



ICAM25

International Conference on Advanced Manufacturing Research to Application through Standardization

October 6-10 | Las Vegas, NV

Non-Metallic Materials: Polymers



With a focus on progress in polymer materials for additive manufacturing, this symposium has an emphasis on the latest advancements related to material and process standardization, mechanical performance, and unique test standards. The need for documented design, analysis, qualification and certification methods, novel applications, and requirements for a trained workforce are also critical areas for discussion. In addition, this symposium will highlight the maturation of additive manufacturing technologies and processes with these polymer materials and how they work to produce complex geometries with suitable structural and functional properties.

TOPICS OF INTEREST INCLUDE BUT ARE NOT LIMITED TO:

- Material property characterization and test methods for feedstock materials, and long term material stability in a variety of operating environments and additively manufactured parts
- Long-term mechanical behavior of additively manufactured polymers, including fatigue, creep, and environmental degradation, with emphasis on testing and predictive modeling
- Understanding how variations in print- and post-process influence the physical, chemical, and mechanical characteristics of additively manufactured parts.,
- Design and analysis methods of both product and process including simulation advancements
- Characterization of defect formation and effects of defects
- Certification methods for product design through production
- Installation qualification (IQ), operational qualification (OQ), performance qualification (PQ), and developing standardized end-to-end workflows to ensure repeatability
- Workforce training, education, and operator certification
- Polymer based AM technologies including powder bed fusion, material jetting, material extrusion (including direct ink write and embedded direct ink write), vat photopolymerization, and binder Jetting
- In-situ measurements for process control
- Highly loaded polymer and composite systems
- Printability optimization including both formulation optimization as well as print process parameters optimization
- Sustainability in processes and materials
- Materials regulatory challenges and solutions
- Emerging polymer technologies topics including chemistry, filler technology, printer, and post processing
- Use of polymer AM in both direct and indirect production applications

Symposium Organizers

- **Mohammad Amjadi**, Arkansas Tech University, USA
- **Thomas Fabian**, Blue Sky Polymer Consulting, USA
- **Jessica Hemond**, TE Connectivity, USA
- **Callie Higgins**, NIST, USA
- **Phillip Nagel**, 3D Systems, USA
- **Karl Nelson**, Stratasys, USA

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an abstract
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