

# GPs Profile&Analisy

Diversify production towards high-quality, speciality and high-tech textiles and niche products

## THE ACHILLE PROJECT

13<sup>o</sup> November 2013  
Entrepreneurship Center, Łódź(PL)



**PLUSTEX**  
Policy Learning to Unlock  
Skills in the Textile Sector





DESIGN AND CREATIVITY, QUALITY FASHION PRODUCTS AND TECHNICAL GOODS OF **HIGH ADDED-VALUE** HAVE BEEN **IDENTIFIED AS MAJOR COMPETITIVE ADVANTAGES** OF THE EU TEXTILE AND CLOTHING INDUSTRY.





RESEARCH AND INNOVATION ARE  
CRUCIAL ELEMENTS TO FURTHER  
DEVELOP THE KNOWLEDGE BASE OF THE  
SECTOR AND TO PROVIDE FRESH  
IMPULSE





**GRADO ZERO ESPACE IS A LEADING RESEARCH, CONSULTING AND PROTOTYPING ORGANIZATION SPECIALIZED IN TECHNOLOGY TRANSFER OF MATERIALS AND TECHNOLOGIES COLLECTING DIFFERENT KNOW-HOWS AND IDENTIFYING NEW WAYS OF USING MATERIALS AND TECHNOLOGIES**

**GZE** ARISES AS A CONNECTOR AMONG DIFFERENT INDUSTRIAL SECTORS AND PURE RESEARCH ENTITIES (**UNIVERSITIES, TESTING LABORATORIES AND RESEARCHERS**) THE MISSION OF THE COMPANY IS TO DEVELOP **NEW MATERIALS AND TECHNOLOGIES** TO CREATE NEW PRODUCTS WITH THE AIM **TO IMPROVE** QUALITY OF LIFE, WORK AND ENVIRONMENT





ONE THE MAIN IMPORTANCE AREA OF RESEARCH IS TEXTILE, WHERE GRADO ZERO SPACE IS ABLE TO **PERFORM DEMONSTRATION AND PROTOTYPING ACTIVITIES IN THE FIELD OF TECHNICAL FABRICS DESIGN**, INCLUDING THE DEVELOPMENT OF COMPLEX TEXTILE STRUCTURES. SOME RELEVANT EXPERIENCES IN NEW MATERIALS INCLUDE THERMO-ACTIVE POLYMERS AND HIGH PERFORMANCE FIBRES OR SMART COATING **WITH INNOVATIVE ADDED PROPERTIES**. THE EXPERIMENTAL ACTIVITY INCLUDES THE **DEVELOPMENT OF ECO-FRIENDLY FABRICS USING NATURAL FIBRES SUCH AS CYPRESS, PEAT, KAPOK, NETTLE, SPIDER-WEB AND PROCESSES FOLLOWING ECO-COMPATIBILITY'S PARAMETERS**.







**DURING THE 6FP AND 7FP, GRADO ZERO ESPACE PARTICIPATED TO SEVERAL EU PROJECT PROVIDING COMPETENCE IN MATERIALS STUDY, CHOICE AND INTEGRATION, DESIGN, TEXTILE CONSTRUCTION, TESTING AND DISSEMINATION ACTIVITIES**





Regione Toscana



REPUBBLICA ITALIANA



Unione Europea



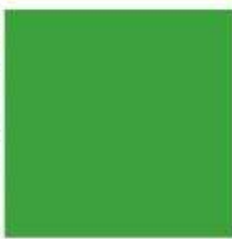
SEVENTH FRAMEWORK PROGRAMME



CROSSTEXNET



Le ali alle tue idee



# progetto ACHILLE



**POR  
CREO  
2007-13**  
PROGRAMMA  
OPERATIVO REGIONALE  
OBIETTIVO  
REGIONALE  
COMPETITIVITÀ  
e OCCUPAZIONE  
Fondo Europeo  
di Sviluppo Regionale







