



SPECIAL SESSION

CHARACTERIZATION AND MONITORING OF MATERIAL DEGRADATION IN HISTORICAL, ARTISTIC, AND ARCHITECTURAL ARTEFACTS

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OBJECTIVE AND TOPICS: The Special Session focuses on recent advances in non-destructive testing and monitoring techniques for characterizing and assessing material degradation in historical, artistic, and architectural artefacts. Specifically, the topics will focus on the non-destructive characterization of degraded materials and the evaluation of degradation processes, aiming to provide valuable insights for preventive conservation and long-term condition monitoring. This session aims to gather contributions addressing both fundamental research and applied case studies, with an emphasis on innovative diagnostic protocols, multi-technique integration, and data-driven approaches capable of detecting, quantifying, and tracking the evolution of material degradation over time.

Areas of interest include, but are not limited to:

- Non-destructive techniques for detecting and quantifying material degradation (ultrasound, infrared thermography, GPR, hyperspectral imaging, X-ray, neutron, etc.)
- Time-lapse and in-situ NDT for long-term monitoring of deterioration
- Multiscale approaches to study degradation mechanisms
- Environmental effects such as moisture, salts, pollutants, and biological growth
- Data fusion and digital tools for degradation mapping and condition tracking, including HBIM and Digital Twin
- Quantitative indicators for assessing material stability
- Integration of NDT results in conservation and risk management strategies
- Case studies on built and mobile cultural heritage

All the instructions for paper submission are included in the conference website: <https://www.ecndt2026.org>