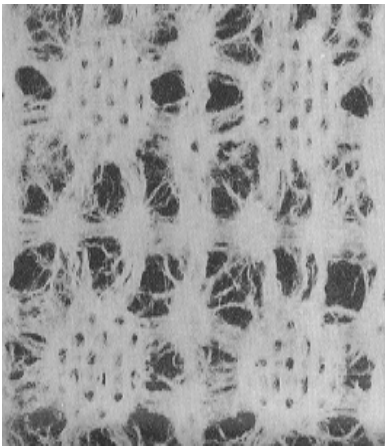


« INNOTEX »

- *Nonwoven forming process with spunlaced fibres & new system (h/w & s/w) to achieve such a process*



**Contract n° BRPR -CT98-0766
Project n° BE-97- 4902**

total budget : 3 813 270 _ (part IFTH 711 000 _)

beginning 01/09/1998 ending 31/08/2001.

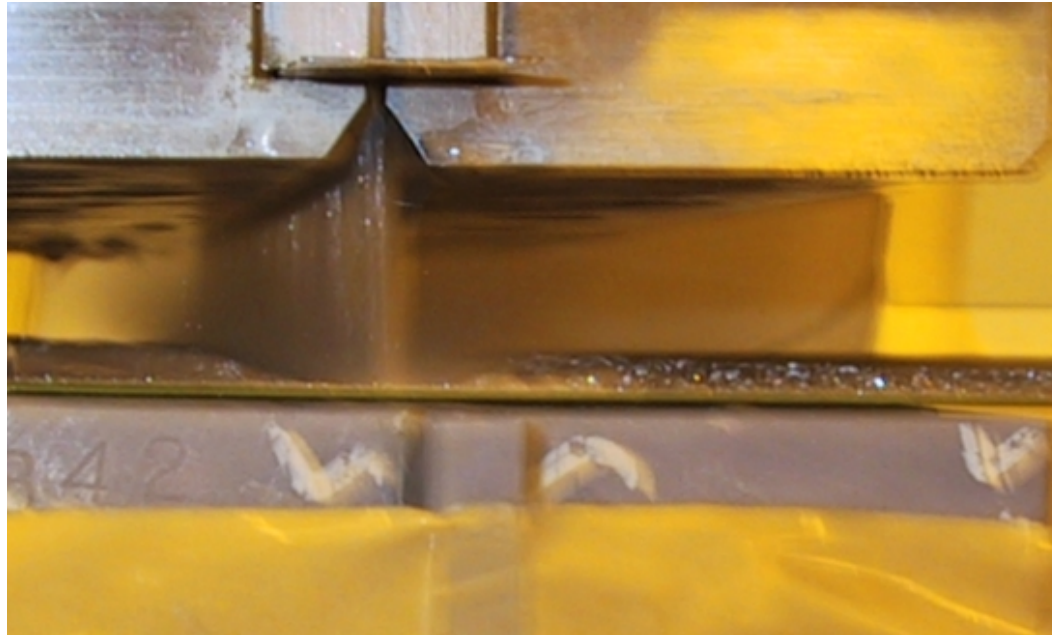
« INNOTEX »

- *Partners :*

- **COMERIO ERCOLE (I) coordinator**
- **ENERCONSULT (I)**
- **METRAVIB (F)**
- **ORSA (I)**
- **ASOCIACION DE LA INDUSTRIA NAVARRA (E)**
- **INSTITUT FRANCAIS DU TEXTILE ET DE L 'HABILLEMENT (F)**

« INNOTEX »

- *Objectives :*
- **conception of a new air-jet machine for non-woven bonding in place of water jets in order to reduce the investment cost,**
- **to achieve a lower process cost (water and energy consumption) than those of traditional water jet linking process,**
- **To avoid specially-sized fibers (use of lower cost traditional fibers),**
- **to allow the processing of technical non-wovens based on carbon or ceramic fibers**

