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Area C

Symposium C.2

Title: Additive Manufacturing 2: Indirect/sinter-based techniques

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Abstract

There is a growing interest in indirect/sinter-based techniques of Additive Manufacturing (AM), as they show several advantages compared to beam-based AM technologies. For example, internal stresses are lower and hence even brittle materials can be processed as no melting and rapid cooling is taking place. However, apart from the great opportunities, the control of the sintering process as well as the various printing processes presents several challenges for the user. This symposium aims to tackle all aspects related to those opportunities and challenges, including material development topics in the field of metals and ceramics, process optimization and monitoring, and final part qualification. The processes which are addressed include powder-bed based processes like Binder Jetting, material extrusion based processes like Fused Filament Fabrication, slurry-based processes like 3D-screen-printing or photopolymerisation techniques, and several more where the material is consolidated by a subsequent sintering step.

Topics of interest, as they relate to the mentioned indirect/sinter-based AM technologies, include, but are not limited to:

- Raw material characterization (powder/organic components) and effect on processing and final properties
- Relationship between process parameters and final properties (printing/debinding/sintering step)
- Process monitoring, standardization and green/final part qualification
- New material development
- Development of advanced machine/processing concepts (automation, multiple materials, etc.)
- Auxiliary and post treatment processes (depowdering, surface finishing, etc.)
- Design rules for printing and sintering process
- Modelling and simulation applied to process and design