

PROJECT TITLE: Development of novel textile materials with micro-encapsulated bio-active compounds – NOVAHEAL

CONTRACT No.: 133/2020

PROJECT STARTING DATE: 01.01.2020 → **PROJECT ENDING DATE:** 31.12.2022

PROJECT PARTNERS:



HOFIGAL EXPORT IMPORT SA - COORDINATOR (RO)



National Research and Development Institute for Textiles and Leather (RO)



KIVANÇ TEKSTİL San. ve Tic. A.S. (TR)

PROJECT SCOPE: The main objective of the project is to develop multi-functional antimicrobial textile materials to prevent bacteria spreading and to create an antimicrobial shield for the human body.

MAIN RESULTS – STAGE II (01.01.2021-31.12.2021)

1. Optimization of dispersion preparation process and physico-chemical and microbiological characterization



Ultrasound bath



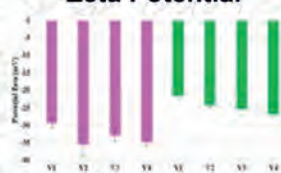
Water bath



Mechanical stirrer

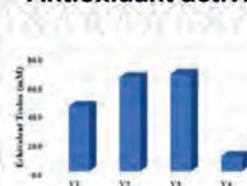
↓ **Ultrasound bath**
8 variants of dispersions

Zeta Potential



dispersions with a concentration of 1 g/L are more stable than those with a concentration of 3 g/l

Antioxidant activity



Of the 4 variants with a concentration of 1 g/l tested, only dispersion 4 did not show satisfactory results.

Microbiological activity

Staphylococcus aureus
Escherichia coli

All dispersions show antibacterial activity

2. Laboratory experiments for the treatment of textiles with selected dispersions. Physico-chemical, physico-mechanical and microbiological characterization

Textile treatment→

100% Cotton
100% Polyester

Impregnation only with dispersion

Impregnation with dispersion and after drying impregnation with Itobinder AG 20 g/l

Impregnation with modified dispersion with Itobinder AG 20 g/l

Physico-chemical, physico-mechanical and microbiological characterization↓

Air and water vapor permeability

Contact angle

Chromatographic analysis

pH and formaldehyde

SEM-EDS analysis

Antibacterial activity

Exposure to artificial light and determination of white and yellow indices

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THE TECHNOLOGIC AND BUSINESS INCUBATOR < ITA TEXCONF >

ITA TEXCONF is an entity in the infrastructure of innovation and technological transfer without legal personality, established within INCDTP based on HG 406/2003, accredited for the textile – clothing field and re-accredited in 2020, Certificate no. 118/2020, issued by the Ministry of Education and Research.



ITA TEXCONF is part of the National Network for Innovation and Technology Transfer ReNITT and acts for the sustainable economic and social development of the textile sector, by ensuring access to technological performance, developing the innovative environment, introducing quality systems and developing human resources.

The incubator is involved in specific actions of collaboration with all 4 existing clusters in the textile field, of which it is part as an active member: Romanian Textile Concept Cluster – RTxC, ASTRICO NE, Traditions Manufacture Future and Transilvania Textile & Fashion Cluster.



Services:

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

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