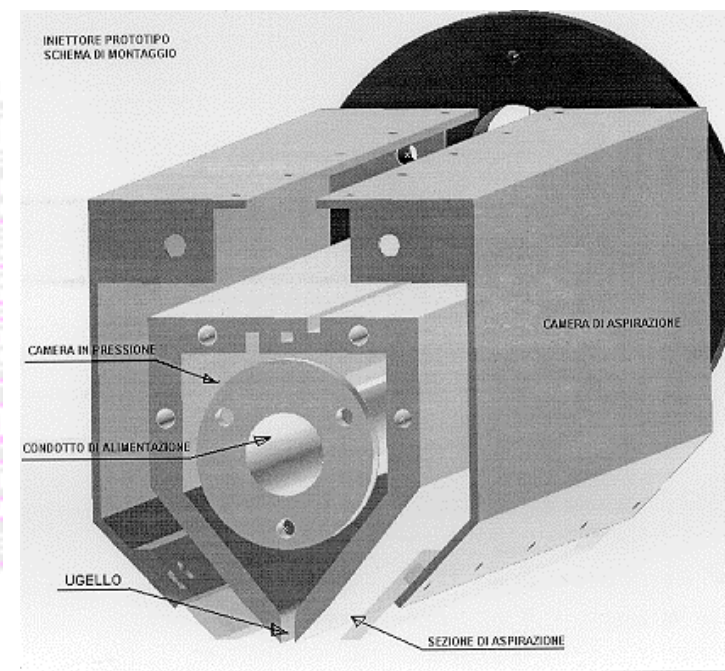
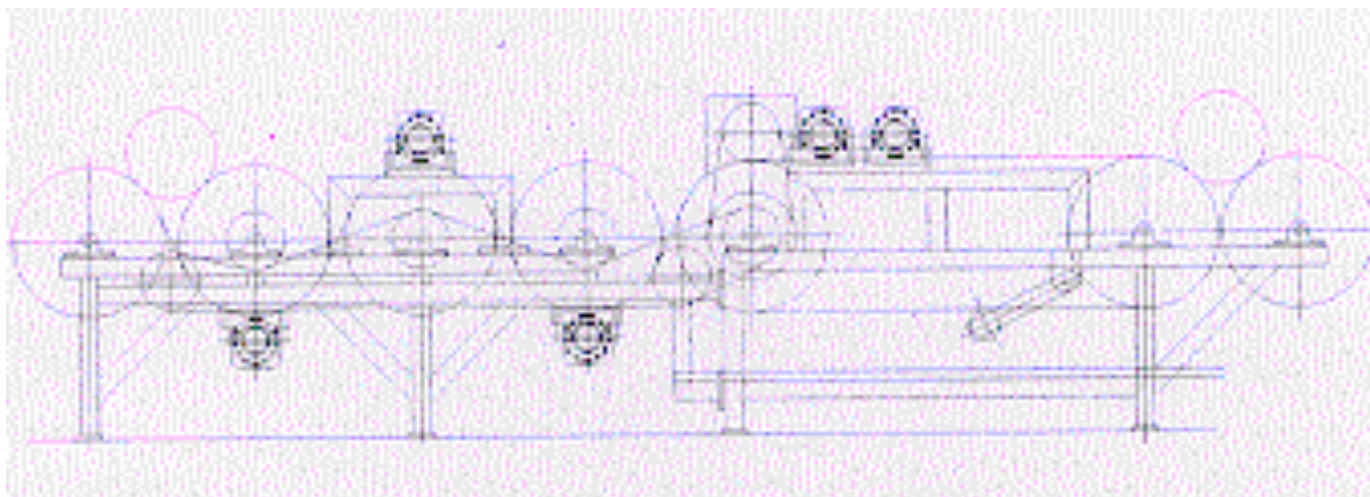


« INNOTEX »

- *Achievements :*
- **State-of-the-art of fluid-jet technologies in order to define the most important parameters to take into account in the new process development,**
- **Study of noise origin in traditional processes in order to reduce noise level of the new process,**
- **Manufacturing of a new prototype for non-woven air-jet bonding,**
- **Experimentation of the prototype by non-woven processing and process parameters definition and limits,**
- **Manufacturing of an industrial production scale machine.**
- **Maximum reduction of the noise level**
- **Optimisation of parameters adjustment,**
- **Contacts with potential en-users of products obtainable.**

« INNOTEX »

- *Achievements (following):*



« SMARTEX »

