

Research Program: PN-III-P2-2.1-PED-2019

Project: Innovative medical device for emergency and operational medicine CELLMATRIX
Coordinator: National Research and Development Institute for Textiles and Leather, Bucharest Romania

Partners: SC Sanimed International Impex SRL, Romania
Medical-Military Scientific Research Center, Romania

Advances in resuscitation, surgical management, infection control, hypermetabolic response control, and rehabilitation have resulted in significant improvements in burn mortality and morbidity over the past 60 years. Infection is a major complication of burns. Burns are classified

according to their depth and severity in grade I, II, III and IV.

Goal: As a response to this problematic issue, as primary or secondary dressing, within the project **CELLMATRIX** a complex composite matrix for hemostasis and connective tissue regeneration will be design, developed and validated. The demonstrative model will consist in three layers, namely semi-adherent or a non-adherent layer, absorptive layer and bacterial barrier layer.

General objectives:

- Use of the knowledge generated in fundamental research efforts carried out at the level of the partner organizations to move to a higher technological maturity level (demonstrator, laboratory validated technology).
- Increase the capacity of the partner research organizations (INCDTP and CCSMM) to generate validated solutions in the laboratory for new products and technologies and to offer them to SC SANIMED SA.

Specific objectives:

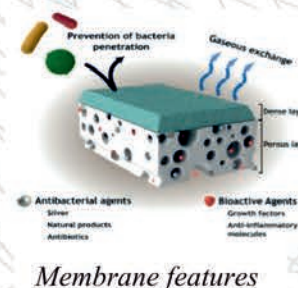
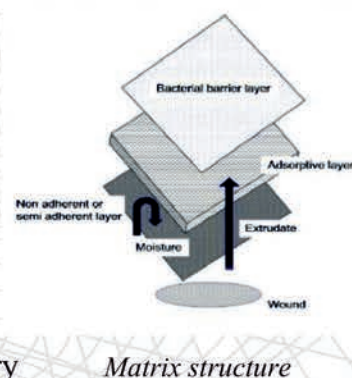
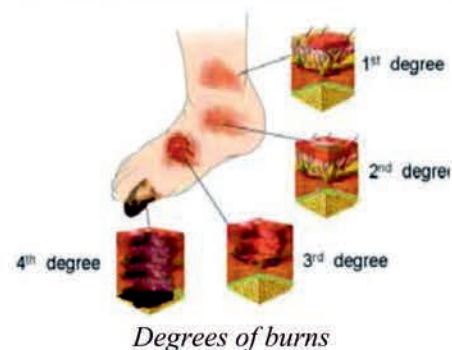
- ✓ To substantiate the new technological solutions for the development of medical device for tissue regeneration dedicated to emergency and operational medicines.
- ✓ To design the functionalised multilayer matrix for hemostasis and connective tissues regeneration.
- ✓ To develop a new innovative medical device for hemostasis and connective tissue regeneration.
- ✓ To evaluate the functionality and biocompatibility of the developed medical devices according to the requirements of the certification entities.

Main innovative aspects: novel surface-engineered nanomaterials aiming at the development and implementation of innovative concepts for the generation of nanoarchitectures/nano chemistries on the surface of the newly developed textile substrate which combine different functionalities. The key action is to develop the nanoscale fibrous mats with controlled pore size and structure, from both natural and synthetic origin polymers; extending the range of antibacterial elements and functionalisation of the electrospun wound dressings with active compounds that accelerate wound healing and tissue regeneration; development of new models and protocols for in vitro and in-vivo studies of interface processes, cell biological and microbiological response.

The main deliverables of the project are: variants of textile structures, hydrogel substrates, functionalized substrates, demonstration model of matrix for hemostasis and tissue repair.

Project website: <http://www.incdtp.ro/cellmatrix.html>

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Ministry of Research,
Innovation and Digitalization



TECHNOLOGY BUSINESS INCUBATOR < ITA TEXCONF >

ITA TEXCONF is an entity belonging to the TT infrastructure, founded on the basis of HG 406/2003 and accredited with the certificate number 118/2020, for the textile-clothing domain, of which activity is mainly directed towards:

- facilitating the initiating and developing of new innovation private enterprises based on advanced technology;
- stimulating the innovation and technology transfer for the purpose of introducing into the economic circuit the research results that are transformed into new or improved products, processes and services.



Main objectives:

- Incubating of textile-clothing SMEs, ensuring of logistics services;
- Creating of partnerships, developing of interest groups having in view the innovation product/technology transfer towards the industry, specially towards SMEs;
- Know-how transfer between INCDTP and SMEs.

Services:

- Services of sustaining textile-clothing SME competitiveness within the competitive background of the market economy;
- Services aiming at creating partnerships and financing drawing in within the projects
- Services aiming at product, equipment, innovation technology promoting in the field of textile-clothing, as part of scientific events (fairs, symposiums, conferences etc.);
- Mediating of contracts of technology transfer/manufacturing of products, experimental models, prototypes, invasive and non-invasive medical devices, textile articles meant for consumables, special destination articles etc.
- Mediating of contracts in the field of investigating the textile material and product properties, within the RENAR accredited INCDTP laboratories.

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