

SUBMIT AN ABSTRACT FOR THE FOLLOWING SYMPOSIUM

DATA-DRIVEN AND COMPUTATIONAL MATERIALS DESIGN

Computational Materials for Qualification and Certification

This symposium will bring together practitioners and decision-makers from multiple stakeholder groups, i.e. industry, academia, and government, to discuss the state-of-the-art and paths-forward in the development and adoption of computational materials (CM) technologies in industry qualification and certification (Q&C) for additive manufacturing and other process-intensive manufacturing technologies. The primary objectives of the symposium are to provide a detailed overview of the key elements relevant to the development and adoption of CM technologies in Q&C activities; facilitate continued collaborative discussions among the industrial, regulatory, and scientific communities, including identification of areas for government and industry R&D investments; discuss the needs and requirements of the federal agencies and regulatory bodies in this arena; and highlight the barriers and opportunities that are unique to different technologies. Target industries include but are not limited to aerospace, nuclear, defense, health care, automotive, and energy.

We are seeking contributed abstracts focused specifically on the development, acceptance, and use of CM tools in industries' Q&C processes, covering topical areas that include but are not limited to:

- Challenges and opportunities for the adoption and use of CM-informed approaches in the Q&C domain (including understanding of regulatory requirements / considerations and industry vision)
- Development and maturation of CM methods and capabilities that may support the industry vision for CM in the Q&C domain, with particular focus on their levels of maturity in that context.
- Verification, validation, and uncertainty quantification methods and capabilities that are needed to increase the level of industry and regulatory acceptance.
- The CM ecosystem supporting the industry vision for broader adoption of CM for Q&C. This ecosystem includes considerations such as training, education, testing, data sources, standards, best practice guides, organizational culture change, and examples of government / industry partnerships.
- The paths-forward for maturing CM methods for supporting different industrial sectors.

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