NEW FUNCTIONAL AND SMART FIBERS FOR TECHNICAL APPLICATIONS

- Duration: 3 years
- Total budget : 2060 K.Euros
- Budget IFTH: 420 K. Euros
- Partners:
 - IFTH (F): Coordinator
 - AIMCO (F)
 - Gent University (B)
 - NYLSTAR (I)
 - MURTRA (E)
 - DOGI (E)

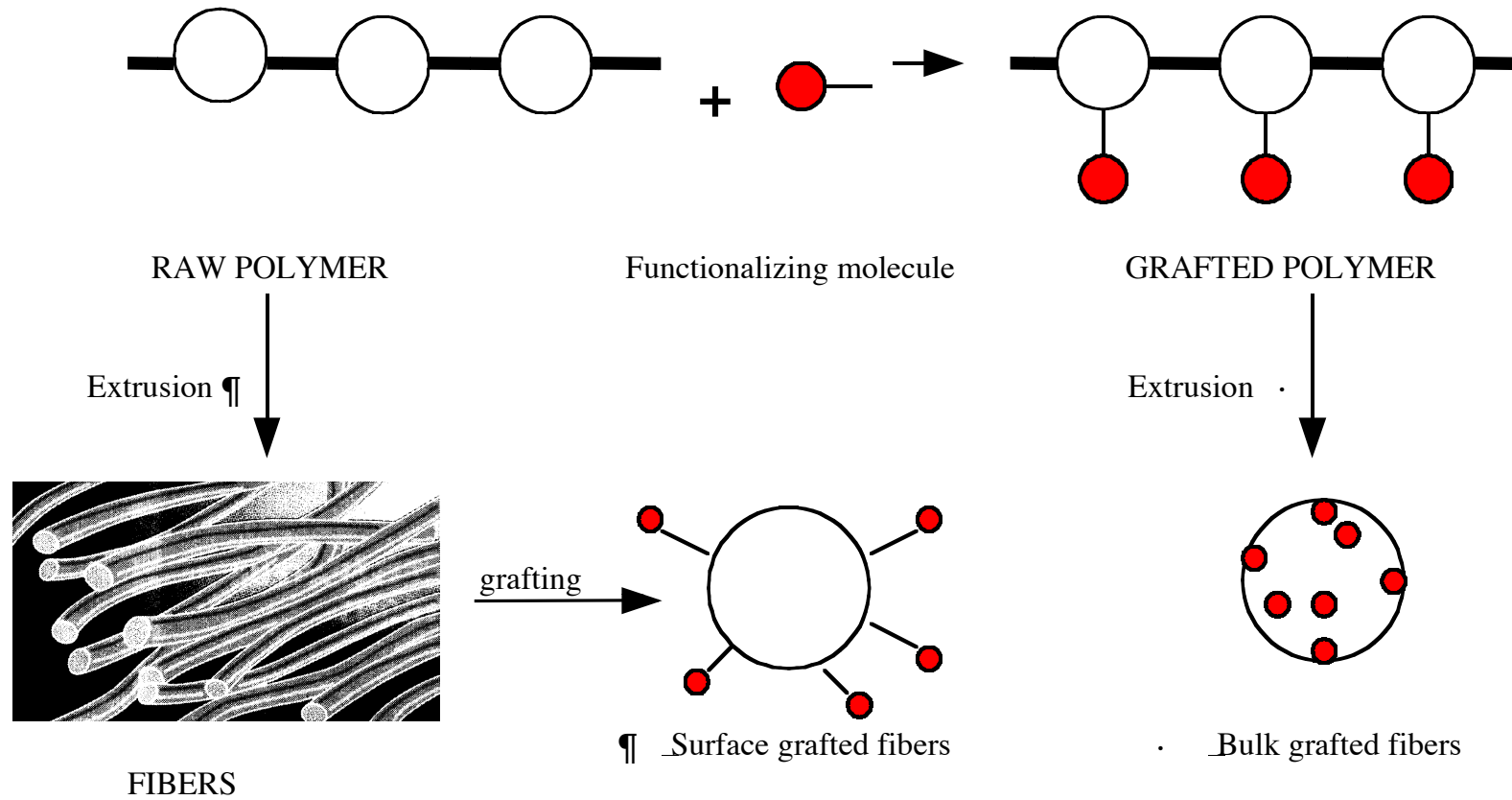
« SMARTEX »