**THE EUROPEAN TEXTILE SECTOR HAS AN ACTIVE COMMITMENT WITHIN THE LEAD MARKET INITIATIVE THAT AIMS AT PROVIDING APPROPRIATE MEASURES FOR BOOSTING THE MARKET OF PROTECTIVE TEXTILES.**

**NOWADAYS MORE THAN 12 MILLION PEOPLE IN EUROPE SUFFER FROM CHRONIC SKIN PROBLEMS IN PARTICULAR SPECIFIC CATEGORIES OF WORKERS AND SPORT ATHLETES**



## **PROJECT** TRANSNATIONAL

**COFINANCED BY**  
EUROPEAN REGIONAL DEVELOPMENT FUND (ERDF) AND  
REGIONAL OPERATIONAL PROGRAM (POR CREO 2007-2013 - REGIONE  
TOSCANA)

**FRAMEWORK**  
DEVELOPED WITHIN EU SEVEN FRAMEWORK PROGRAMME

**AIMS**  
THE PROJECT HAS AS ITS PURPOSE TO ADD SPECIFIC FUNCTIONALITIES TO  
FABRICS TO INCREASE THEIR COMFORT, PROTECTION AND PERFORMANCES,  
WITH ELEMENTS THAT PROVIDE HUMAN SKIN HEALTH





# PARTNERSHIP



grado° zero espace

LEAD PARTNER



Robert Blondel  
Cosmetics



**THE DEVELOPMENT OF AN ANCHORING SYSTEM TO IMPLEMENT THE LIGNANS IN THE FINISHING PROCESSES, AND A STUDY FOR THE VALIDATION OF THE KINETICS OF RELEASE AND, THEREFORE, THE EVALUATION OF THE EFFECTS. THE PURPOSE OF THE PROJECT IS THE EVALUATION OF THE BENEFICIAL EFFECTS OF LIGNANS, IN PARTICULAR, FOR CERTAIN CATEGORIES OF WORKERS, ATHLETES AND PEOPLE WITH CHRONIC SKIN PROBLEMS**



- 1 . The development of a **number of functionalities** based on organic compounds, based themselves on a class of **herbal extracts called lignans** , by encapsulating in textile supports.
- 2 . The development of **the concept of functionalization** that belongs to a studied distribution of capsules focused on the specific characteristics of the final use or user. Primary objective: **the demonstration of the applicability** of the identified functions on different materials (polyamide, cotton, polyester ) and textile structures.
- 3 . The understanding of the **kinetics of release**, with particular attention to comfort characteristics of final user related to different application contexts (sport and work), and on **skin/product interactions** taking into account the dynamics on the skin, bacterial activity and the associated effects .



