Activities of Politecnico
Calzaturiero: Training, Research and Services
Contenuti dell’intervento

Politecnico Calzaturiero profile

Major R&D Topics

Quality Lab

Rapid Prototyping Lab
The Politecnico Calzaturiero was established in 2001 by:

- A.C.Ri.B. servizzi s.r.l.
- Veneto Innovazione S.p.A.
- Veneto Sviluppo S.p.A.
- Veneziana Servizi per l’Industria – SIVE
- A.N.C.I. servizi s.r.l.
- Cassa di Risparmio di Venezia
- C.N.A. - Rovigo
- Associazione Artigiani e Piccole Imprese – Dolo
- Provincia di Padova
- Provincia di Venezia

The main aim of the Politecnico Calzaturiero is to support the growth and development of the Veneto Footwear Industry.
The history of Politecnico Calzaturiero

1923 – Foundation of “Scuola festiva per artigiani di O. Tombolan Fava”

1934 – The School becomes a specialized centre for shoe sector

1947 - Reopening of the School after the war

1961 – Foundation of A.C.Ri.B (association of shoe factories in Riviera del Brenta) (consolidation of training activities related to the footwear industry)

1976 – Foundation of Consorzio Maestri Calzaturieri (re-organization of traditional courses and new courses in design)

1986 – Foundation of Consorzio Centro Veneto Calzaturiero (new training activities regarding management, new technologies and CAD)
Activities of Politecnico Calzaturiero Scarl

**COUNSELING**
- Elementary School
- Junior High School
- High School

**BASIC TRAINING**
- Shoe designer School
- High School
- Courses for UNEMPLOYED
- Courses for WORKERS

**SPECIALISTIC TRAINING**
- Shoe designer School
- Design Area
- Industrialization
- Marketing and sales management
- CAD 3D
  - Business Administration

**MASTER**
- Collection coordinator
- Production manager

**RESEARCH & DEVELOPMENT**
- Product and process innovation
- Testing and spread of new technologies

**QUALITY AND SAFETY**
- Lab services for shoe factories
- Research on new materials
- Quality System Certification
- Environmental analysis services for shoe factories
- Training for Safety Manager
Approach to Innovation

- Market Analysis in cooperation with Researchers and Consultants
- Focus group of managers and technicians to identify improvement areas
- Check-up made by Researchers and Consultants to identify areas of interest
- Brainstorming with Businessmen, Consultants and Technicians to identify new research guidelines
- Development of Regional, National and European Projects
- Testing of new solutions in the factories
- Dissemination and training activities aimed at transferring the results obtained
ACRIB and Politecnico Activities

Acrib and Politecnico work together to support shoe factories. Product and process innovation is the mission of Politecnico Calzaturiero.
Main Research Guideline Politecnico /1

**Tema 1 – Process Innovation**

1. Organizational and technological activities to facilitate integration and the internationalization of the Footwear Sector
2. Development of new methodologies and technologies designed to show an active product to customers
3. Development of technologies and methodologies for a quick response to the Market: systems of graphic design, prototyping technologies and introduction of standard
4. Development of systems for intelligent production: semi-automatic workstations driven by data CAD systems
5. Participation in projects aimed at developing machines and at the improvement of production processes to increase safety in the workplace and reduce the environmental impact
Main Research Guidelines /2

Topic 2 – Product Innovation
1. Development of web 2.0 sites to engage the consumer in the final phase of product design.
2. Research into the possible applications of nanotechnology to materials for shoe: nanodeposition and dispersions of organic and inorganic nanoparticles.
3. Study of the foot and the movement aimed at providing elements for the design of shoes that assure standards of wellbeing and comfort.
4. Research on safe and low environmental impact materials, products and components
EU projects

- 2001-2003: e-MMEDIATE (IST-2001-35104): Take-up action under the IST-programme on ICT collaborative platforms for SMEs

- 2006-2008: Flexibly beyond (VS-2006-0353): Project under the art.6 of the European Social Fund with the aim of enhancing the role of over45 workers in the textile and shoe sector through innovative management actions based on flexibility

- 2009-2011: IDEAFOOT (n.232585) Project under “Research for SMEs” (Capacities programme) with the aim of implementing innovative technologies for the automation of the shoe production
IDEA-Foot

Innovative DEsign and mAnufacturing systems for small series production for European FOOTwear companies

Call: FP7-SME-2008-I
Research for the benefit of SMEs

Project duration: 24 months
Expected starting: January – February 2009

Budget: 1.500.000€
Funding: 1.100.000€
The IDEA-foot project addresses European SMEs working in the footwear industry and in particular in the market segment of classical and casual shoes.

The objective of the IDEA-foot project is the introduction of new methods for the integrated design and production of shoe based on:

- standardization of some geometrical features of shoe components according to companies requirements;
- development of CAD modules to ease the design of components according to the standards developed;
- development of CAM modules which transfers the production parameters from the CAD models to the production;
- the development of an automated production cell, where materials handling is done by manipulators and the machines are compliant with the developed CAM software.
Benefits of the project

In this context the new method for the integrated design and production of the shoe, based on the standardization of the shoe components, and the automated production process will permit the SMEs involved in the project to obtain a competitive advantage based on:

- the reduction of the Time to Market
- the reduction of production costs,
- maintain the production in the origin country, without the need of delocalization
- the reduction of the time necessary to produce pre-series models of shoes and possibility to have more pre-series models
- the flexibility of the production, since the standardization does not limit the style
- the possibility of accepting many small or medium-size orders
- an higher level of satisfaction for consumers, who will accept to pay more for high quality shoes
Quality Laboratory

• Quality control Laboratory provides Services on Quality assurance for shoe companies

• Testing and research on New Materials

• Certification of Company Quality Systems to introduce ISO 9000 standards

• Training courses for safety in the work place
Quality Laboratory

- Dynamometer
- Fleximeter (sole)
- Heel Machine (impact resistance)
- Fleximeter (leather)
The Rapid Prototyping laboratory provides services to shoe companies which want to develop prototypes of heels, soles, etc with the most innovative machines based on vacuum casting and 3D printers. The laboratory offers also a service of automatic digitalization of lasts and shoes.
**EXAMPLE 1**

<table>
<thead>
<tr>
<th>INPUT</th>
<th>TECHNOLOGY</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAD 3D</td>
<td>Dimension SST 1200</td>
<td>ABS Prototype</td>
</tr>
</tbody>
</table>
### Example 2

<table>
<thead>
<tr>
<th>INPUT</th>
<th>TECHNOLOGY</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAD 3D</td>
<td>ZCorp 510</td>
<td>Chalk Prototype</td>
</tr>
</tbody>
</table>

**INPUT**

CAD 3D

**TECNOLGY**

ZCorp 510

**OUTPUT**

Chalk Prototype