NEW FUNCTIONAL AND SMART FIBERS FOR TECHNICAL APPLICATIONS

- **Objectives :** Development of new functional fibers for the following fields of applications :
 - → Traceability and anti-counterfeiting
 - → Detection of rupture (sport and industry)
 - → UV Protection UV (sport and leisure)

SMARTEX

FUNCTIONALIZATION VIA GRAFTING :



SMARTEX

Counterfeiting

- **magnetic molecules** ⇒ pb of colouring and stability of magnetic properties
- **luminescent pigments** ⇒ possibilities of different formulations.
⇒ different detection systems (UV spectroscopy, X-fluorescence, chemical analysis..).

SMARTEX

Detection of rupture

- **Piezochromic molecules** : pb of stability under extrusion conditions, cost ..
- **Conductive yarns**
- **Piezoelectric yarns** → project EUREKA

SMARTEX

Protection UV

- **photochromic molecules**

⇒ succes with PP

⇒ problem with PA due to it's acidity

BRITE « PLA »

RESORBABLE CONTINUOUS FIBER REINFORCED POLYMERS FOR THE OSTEOSYNTHESIS

- Duration: 54 months
- Total budget : 615 K.Euros
- Budget IFTH: 220 K. Euros
- Partners:
 - Institut für Textil und Verfahrenstechnik, Denkendorf (D):
Coordinator
 - IFTH (F)
 - Biomedical Engineering Laboratory, University of Patras (GR)
 - Orthopedic Clinic, University of Patras (GR)

Starting date : 01/01/1991

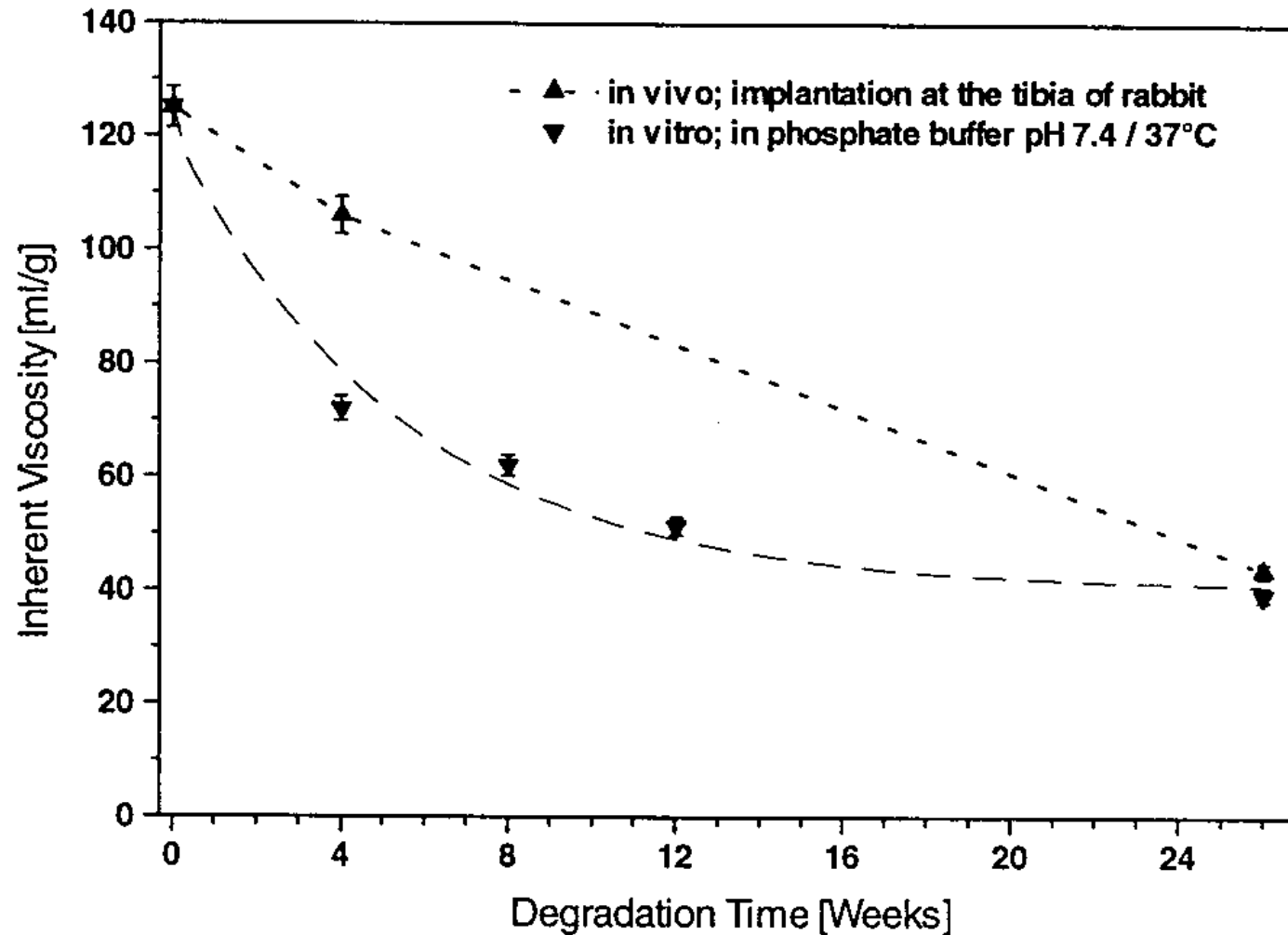
BRITE « PLA »