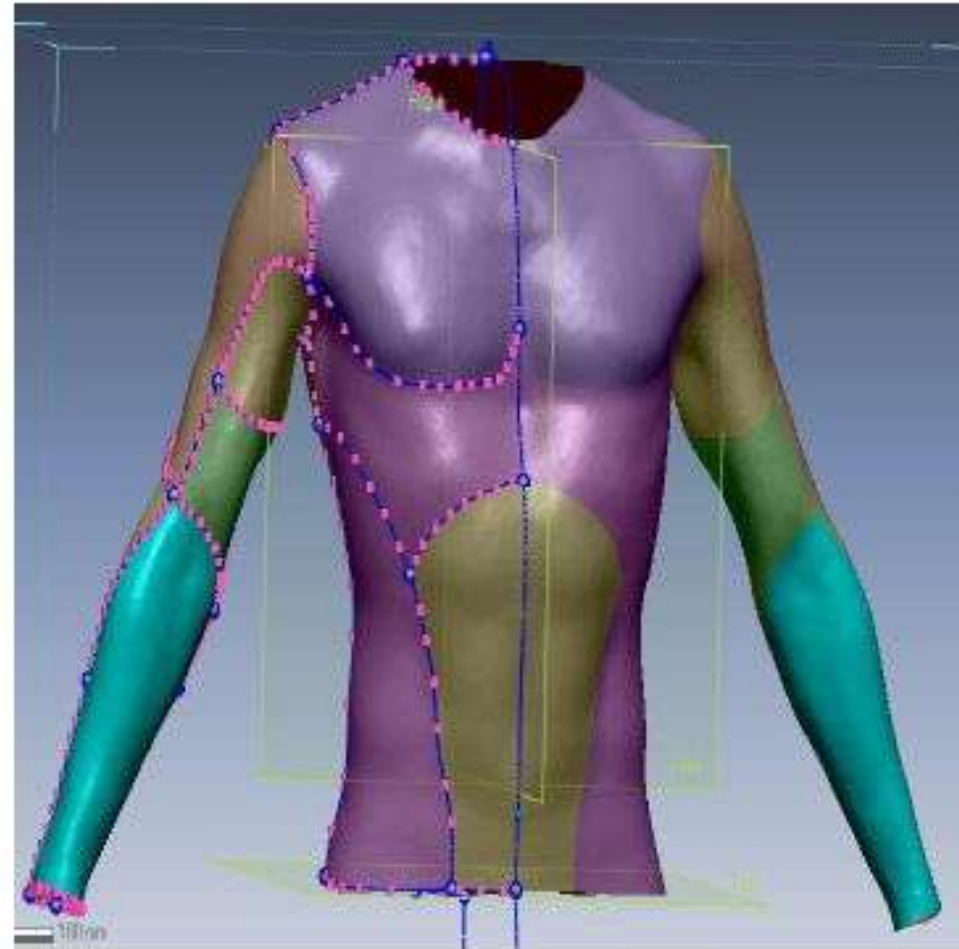
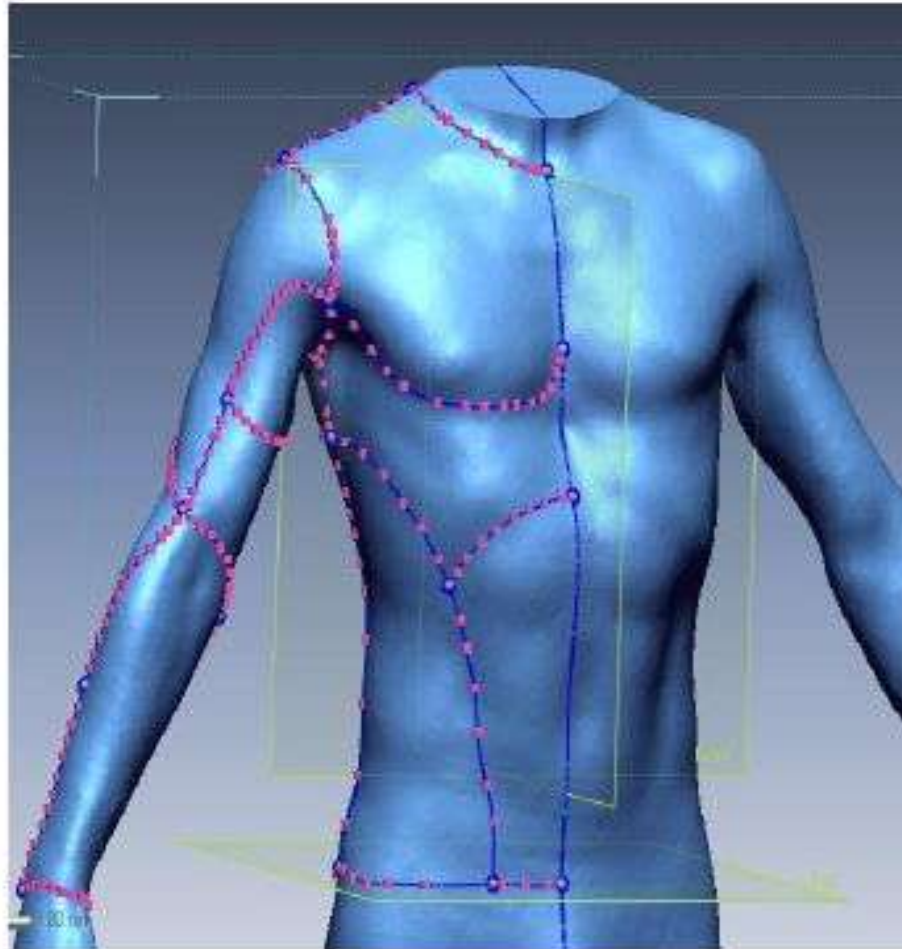
Listing out the end user requirements (biker's jacket)

