing, quality management) through 2 accredited laboratories;
- editing & publishing of technical reviews, books, ISI-rated magazines, through our own Publishing House named CERTEX;
- standardization activity – through 3 Technical Committees: 103 - "Textiles", 102 - "Leather", 190 - "Leather Clothing";
- professional training activities - the institute is authorized as professional training provider since 2010.

Our **vision** is to consolidate our position of dynamic and representative player in the field of textiles, clothing and leather - footwear scientific research.

Therefore, **our mission** is to increase the competitiveness of Romanian textile-clothing & leather-footwear sectors and the added-value of RDI sector.

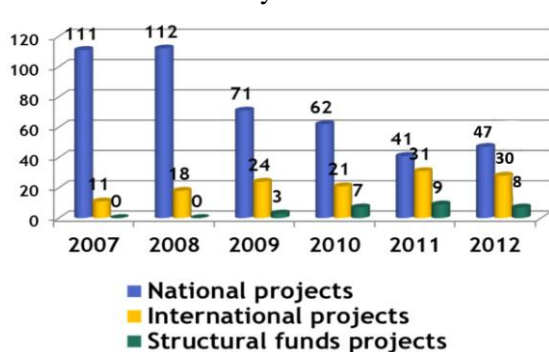
Following institutional evaluation, conducted in April 2013, the Institute has obtained the A+ certification level.

2. Our main research fields of interest

- *Multifunctional products obtained by applying nanotechnology and microelectronics;*
- *Protection equipment made of textile and leather for environments with different risk degrees;*
- *Increasing the human health and life quality;*
- *Design and anthropometry;*
- *Environment protection;*
- *Special domains for national defense;*
- *Evaluation of the conservation state of cultural heritage leather objects;*
- *Development of innovation and technological transfer networks; development of clusters and competitiveness polls;*
- *Training / development of entrepreneurial skills in the textile-clothing sector, training / human resource development in the leather-footwear sector.*

3. The quality of R&D activities and their results

The research activity of our institute is characterized by flexibility in accessing different types of Financing



Programmes; the activity continuously adapted and turned to exploit all the opportunities.

The figures show that the number of international projects and Structural Funds projects has a tendency to increase.

The Institute's expertise and experience of specialists have allowed researchers to target European / international programs.

International projects

Currently there are 28 ongoing projects such as: 1 FP7 project, 2 IEE projects, 11 projects within ERA-NET (10 CROSSTEXNET and 1 MANUNET), 4 projects Eureka

Traditional/Eurostars, 8 projects in Bilateral Cooperation (with Austria, China, Turkey, France, Vietnam) and 2 COST actions. We developed these projects within multidisciplinary partnerships with universities,

research centers and industrial companies, especially SMEs, that co-financed the projects budgets; they are interested to collaborate with us for exploiting the research results in the production activity.

Project's main results are: technologies, products, prototypes, methods, patents, articles, scientific publications.

- **Publications and patents**

- **scientific papers**

Scientific papers	2007	2008	2009	2010	2011	2012	Total
Scientific papers (total)	145	235	158	174	160	216	1088
Articles published in ISI rated magazines	19	28	33	35	37	23	175
Articles published in non-ISI magazines	16	21	26	21	24	21	129
Articles published in conference proceedings	97	179	88	107	90	171	732
Books	13	7	11	11	9	1	52
No. of ISI citations	29	87	55	90	36	69	366
relative Article Influence Score - rAIS	1.64	7.80	3.39	11.23	10.66	8,4	34.71

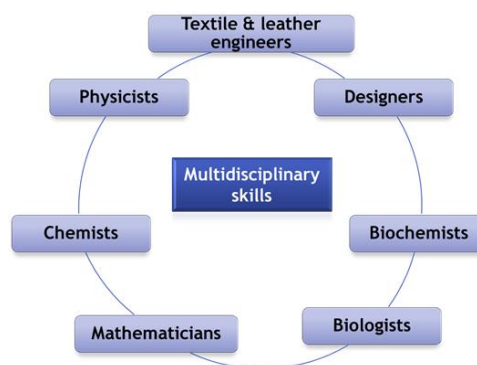
- **patents**

Patents	2007	2008	2009	2010	2011	2012	Total
Total	10	24	31	29	22	9	125
National	10	24	31	29	19	9	122
International	-	-	-	-	3	-	3

