

## Nondestructive Characterization and Monitoring of Advanced Materials, Aerospace, Civil Infrastructure, and Transportation XIII

This conference has an open call for papers:

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### Important Dates

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Abstract Due:  
22 August 2018

Author Notification:  
29 October 2018

Manuscript Due Date:  
6 February 2019

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### Call for Papers

This conference creates an international forum to address the current state-of-the-art technologies in nondestructive characterization and monitoring of advanced materials and aerospace components, as well as technical challenges concerning infrastructure asset management including commercial/public transportation and public utilities. The inspection technologies encompass a cradle-to-grave timeline allowing for the monitoring of the fabrication process (e.g., advanced/additive manufacturing), assessing initial component quality, in-situ monitoring and system health, as well as evaluating repairs/retrofits. The overall theme focuses on identifying and fostering improvements and new developments regarding theory, hardware, implementation strategies, interpretation of data/results, and automation.

This conference will provide a medium for communication and collaborations among engineers and scientists in the following areas:

- SHM/NDE of advanced materials (e.g., refractories, polymer matrix composites, metal matrix composites, ceramic matrix composites, foams, high-performance alloys)
- development of NDE and SHM tools for automotive and aerospace components/systems
- life management and system analysis/design methodologies for diagnostics and prognostics of materials and structures
- civil infrastructure management for roads, highways, rail systems, bridges, buildings, water systems, dams, levees, pipelines, tunnels, chimneys, and power generation (e.g., natural gas, coal, nuclear, wind, hydropower, geothermal, solar, etc.)
- energy (electrical grids, power transmission, pipeline distribution systems, and/or oil and gas exploration)
- SHM/NDE sensor development, MEMS/NEMS, intelligent transportation systems, complex cyber-physical systems via control, networking, verification, and real-time systems to protect infrastructure including aeronautics, civil, materials, energy, automotive, medical, chemical, manufacturing, and agriculture

- continuous and life-cycle monitoring, repair/retrofit for cost mitigation, improving measurement accuracy, reliability, safety, and inspection technologies
- integration of multiple SHM/NDE technologies for improving interpretation of results
- automation of SHM/NDE technologies and industrial applications
- monitoring and NDE of additive manufacturing processes and finished parts
- modeling, simulation, and technology development at various scales ranging from nano- and micro- scale to super-large structures
- signal processing, data fusion, wireless sensor networks, image processing, and energy harvesting for SHM/NDE
- mitigation of man-made and natural hazards in physical infrastructure including buildings, highway infrastructure, bridges, dams, levees, and nuclear power plants
- environmental monitoring/sensing technologies and applications (e.g., unmanned aerial vehicle (UAV) monitoring)
- SHM/NDE technologies and applications in homeland security and counter-terrorism
- NDE/NDT standards, codes, regulations, and acceptance criteria
- NDE/NDT of self-healing materials, structures, and systems.

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