Electronic Systems Integrated into Textile Substrates

(FEIM – **F**uture **E**lectronics for **I**ndustry 4.0 and **M**edical 4.0 project)

Objectives of the Project

Implementation of conductive connections and electrode structures into textile materials using a combination of metallic and non-metallic components. Outputs are targeted at healthcare, integrated rescue services, sports activities and automotive. Electronic elements are integrated so that they become an integral part of the textile matrix.

Topics covered by the Project

- Integration of electronic structures into flexible textile carriers for wearable electronics in healthcare, leisure activities and the automotive industry
- Linear textile electrically conductive structures combining metallic and non-metallic materials with a higher degree of flexibility and stability of conductive interconnection
- Multifunctional textiles with integrated sensors indicating the presence of selected markers
- Textile materials meeting the parameters for non-flammable textiles intended for products for the protection of the health and safety of persons in hazardous environments

What will the Project Results enable?

- A new generation of sensors and conductive materials showing high rates of incorporation into textile carriers
- Conductive yarns or fibres resistant to mechanical stress designed for signal transmission or charge dissipation
- Electrochemical sensors integrated into a textile matrix designed to detect selected markers

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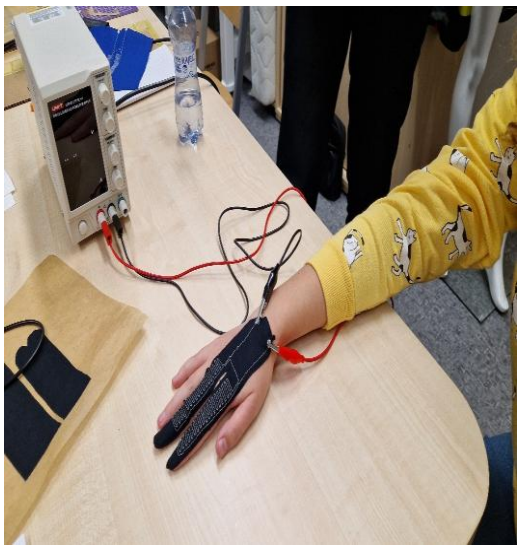
- Comprehensive technology for the production of conductive yarns with integrated sensor elements and their connection to evaluation and communication platforms.



Selected Results

- Conductive linear textile hybrid structures combining metallic and non-metallic elements protected by patent
- Technology for the production of textile materials with integrated electronic elements, including their interconnection to evaluation and communication devices
- Functional sample of a universal textile sensor platform for monitoring concentrations of selected biomarkers from sweat
- Textile electronic and sensor structures in the form of embroidered, woven or printed elements protected by a utility model

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Leader : Ing. Lubomir Kubac Ph.D., Centrum organicke chemie Centre for Organic Chemistry

Contact: lubomir.kubac@cocltd.cz

Partners involved:

More about FEIM project can be found on projects webpage.

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