- **Objectives** : Development of the processing for resorbable continuous fiber reinforced osteosynthesis devices :
- → Synthesis of resorbable polymers
- → Spinning of high strength fibers, impregnation with matrix
- → Samples forming and characterisation of material and processing (including degradation and simulation tests, and animal testing)

BRITE « PLA »

- **PLA** : Polyester of poly-lactide acid
- → Synthesis of poly-L-lactide acid for reinforcement fibers
- → Synthesis of an amorphous copolymer as matrix : poly-L/DL-Lactide
- → Spinning of melt spun fibers of high modulus, impregnation with matrix by hot-melt process
- Use of hybrid yarn technology : reinforcement fibers intermingled with fibers from the matrix material
- → Samples forming of 3 x 10 mm, sterilisation by ethylene oxyde and characterisation of material in-vitro and in-vivo (plates implanted on the tibia of rabbits with screws)

BRITE « PLA »



***Inherent viscosity of sterile P-L-LA / P-L-DL-LA 70:30
after in vitro and in-vivo tests***

BRITE « PLA » : conclusions

- Plates : conventional histology was performed only to the tissues surrounding the plates after 1 month in-vivo, no macrophages nor giant cells, no inflammatory reaction.
- After 6 months : plates very weak - After 12 months : 40% resorbed
- Pins : 90% resorbed after 12 months
- A compromise can be found between resorption speed and mechanical properties needed

« METATEX »

Application of Magnetron Physical vapor Deposition (PVD) Technology on Synthetic Textile Material

- Duration: 24 months
- Total budget : 537 K.Euros
- Budget IFTH: 114 K. Euros
- Partners:
 - Polywarm products LTD : Coordinator
 - IFTH (F)
 - SREENLINE
 - SOIRIES CHAMBUTAIRE
 - SOFRADIM PRODUCTION SA
 - HEF R&D - DEPT RECHERCHE

Starting date : 01/02/1999

« METATEX »

