

SPECIAL SESSION

Active Thermography Techniques for NDT and Material Characterization

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OBJECTIVE AND TOPICS: Active thermography (AT) represents the set of techniques and procedures used for investigating the thermal phenomena related to the presence of defects or more in general, damage into materials. In the last years, these methods were used in many applications ranging from metallic materials to composites for crack detection and crack growth monitoring and defects detection. In particular, the use of focal plane array detectors (FPA) allowed the development of new Infrared Thermography techniques and new methods for data analysis.

The increasing use of Active Thermography in industrial and civil applications was principally due to its peculiarities that combining the full-field information of data with a relatively simple experimental set-up and consequent reduction of time and costs.

In literature are present two different approaches to the Infrared thermography: active and passive.

Active Thermography requires external heat sources such as, halogen lamps, flash lamps, laser source, etc. This latter is used for detecting surface or sub-surface defects or for the thermos-physical characterization of materials.

This special session aims to provide a forum for practitioners of AT to convene, discuss the current state-of-the-art, recent advancements, and future directions.

Areas of interest include, but are not limited to:

- Progresses in Active Thermography techniques
- Use of low-cost infrared sensors
- Integration and data fusion with other full-field experimental/numerical techniques
- Civil engineering and Infrastructure
- Assessing the condition of cultural heritage
- Evaluation of fatigue damage
- Structural Health Monitoring and damage detection
- Thermos-physical characterization of materials
- Industrial Case Studies and Case Histories
- Artificial Intelligence in IRT
- Procedures and Standards

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