



2020 IMEKO TC-4 INTERNATIONAL CONFERENCE ON

# METROLOGY FOR ARCHAEOLOGY AND CULTURAL HERITAGE

TRENTO, ITALY | OCTOBER 22-24, 2020

## CALL FOR PAPERS *for the Special Session on* THE INTERACTION BETWEEN ENVIRONMENTAL POLLUTION AND CULTURAL HERITAGE: FROM OUTDOOR TO INDOOR ENVIRONMENT

### ABSTRACT

The conservation state of works of art, both outdoor and exhibited inside museums, is strongly influenced by the environmental quality. In outdoor environments atmospheric pollutants are responsible of different phenomenon including stone sulphatation and black crusts formation. Temperature and relative humidity are generally monitored in indoor environments but they are not the only parameters to be kept under control. PM (particulate matter) can negatively affect air quality, both outdoor and indoor, and the knowledge of its concentration, particles size distribution and chemical composition must be achieved. In order to get more detailed information on possible risk to which works of art are subjected, a deep knowledge of pollutants (including both gases and particles) concentrations, chemical and physical characteristics is mandatory. In particular the finer fraction must be of greater concern since nanoparticles are able to interact with the work of arts surfaces. Monitoring of microbial should also be considered because it is harmful for the surfaces and biodeterioration represents an important variable in the conservation of cultural heritage. Furthermore, it should be remembered that pollutants act in a synergic way together with other factors (humidity, temperature, etc.) and often the overall effect could be even worse than that caused by any individual factor. This bring to the degradation and alteration of the objects surfaces. The knowledge of pollutants sources can help in controlling and reducing this damage, avoiding expensive restoration interventions.

### TOPICS

Topics of this special section include but are not limited to:

- Study of phenomenon induced by pollutants on outdoor surfaces;
- Outdoor air quality monitoring to assess the impact of pollutants on cultural heritage;
- Air quality in museum environments;
- Monitoring of microbial load;
- Assessments of pollutants affecting cultural heritage through innovative systems;
- Innovative methods for surfaces restoration.

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SPECIAL SESSION #12



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