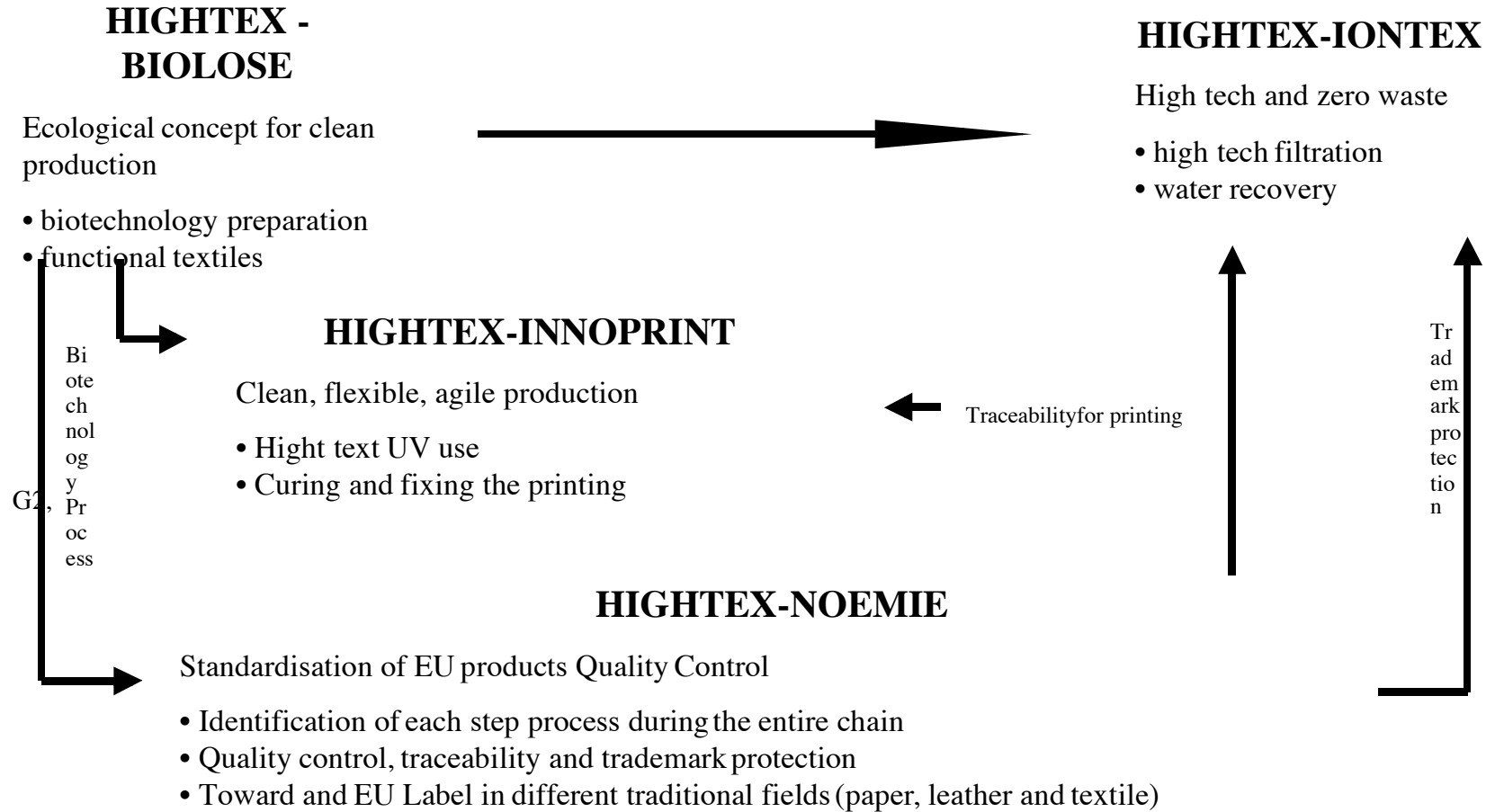
- Objectives : apply magnetron PVD technology on synthetic fabrics and yarns to coat them with one or more metallic layers.
- Application sleeping bags with 20% increase of thermal insulation properties
(POLYWARM)
- Application flat flexible cinema / video screens, with increased light reflectivity
(SCREENLINE)
- Curtains with an increase of protection against UV, visible light and IR;
electricity conductive fabrics with an increase of 5 to 10 times of superficial conductivity
(SOIERIES CHAMBUTAIRE)
- Surgical implants offering a reduction of 99% of bacterial adhesion on the surface, permitting a weak post operation inflammation and serious decrease of complications.
(SOFRADIM PRODUCTION SA)

Cluster « HIGHTEX » : Objectives

- Widening scope of individual partners to other textile activities and markets
- Increase consistency between projects researchers (universities and technical centers) and stakeholders
- Increase awareness of technology trends (textile chemistry, textile grafting, surface treatments, mechatronics, optoelectronics, automation, biotechnologies)
- Enlarging European Textile RTD towards integrated solution and improved exploitation of strategic European Textile RTD. (links to be established between the steps of the textile production chain), in conformity with the concept of "Modern factory".

