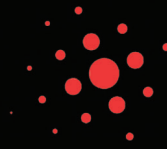




American Society for
Precision Engineering



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Meeting Announcement 2018 Summer Topical Meeting

Advancing Precision in Additive Manufacturing

Lawrence Berkeley National Laboratory
Berkeley, California, USA
July 22-25, 2018

Topics

- **Dimensional accuracy and surface finish from additive manufacturing (AM)**
 - State-of-the-art - What level of precision is achievable? ...and what developments are underway?...or are needed?
 - Functional specifications for form and finish
 - Prediction & modeling of dimensional errors and surface topography
 - Developments in fabricating lattice structures with high strut integrity
- **Design for manufacturing**
 - Design rules & tolerancing for additive manufacturing
 - Topology optimization in the context of AM and achieving precision
 - Novel designs for flexures or kinematic couplings
- **Characterizing the performance of AM machines**
 - In situ process monitoring, e.g. melt-zone temp, powder bed
 - In-process measurement of workpiece shape and topography
 - Using artifacts to assess machine performance; round-robin testing
 - Holistic views of the control system, process feedback, correction
- **Standards**
 - Certifying AM equipment capabilities
 - Industrial demands for ASTM and ISO standards
- **Integrating AM into a holistic manufacturing process**
 - Cost-benefit trade-offs of using AM within a complex process chain
 - Engineered partnerships between AM & secondary finishing
 - Dealing with residual stress and heat treatment in a process flow
 - Kinematic tooling or pallets for repeatable part handling
- **Metrology**
 - Surface topography measurements on rough contoured surfaces
 - Dimensional metrology of internal features using computed tomography
 - Multi-sensor approaches, data fusion, and machine learning
 - Complex form measurement, registration and fitting
 - Measurement of 3D lattice strut dimensional accuracy

Tutorials will be held on Sunday, July 22

Short Abstracts Due April 23, 2018
aspe.net

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University of North Carolina - Charlotte

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