4. Human Resources

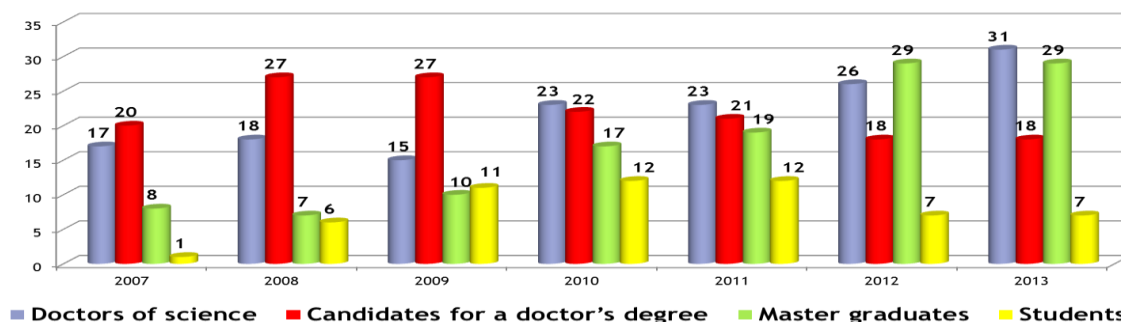
The institute's managerial strategy starts from the idea that the human resource and its competence represents for I.N.C.D.T.P. the essential value for a competitive, sustainable and innovative development, according to the objectives of Europe 2020.

In close connection with the research and development directions, the research and development staff is comprised of professionals with a wide range of qualifications, from basic ones that serve the field of textile-leather and related areas such as mathematicians, physicists, biologists, biochemists and engineers in the field of aeronautics. Attracting young specialists, doctors and PhD students with multidisciplinary expertise and the support of research career development through continuous professional training constitute essential goals.



During 2007-2012, our institute continued the employment trend of „brain gain”. We undertook major recruiting actions that resulted in the employment of highly specialized personnel during 2007-2012 (37 new employees with multidisciplinary skills: PhD in textiles, chemistry, biology, physics, biochemist, clothing design and economy). Two professional certification competitions were organized.

Continuing professional development is achieved through postgraduate studies (masters, doctorate, post-doctorate), specialized courses on professional areas and/or related areas (instrumental analysis, project management, quality management, trainers etc.), publication of scientific papers and participation to scientific events, national and international fairs and exhibitions.



5. Research Infrastructure

The institute invested in improving the research infrastructure, in order to access complex researches in National and European projects.

Main investments in research infrastructure include:

- 3D Body Scanner VITUS Smart XXL - Anthroscan Pro;
- GRID computing facilities;
- Low pressure PLASMA equipment for laboratory – 400 roll-to roll;
- Thermal manikin who reproduces the human body at real dimension;
- Technological equipment: OptiMax Picanol weaving machine, Jakob Mueller - elastic yarn weaving machine, VEB Hochvakuum Lyophilizer type TG 50.4;
- Thermal imaging camera FLIR P620;
- SIF6000R Incubated shaker;
- Video equipment for linear scanning.

The institute is also equipped with:

- 2 accredited testing laboratories (6 entities), in conformity with SR EN ISO 17025 and 2 non-accredited entities – Textile and Leather Microbiology / Biotechnologies Laboratories. The Laboratories are accredited for a number of 70 tests, from physical-mechanical, physical-chemical, eco-toxicological and morphological point of view;
- Experimental Pilot Unit for technological experiments;
- Information – documentation patrimony that comprises over 12,000 books, 11.800 translated articles and 90 titles of national and international journals;
- INTERNET and INTRANET network.

6. Financial Activity

It is very important to mention that our institute obtained positive annual financial results. The major part of our income comes from R&D activities (81% in 2011, 87% in 2012).

- We attract private funds from industry by exploitation of research results and patents through:
 - + **The Technology and Business Incubator – ITA TEXCONF:**
 - set-up in 2007, it is an entity from the innovation and technology transfer infrastructure, without legal personality, accredited for the textile-clothing field, medical textiles;
 - 13 incubated companies, between 2008-2012.

- + **Technology transfer activity of research results and patents and valorization in our Experimental Pilot Unit, in niche/various domains:**

- **technical textiles for filtering:** some of the beneficiaries - SC OLTCHIM SA, SC FERAL SA, SC CESAROM SA, Nat. Comp.of Uranium Feldioara, SC AZUR SA, SC KOBER SA, SC POLICOLOR SA.

