



2019 IMEKO TC-4 INTERNATIONAL CONFERENCE ON

# METROLOGY FOR ARCHAEOLOGY AND CULTURAL HERITAGE

FLORENCE, ITALY | DECEMBER 4-6, 2019

## CALL for PAPERS for the special session on:



UNIVERSITÀ  
DEGLI STUDI  
FIRENZE

### IOT BASED SYSTEMS FOR THE STRUCTURAL HEALTH MONITORING AND THE ANALYSIS OF CULTURAL HERITAGE BUILDING AND ARCHAEOLOGICAL SITES

#### → ABSTRACT

The session will provide new information about the structural assessment of the entire cultural heritage buildings, allowing the analysis of structures belonging to different typologies and realized with different materials (Steel, wood and masonry), also, for example, related to industrial archeology.

New trends and applications in the field of nondestructive and semi destructive techniques will be discussed in order to identify and apply new Structural Health Monitoring (SHM) systems also based on the paradigm of Internet of Things (IoT). Post-seismic and pre-seismic evaluation protocols of historical and monumental buildings will be also presented in order to safeguard and preserve all types of structures.

In the framework of the preservation of the cultural heritage, one of the most important aspects deals with the monitoring of the archaeological sites and cultural heritage buildings. To this aim, new technologies are nowadays available for the acquisition and elaboration of several parameters used for the health and safety assessment and the development of new mathematical model describing the structural behavior of these buildings and sites. Main challenges concern with heterogeneity and mobility of the Smart Objects used to acquire data, different kind of connections, energy saving, energy harvesting, the collection and management of the acquired data, the development and validation of new numerical models, and last but not least the development of new sensor and methodologies to manage the different materials typically used in cultural heritage building and constituting the archaeological sites. The special session "IoT based Systems for the Structural Health Monitoring and the Analysis of Cultural Heritage Building and Archaeological Sites." is trying to examine common ideas and directions among different contemporary theoretical and technical approaches. The special session will collect scientific expertise and the technologies nowadays available. The goal is to give a set of triggering contributions useful to propose new and common approaches for the design and realization of new systems for the preservation of cultural heritage.

#### → ORGANIZED BY



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