EUROMAT 2019 / Area C: Processing

SYMPOSIUM: C4

Title: Additive Manufacturing

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Abstract

Additive manufacturing (AM) is one of the most promising manufacturing techniques with a demonstrated huge potential in mostly all industrial areas (Automotive, Aerospace, Medical, etc.). Due to the inherent complexity of the AM-processes and numerous interlinked process parameters, the microstructure and hence mechanical properties of the AM-components differ substantially from the properties of the same component produced by conventional techniques. At the same time, utilization of this advantages of AM technologies open new dimension in material synthesis with tailored properties. This symposium aim to tackle all aspect of additive manufacturing with an end-to-end vision form raw material development to final part qualification and characterization via process optimization. All aspects related to the latest developments in AM from specific material development (polymers, resin, metals, ceramics, composites, etc.) to the latest advances in processing shall be covered.

Topics of interest, as they relate to advanced manufacturing processes, include, but are not limited to:

- Raw material characterization and effect on the process robustness
- New material development
- Relationships between process parameters and final part properties (microstructure, mechanical properties…)
- Standardization and final part qualification strategy
- Development of advanced machine concepts (automation, multiple materials printing, large scale printing, hybrid technologies, etc.)
- Design rules for AM and topological/multi physic optimization
- Modelling and simulation applied to process and design (multi-functionality)
- Final post treatment (surface finishing, heat treatment, support removal, etc.)
- 4D printing
- AM for remote location production (on demand manufacturing)
- AM and multi-functionality
- NDT and on-line process monitoring
- Health safety in AM
- Life Cycle Assesment