



METROIND4.0&IoT

CALL FOR PAPERS for the Special Session on

APPLICATIONS OF FIBER OPTIC SENSORS IN INDUSTRY 4.0

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ABSTRACT

The fourth industrial revolution, known as Industry 4.0, is fundamentally influencing the quality of industrial products, manufacturing processes, healthcare management, and service delivery, becoming part of our daily life. Within the framework of Industry 4.0, the development of fully integrated platforms, which includes sensors, data acquisition hardware, and software, are considered to be indispensable and very attractive. In this context, the applications of fiber optic sensors (FOSs) are reaching growing interest showing several advantages over the competitors. FOSs are small, light, highly sensitive, chemically inert, dielectric, non-toxic, immune to electromagnetic interferences, and easily multiplexable. These advanced properties enable the measurement of different parameters for environmental, mechanical, and chemical sensing in various scenarios, including harsh environments (e.g., long expositions to voltage and radiation, excessive temperature, and high pressure).

TOPICS

This Special Session aims at addressing the key aspects of FOS-based applications in Industry 4.0 by gathering researchers and practitioners, working in this field, to introduce and discuss their latest scientific results with a main focus on the following topics:

- Fiber optic sensors and biosensors;
- Innovative practical solutions for designing fiber optic sensors;
- Wearables and flexible sensors based on fiber optics;
- Contact-based sensing solutions based on fiber optics;
- Fiber optic sensors for unobtrusive health state monitoring;
- Environmental stressors detection using fiber optic sensors;
- Injuries prevention and occurrence reduction using fiber optic sensors;
- Data processing for accurate measurements using fiber optic sensors;
- Metrological characterization of fiber optic sensors.

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