



# METROIND4.0&IoT

## CALL FOR PAPERS for the Special Session on TEMPERATURE AND VIBRATION MEASUREMENTS FOR CONDITION-BASED MAINTENANCE OF MACHINERIES

### ORGANIZER



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Marco **Tarabini** (Lecco, Italy, in 1978) received the M.Sc. degree in mechanical engineering and the Ph.D. cum laude in engineering of mechanical systems from Politecnico di Milano, Milano, Italy. He is currently an Associate Professor of Mechanical and Thermal measurement at Politecnico di Milano. His research is focused on different aspects of vibration measurements, spanning from the study of the response of the human body to vibration to the development of measurement systems for industrial application. In the field of human vibration, he developed measurement systems, data analysis procedures, and biomechanical models to better interpret the response of the body to hand-arm and whole-body vibration. He developed and commissioned to industries different measurement systems for monitoring mechanical and thermal parameters of machinery. He authored more than 100 scientific publications and lead more than 30 research projects on measurements in cooperation with industries.

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### ABSTRACT

Temperature and Vibration measurements are the main parameters used to describe the state of machinery. Contact and Infra-Red temperature measurements are essential tools for ensuring the safety and the reliability of machinery and thermal imagers help the technicians in quickly identifying potential problems resulting in thermal machinery alterations. On the other side, vibration measurements are probably the most diffused method for condition monitoring, and the paradigms of I4.0 (wireless sensors, machine learning, big data, and cloud-based analyses) increase the potentialities of vibration-based measurement systems.

IoT systems based on grids of thermometers and MEMS accelerometers, connected to cloud systems with digital interfaces or via WiFi, tend to replace the classical monitoring systems based on few temperature measurement points and a limited number of vibration pickups with analog output, posing new challenges in industrial metrology.

The special session will focus on metrological aspects and data analysis procedures of temperature and vibration measurements performed with IoT and traditional sensors.

### IMPORTANT DATES

**March 1, 2021**  
Extended Abstract Submission

**March 28, 2021**  
Acceptance Notification

**April 30, 2021**  
Final Paper Upload Deadline

### CONTACTS



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