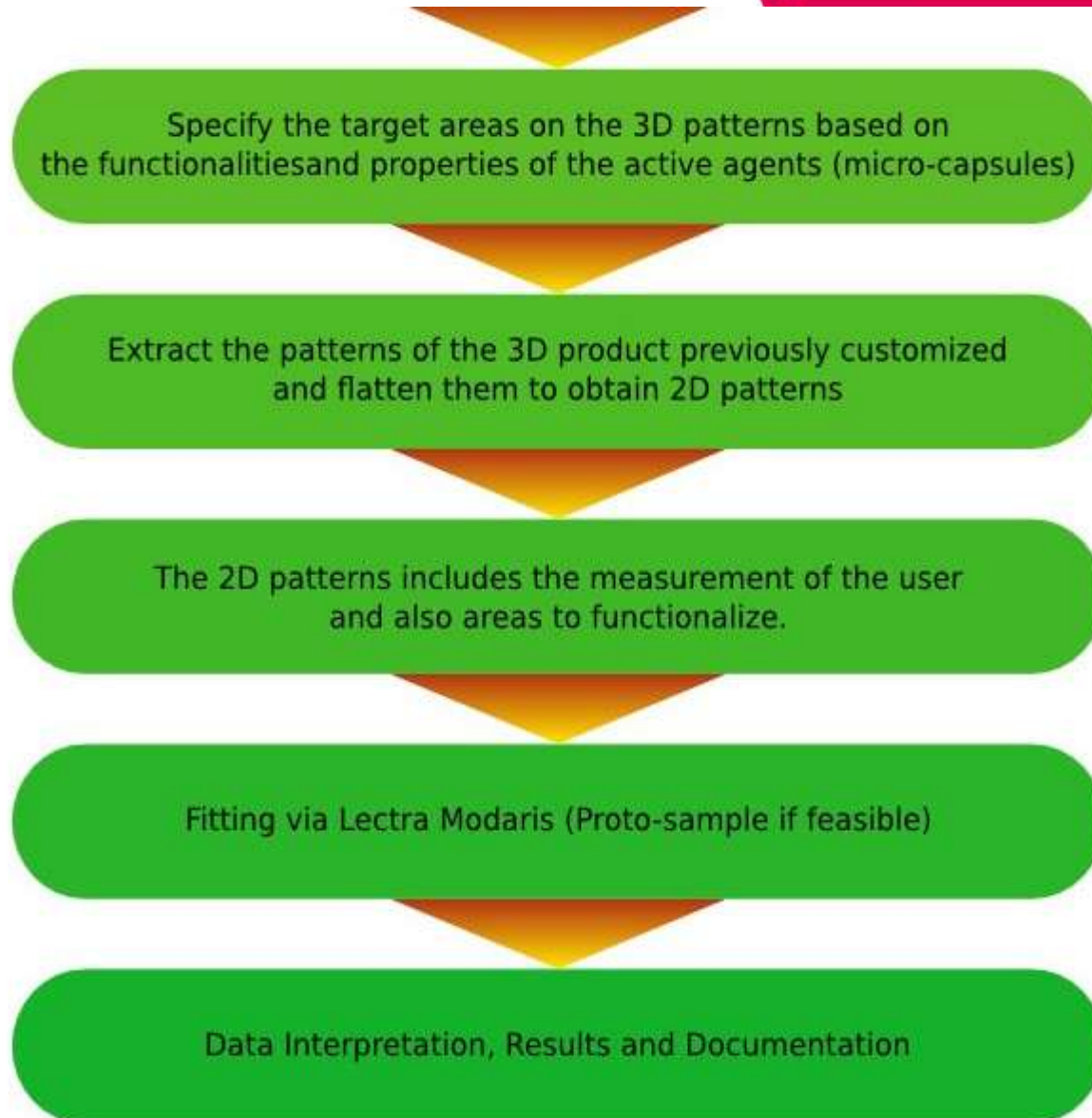
Obtain the morphology via 3D scanner  
and design of 3D patterns (stand-up position)