- **invasive and non-invasive medical devices:**

- non-resorbable surgical thread (EC labeled; experimental unit accredited in conformity with GMP norms);
- bandages for orthopedics, hospital linen;
- collagen dressings for the treatment of wounds (PANCOL, GEVICOL –EC labeled)

In order to capitalize our expertise in the field of medical articles and to promote the entrepreneurial culture, we established **SC MEDTEX Design & Production SRL** as a **spin-off in 2009**.

- **fashion and customized products:** our main beneficiaries are the market and the enterprises;

- **rubber products;**

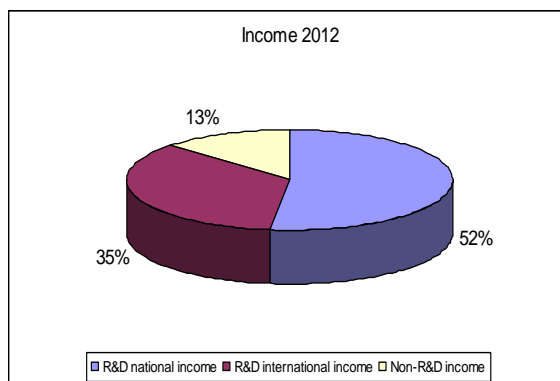
- **leather products.**

- + **Technical assistance and Services - laboratory testing and investigation**

The institute offers technical assistance and accredited laboratory testing and investigation services for the Romanian textiles and leather companies: 12.941 tests for 1068 beneficiaries, during 2007-2012.

- **International funds contracted in the last 6 years:**

- European projects: 5 FP6 & FP7, 2 IEE, 2 CIP-Eco Innovation, 8 ERA-NET CROSSTEXNET & SEE, 19 EUREKA, 25 bilateral cooperation, 3 Leonardo da Vinci, 12 EU Structural Funds – 7.512. Keuro;
- collaboration agreements with Coventry University - Sonochemistry Centre (2013).



7. Sharing and dissemination

- publishing activity: INCDTP has its own Publishing House named CERTEX and publishes “Industria Textila” (Textile Industry) magazine – (ISI Thomson Reuters rated since 2007, the impact factor for 2012 is 0,366)– and also Leather-Footwear Journal (B+ rated).
- participation in national and international scientific events:
 - o 283 international work meetings of the group of experts for running projects;
 - o 117 international conferences, scientific events, as participants presenting papers, posters;
 - o 92 abroad work meetings for new opportunities (projects, contracts).
- organization of scientific seminars and conferences:
 - o the 6th edition of the International Conference – TEX TEH, October 17-18.2013;
 - o the 4th edition of the International Conference on Advanced Materials and Systems – ICAMS – September 27-29.2012;
- the institute is an active member of 4 innovative clusters in textiles and clothing; those 4 clusters are part of CLUSTERO - the Romanian Clusters Association. In 2012, clusters in the textile and clothing field have submitted a proposal to form a Pole of Competitiveness. At present, the project was approved after first stage of evaluation process.

8. Relational frame

INCDTP is an active member of professional associations and RDI national and international networks. The institute is an active member in about 40 organizations, including: EURATEX, COTANCE, TEXTRANET, UITIC, FEPAIUS, ASRO, RENAR, SIT-AGIR, CCIB.

9. Related activities

Quality management

The institute is certified in conformity with the following European and International standards:

- SR EN ISO 9001:2008 – Management quality systems, research activity and experimental units;
- SR EN ISO/CEI 17025:2005 – Competence calibration and testing laboratories;
- SR EN ISO 13485:2012 – Medical devices;
- SR EN ISO 14001:2005 – Environment;
- SR OHSAS 18001:2008 – Occupational Health and Safety.

Surveillance audits that were performed in 2011 and 2012 have been completed without identifying any non-compliance with the quality management systems.

Standardization activity

INCDTP supports the standardization activity for the textile and leather industry, in cooperation with the national standardization body (ASRO).

INCDTP coordinates the activity of secretariats and presidency of the following technical standardization committees:

- Technical Committee 103 – “Textiles”
- Technical Committee 102 – “Raw skins, finished leather, leather substitutes and testing methods”
- Technical Committee 190 – “Garments made of leather, furs, leather substitutes and technical articles made of leather and substitutes”

10. Research objectives and priorities for the future

■ To increase the scientific potential of the Institute

Based on our own strategy, National RDI Strategy 2007-2013, EU strategy 2020, new EU framework Program HORIZON 2020, taking into account our mission/ vision (as national R&D institute) and expertise gained from the past, we established our scientific objectives and research directions for the next years.

