



# ASTM INTERNATIONAL CONFERENCE ON ADVANCED MANUFACTURING

Research to Application through Standardization

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## Sinter-Based AM Technologies

Interest in sinter-based additive manufacturing (SBAM) processes continues to grow rapidly with the promise of enabling new applications while significantly reducing production costs. Sinter-based AM processes now include Binder Jetting (BJT), Material Extrusion (MEX), Material Jetting (MJT), and Vat Photopolymerization (VPP) technologies. There is also the emergence of several new Sinter-based AM technologies such as hybrid processes that rely on both additive and subtractive processes, 3D Screen printing, and 3D printing of multi-materials. Unique to these sinter-based processes, the powder material is selectively bound together with a binding agent during the printing process (commonly referred to as a “green” or “brown” part). Secondary debinding and sintering steps are then required to remove the binding agent and consolidate the powder material to the desired final part density. While the potential of these new technologies is high, there are many challenges involved in these processes.

### Topics of interest include but are not limited to:

- Novel Sinter-based AM technology developments
- Feedstock, ink and printing process developments
- Debinding and sintering
- Microstructure and mechanical properties of sinter-based AM materials
- Powder handling, conditioning, and reuse considerations
- Part design considerations
- Challenges in the sinter-based AM process value stream
- Dimensional control and surface roughness
- Process modeling and optimization
- Opportunities and economics of sinter-based processes
- Progress and gaps in materials and process standards and specifications
- Qualification and certification of sinter-based AM machines, processes, parts
- In-process monitoring and control
- Safety considerations
- Environmental impact



## Symposium Organizers

- Animesh Bose, Desktop Metal, USA
- Efrain Carreno-Morelli, University of Applied Sciences and Arts Western Switzerland (HES-SO), Switzerland
- Amy Elliot, Oak Ridge National Laboratory (ORNL), USA
- Simon Hoeges, GKN Additive, Germany
- Benoit Verquin, CETIM, France



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