Obtain morphology via 3D scanner  
and design of 3D patterns (bike position)  
with respect to stand-up position

Extraction of 2D patterns for both positions  
in order to compare the patterns

Analysis of the deviations of the patterns in both positions  
in order to locate the areas of functionalization





- PUBLIC AND PRIVATE RESEARCH INSTITUTES
- UNIVERSITY RESEARCH DEPARTMENTS
- EXPERTS FROM RELATED INDUSTRIAL SECTORS:
  - 1- INNOVATION ENABLERS - who will contribute with knowledge about technological advances that can be transferred to textiles
  - 2- INNOVATION COSTUMERS - who will contribute with knowledge about industrial requirements and innovation needs needs that can be met through transfer from the textile domain



## EVIDENCE OF SUCCESS

- **IDENTIFIED** THE CORRECT TYPE OF LIGNANS TO BE USED FOR THE TRANSFER TO TEXTILES THE REQUIRED CHARACTERISTICS
- **DEVELOPED** AND EVALUATED THE BEST METHODOLOGY OF ENCAPSULATION OF LIGNANS THEMSELVES
- **CARRIED OUT** WITH POSITIVE RESULTS, THE ANALYZES AIMED AT HIGHLIGHTING THE PRESENCE OF POTENTIALLY TOXIC WASTE AT THE END OF THE DEPOSITION PROCESS
- **COMPLETED** ERGONOMICS STUDIES ON THE FINAL PRODUCTS TO BE ABLE TO PROCEED TO A MORE PROPER FUNCTIONALIZATION OF THE FABRICS
- **REALIZED** TWO FINAL PROTOTYPES BASED ON STUDIES OF ERGONOMIA AND 3D MODELING







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progetto

**ACHILLE**



## EVIDENCE OF SUCCESS A CRITICAL POINT

AFTER SPECIFIC TESTS AND SIMULATIONS THE INDUSTRIALIZATION OF THE LIGNANS **EXTRACTION PROCESS HAS BEEN CONSIDERED TOO COMPLEX AND EXPENSIVE**, HARDLY ACCEPTABLE IN THE INDUSTRY IN **TERMS OF COST / BENEFIT**

**HOWEVER**, THE **INCREDIBLE POSITIVE RESULTS OF RESEARCH ON THIS TEXTILE PRODUCT QUALITIES FOR THE SKIN'S HEALTH AND CANCER CARE SHOULD INVITE** TO THE **DEVELOPMENT OF BUSINESS MODELS FOR THIS TYPE OF PRODUCTS PROBABLY OPTIMIZED BY THE SUPPORT OF INSTITUTIONS AND PUBLIC ENTITIES**





## GP TRANSFERABILITY

THIS KIND OF RESEARCH, STUDIES, PROTOTYPING AND BUSINESS SIMULATION ON HIGH PERFORMANCE AND NEW FUNCTIONALITIES TEXTILES COULD MORE EASILY AND PREFERABLY BE TRANSFERRED WITH **THE COOPERATION OF PUBLIC AND PRIVATE RESEARCH CENTRES, UNIVERSITIES AND COMPANIES WITH A STRONG AND ORGANIZED SUPPORT OF INSTITUTIONS AND PUBLIC BODIES.**





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REGIONE TOSCANA



progetto

**ACHILLE**

## Contact details about ACHILLE Project

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