- ▶ Increase with 10% yearly the number of research projects and exploiting all the opportunities in the RDI National Plan and European RDI programmes.

During 2012 - present, there have been submitted 88 project proposals, from which 26 are accepted and 12 are still under evaluation in: National R&D Programme - Innovation Voucher, IDEAS, Human Resources, FP7, ERA-NET CROSSTEXNET, ERA-NET MANUNET, Eureka Traditional/Eurostars, CIP Eco-innovation, Bilateral Cooperation Programs.

- ▶ Increase with 5% yearly the R&D indicators: no. of articles, no. of scientific papers, no. of patents and no. of applied technologies.

■ To support the national textile - leather sector, in order to increase competitiveness of the enterprises through:

- ▶ Development of private – public partnerships and attracting SMEs in clusters and *Pole of Competitiveness*. In this context, in 2012, the Institute and the clusters from textile and clothing field have submitted a proposal to form a *Pole of Competitiveness*, where the Institute is an active member.
- ▶ Intensified activity of ITA TEXCONF - a 20% increase of the number of incubated companies. In 2012, 1 new SME (PIRAMIDA INTERNATIONAL IMPEX SRL - manufacturing of underwear) was incubated.
- ▶ During 2013, INCDTP will continue to provide entrepreneurship training courses within the project “Entrepreneurial Culture – a chance to develop the entrepreneurial spirit of employees from the textile industry” financed through Structural Funds.
- ▶ The increase of INCDTP’s involvement in the professional training of employees from the industry; 3 projects in Leonardo da Vinci Programme have been submitted and they aim at adapting the professional training to the needs of the textile – clothing labor market.
- ▶ Increased involvement of INCDTP in the practical training of students and the organization of “Open doors days”. We already started, one of these events was organized on 01.04.2013, both for textiles and leather domains.

■ **To increase the degree of exploitation of RDI results, especially by the usage of Spin-off and TT center.**

INCDTP’s strategy to intensify technological transfer actions and to attract extra budgetary funds is directed towards subfields in which there is an already existing client portfolio and expertise (filter materials, medical devices, unique and short series fashion design/leather accessories, testing services for textile and leather materials) as well as the development of new directions of interest: *new types of biomaterials and medical devices in order to improve health and quality of life*.

For instance, in 2012, the number of accomplished laboratory analysis increased by 3.2%, as compared to 2011.

■ **To increase the visibility at national and international level:**

INCDTP will exploit the existing tools to increase its visibility:

- ▶ TEXTEH International Conference;
- ▶ ICAMS International Conference;
- ▶ Industria Textila (Textile Industry Journal);
- ▶ Revista de Pielarie Incaltaminte (Leather and Footwear Journal).

INCDTP aims to increase its scientific communication at national and international level:

- ▶ New affiliation to national and international bodies from the textile-clothing and leather and related domains;
- ▶ Participation in working meetings (Romania and abroad) to identify new project ideas / research directions / new partnerships – 5% increase;
- ▶ New dissemination channels: available media, newsletters, participation in TV or radio debates, by means of our own websites (www.certex.ro, www.icpi.ro), but also by creating partnerships with other similar websites.

11. We will reach these objectives through:

- ✚ **Strategic recruitment policy** - the recruitment policy will be oriented towards specialists with PhD degree, with multidisciplinary skills. In 2012-2013 there were hired 3 PhD degree young people;
- ✚ **Maintaining and developing an infrastructure** that is adequate for development of complex research at national and European level;
- ✚ **A better scientific communication, collaboration and partnerships;**
- ✚ **Assuring critical mass in key areas**, through:
 - permanent upgrading of the research teams structure and philosophy, in correlation with the scientific priorities;
 - increase the efficiency of the existing human resources, by development of existing motivation schemes, by establishing performance criterion and increasing the performance standards;
 - performing a strategic recruitment campaign for attracting specialists with complementary expertise;
 - supporting researchers to exceed performance indicators, organizing certification competitions, leading to an increase with 5% of certified staff;
 - create a modern management by permanent adaptation of human resource policy, in order to cultivate the professionalism, the competences criteria, the values.
 - create an attractive institute for the research career.