Автор: Администратор
20.06.2019 20:15

Start of the project, first IFSITEX project meeting in Riga

Project name: Innovative multifunctional biotextile, integrated with silica dioxide and succinite development, and its impact on Biosystems.

Acronym: IFSITEX

Project EUREKA NR: E!11170

Leading partner: JLU Technologies Ltd, LATVIA
Countries involved: Latvia and Lithuania
Total budget: 670 000.00 euro
Partners from Latvia: JLU Technologies Ltd and University of Latvia, Institute of Biology
Partners from Lithuania: The State Scientific Research Institute Nature Research Centre (NRC)

and SME AB LINAS
Time of project implementation: 15.06.2018. – 15.06.2021.
Project leader: Dr.sc.ing. Inga Ļašenko
Project UL leader: Dr.biol. Dace Grauda
Project Lithuanian leader: Dr.hab.biol. Dalius Butkauskas
Project AB Linas leader: Vilita Skersiene
The project concept is comprehensive research-based development of innovative biotextile with the potential ability to protect living organisms from adverse external environmental factors. For the first time, there will be performed investigations of complex compounds integrated into textiles including nano-particles of succinite and silicium dioxide. The results of the study will be taken into account and used for production of new biotextile materials with specific qualities useful for medical care and other purposes.
Project description:
Nowadays unfavourable urban factors (UV radiation, intensity of which is increased by modern architecture, low frequency electromagnetic field, chemical and other pollutants) have an increasing influence on human health. It is one of the city's social problems, which has a global character. One of the ways to solve negative urban environmental impact on the population is to produce innovative biotextile materials with protective abilities against aggressive environment. Biotextile materials are particularly relevant if the impact of unfavourable factors cannot be prevented. The project concept is based on comprehensive research designed to collect evidences of effectiveness of nano- materials used for development and production of innovative biotextile with the potential ability to protect living organisms from adverse external environment factors.
During the course of the project, there will be created a unified platform in the Baltic States (development, research and production of biotextiles). It will provide basis for similar research including development and testing of new biotextile products after the project will be completed. Results of the project will be useful for small and medium-sized enterprises involved in designation and production of new biotextile materials.
Main tasks of University of Latvia (LV) and Nature Research Centre (LT) there is studies of the influence of silica dioxide and succinite nano- particles alone and in complex on test organisms and cell cultures. Assessment of protective properties of amber active components there will be studied as well including both nuclear and mitochondrial DNA levels (for example, mitigation of induction of retrotranspozone activity, DNA mutations, epigenetic changes in the cells and model organisms). Based on this, new biotextile materials with unique protective abilities against environmental factors, with stable physical and mechanical qualities, indifferent or with positive influence on live cells or biosystems will be elaborated and introduced into production phase. In combination with organic (amber particles) and inorganic (silica nanoparticles) components, there will be developed technology for production of innovative biotextile material – it is the main task of JLU Technologies Ltd (LV) and AB Linas (LT) .

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