Special Interest Group:

Advancing Precision in Additive Manufacturing

16th-18th September 2019

Ecole Centrale de Nantes
Nantes, France

American Society for
Precision Engineering

euspen

The 6th in the series of joint Special Interest Group meeting between euspen and ASPE on Advancing Precision in Additive Manufacturing is crucial to putting additive manufacturing (AM) onto the factory floor. We are seeking papers in the following categories:

1. Dimensional Accuracy and Surface Finish from Additive Manufacturing (AM)

- State-of-the-Art – What level of precision is achievable today?...and what developments are underway?... or are needed?
- New research work and commercially - available technologies for achieving precision
- Prediction and modeling of dimensional errors and surface topography

2. Design for Precision

- Design rules for additive manufacturing
- Topology optimization in the context of AM and achieving precision
- Novel designs for flexures, kinematic couplings or machine structures

3. Designing and Characterizing AM Machines

- In situ process monitoring, e.g. melt-zone temperature and 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

4. Standards

- Certifying AM equipment capabilities
- Industrial demands for ASTM and ISO standards

5. Integrating AM into Holistic Manufacturing Process

- Cost-benefit trade-offs of using AM within a complex manufacturing process
- Engineered partnerships between AM and secondary finishing operations
- Dealing with residual stress and heat treatment in a process flow
- Kinematic tooling or pallets for repeatable part handling

6. Metrology

- Surface form and texture measurements on AM surfaces
- Functional specifications for additive surface finish and dimensional accuracy
- Dimensional metrology of internal features using x-ray computed tomography
- Uncertainty and traceability with x-ray computed tomography
- Assessing measurement uncertainty

Please visit our website for further information

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