HIGHTEX CLUSTER

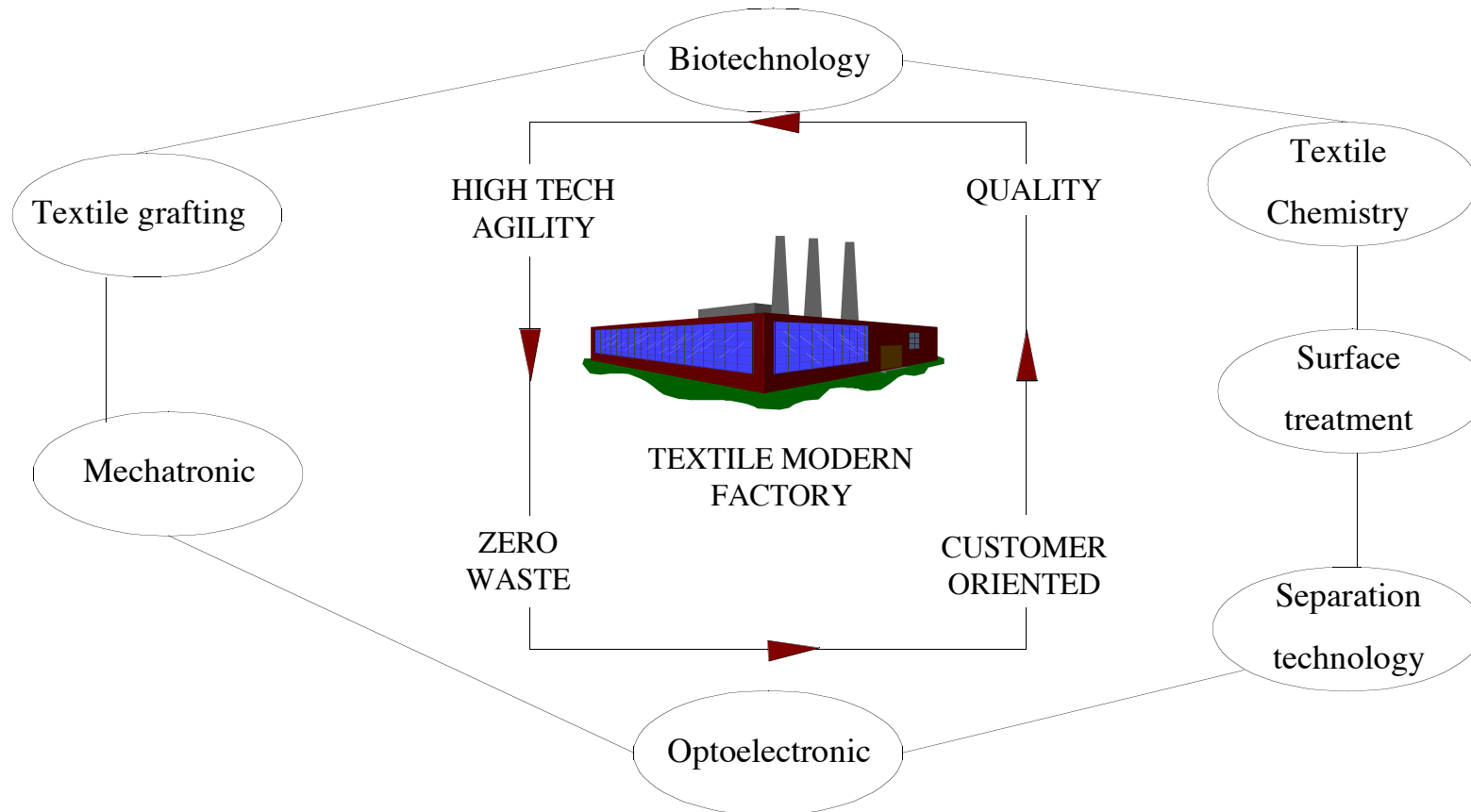
Objective : Toward a customer oriented high tech, agile, zero waste, high quality EU, Textile Entreprise



