Design, Modeling, Simulation and Concepts for AM

Utilizing the freedom of design enabled by techniques such as topology optimization and generative design approaches is one key success factor in making the most out of Additive Manufacturing (AM). Design optimization, stress analysis, thermal modeling, microstructural evolution, and understanding the material-process-microstructure-property relationships significantly reduce the time and cost of AM implementation and improves adoption.

This symposium aims to cover the following topics (but not limited to):
- Design, modeling, and simulation methodologies in AM (such as those enabled by high-performance computing and machine learning)
- Design for additive manufacturing, including processes and post-processing (Post-machining and heat treatment)
- Topology optimization and reverse engineering (such as for legacy parts)
- Optimization of AM designs, and processes (Generative design, digital twins, CAE, etc.)
- Development of AM material-process-microstructure-property relationships, prediction, and control of material properties
- Standards needs for AM design and simulation
- Case studies, industrial use-cases, and applications
- Design of architected materials (Graded materials and cellular materials)