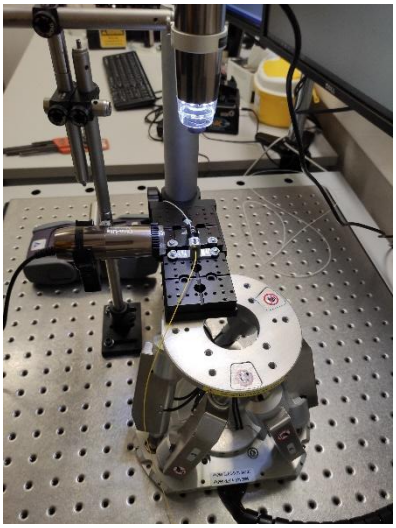
Sensors for Industry and Industrial Automation

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

Objectives of the Project

We aim to develop fiber-optic sensors for pressure, deformation and position monitoring for use in harsh-environment applications. The basis of the proposed sensors will be a low-temperature co-fired ceramic (LTCC) membrane combined with a fiber-optic interface in a Fabry-Perot interferometer configuration.



Topics covered by the Project

- Low-temperature co-fired ceramic (LTCC) 3D structures development
- Fiber-optic Fabry-Perot sensor design, optimization and realization
- Data read-out and real-time processing
- Combining diffractive and refractive structures for temperature compensation

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What will the Project Results enable?

- Precise pressure detection in harsh environments
- Real-time monitoring
- Sensor network overseeing multiple detection points
- Low-temperature co-fired ceramic (LTCC) development for sensing applications

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Selected Results

- Pressure sensor for use in explosive environments.

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- Sensor element with a fiber-mirror resonance structure
- Combined sensor element with resonance and diffractive structure
- Design of sensor elements for pressure measurement based on low temperature co-fired ceramics substrate

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More about FEIM project can be found on projects webpage.

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