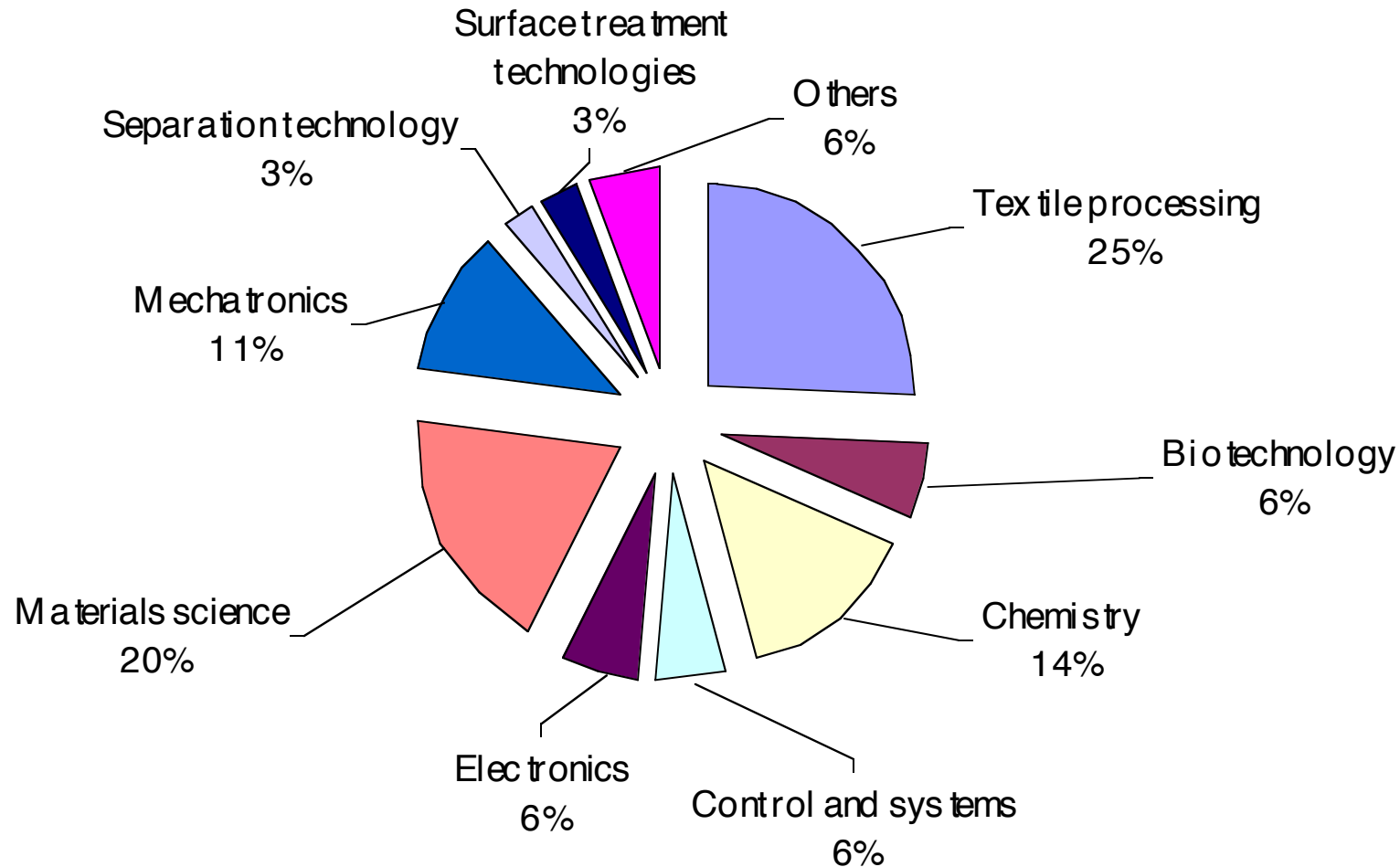
Cluster « HIGHTEX »

HIGHTEX Cluster

for a Competitive and Sustainable European Textile Industry



STRUCTURE OF THE HIGHTEX CLUSTER BY AREA OF ACTIVITY



STUCTURE OF THE HIGHTEX CLUSTER BY GEOGRAPHICAL REPARTITION

