# SFF 2022 Addendum

Changes through 3:00 pm on Thursday, July 21.

## New Poster Presentations

**The Third Eye: A Modified Schlieren System for In-Situ Voxel Growth Observation in Projection-based Stereolithography 3D Printing**: Aditya Chivate[1], Chi Zhou[1]; [1]University of Buffalo

**Dual-step Sintering of Cu Nanoparticles with Femtosecond Laser**: Janghan Park[1], Yaguo Wang[1,2]; [1]University of Texas at Austin, [2]Texas Materials Institute.

**Enhancing Fringe Projection Profilometry for in-situ Monitoring of LPBF Additive Manufacturing**: Haolin Zhang[1], Chaitanya Krishna Prasad Vallabh[1], Xiayun Zhao[1],[1]University of Pittsburgh

## Cancellations

Monday at 1:30 pm, the presentation: **Effects of Feeding Rates on the Microstructure of SS 316L Fabricated via Directed Energy Deposition with Coaxial Wire-Powder Feeding** by Yue Zhou, Binghamton University, is cancelled.

Monday at 1:30 pm, the presentation: **Towards Regulation of Build Height in a Directed Energy Deposition Additive Manufacturing using Adaptive Iterative Learning Control** by Dustin Seltzer, Penn State University, is cancelled.

Monday at 1:30 pm, the presentation: **The Next Step with Additive Manufacturing of Steel and Iron Alloys by Rajat Gulabrao Kawalkar**, Uppsala University, is cancelled.

Monday at 2:10 pm, the presentation: **Scalable Part Qualification for Powder Bed Additive Manufacturing** by Luke Scime, Oak Ridge National Laboratory, is cancelled.

Monday at 2:30 pm, the presentation: **Slender Energy Density for Improved Process Mapping with Lightweight Features Fabricated by Powder Bed Fusion** by Naresh Koju, University of Louisville, is cancelled.

Monday at 2:30 pm, the presentation: **Melt Pool Modelling of the LPBF-AM Process: A Comparison of Thermal Semi-analytic and Numerical Multi-phases Approaches** by Jordan Rosser, Swansea University, is cancelled.

Monday at 4:00 pm, the presentation: **Local Modification of Composition and Hardness in Stainless Steel by Hybrid Inkjet-Laser Additive Manufacturing** by Bethany Lettiere, Massachusetts Institute of Technology, is cancelled.

Monday at 4:40 pm, the presentation: **Characterization of Thermophysical Properties for Additively Manufactured Porous Media** by Alden Packer, Penn State University, is cancelled.

---

Tuesday at 8:35 am, the presentation: **3D Printing Diffractive Axicons and Zone Plates** by Junyu Hua, Purdue University, is cancelled.

Tuesday at 8:35 am, the presentation: **Qualification of Low-criticality AM Components in an Expeditionary Environment** by Jacob Aljundi, Naval Surface Warfare Center Carderock Division, is cancelled.

Tuesday at 8:55 am, the presentation: **Validation of Ensemble Kalman Filter Estimations of Internal Temperature Fields During the Powder Bed Fusion Process** by Nathaniel Wood, Ohio State University, is cancelled.

Tuesday at 11:05 am, the presentation: **In-situ Characterization of Laser-Material Interaction Dynamics in Ring-shaped Beam Laser Powder Bed Fusion** by Jiandong Yuan, University of Wisconsin-Madison, is cancelled.

Tuesday at 11:05 am, the presentation: **Defect Lean Metal Additive Manufacturing** by Lianyi Chen, University of Wisconsin-Madison, is cancelled.

Tuesday at 1:40 pm, the presentation: **A Pore-elimination Approach for Manufacturing Pore-free Feedstock Powders** by Ali Nabaa, UW-Madison, is cancelled.

Tuesday at 3:00 pm, the presentation: **Photothermal Bleaching of Nickel Dithiolene for Bright Multi-colored 3D-printed Parts** by Kyle Wycoff, , is cancelled.

Tuesday at 3:40 pm, the presentation: **Validation of Simulation Based Predictions of Recoater Interference in Laser Powder Bed Fusion** by Chao Li, Autodesk Inc., is cancelled.

Tuesday at 4:00 pm, the poster presentation: **Support Free Directed Energy Deposition** by William Dong, University of Wisconsin-Madison, is cancelled.

Wednesday at 9:00 am, the presentation: **Hybrid AM Toolpath Planning via Signed Distance Functions** by Sam Pratt, Virginia Tech, is cancelled.

Wednesday at 10:10 am, the presentation: **Integration of Plasma-Arc Directed Energy Deposition (PA-DED) system to drive higher fidelity Large Scale Additive Manufacturing of Metals (LSAMM)** by James McNeil, EWI, is cancelled.

Wednesday at 10:30 am, the presentation: **Enhancing Aircraft Acoustic Liner Performance with Lattices and Cellular Structures** by Andrew Swanson, Pennsylvania State University, is cancelled.

Wednesday at 10:50 am, the presentation: **Carbon Nanotube-induced Crystallinity in PEEK Nanocomposite Filaments for Additive Manufacturing** by Amir Asadi, Texas A&M University, is cancelled.

Wednesday at 11:10 am, the presentation: **Use of a Static Mixing Nozzle to Homogenize Material in Large-Format Extrusion Additive Manufacturing** by James Brackett, University of Tennessee - Knoxville, is cancelled.

Wednesday at 2:10 pm, the presentation: **A Study on the Effect of Heating on the Ceramic Suspension for Maximizing the Solid Loading in the Vat Polymerization Process** by Seungjae Han, Chung-Ang University, is cancelled.

Wednesday at 2:30 pm, the presentation: **Multiplexed 3D Printing of Thermoplastics** by Jeremy Cleeman, Rutgers University, is cancelled.

Wednesday at 3:20 pm, the presentation: **Effects of Varied Support Structure Strategies on the Melt Pool Temperature and Mechanical Properties of SS316L in Laser Powder Bed Fusion** by William Young, Mississippi State University, is cancelled.

Wednesday at 4:20 pm, the presentation: **Transient Nature of the Raster Scan Areas in the Laser Powder Bed Fusion Process** by Santosh Rauniyar, University of Louisville, is cancelled.

---

# Schedule Changes

## Date change:

*Originally scheduled for Tuesday at 1:40 pm; now scheduled for Monday at 5:00 pm:* **3D Printing of Nanoporous Metals via Fused Filament Fabrication: Rheological Considerations**: Bruno Azeredo, Arizona State University

## Time changes:

Monday in the Physical Modeling - Melt Pool and Microstructure session at 1:50 pm (was 1:30 pm): **A Data-driven Model for Reconstructing 3D Melt Pool Geometries in Additive Manufacturing** by Shuheng Liao, Northwestern University

Monday in the Applications: Lattices and Cellular - Fabrication and Testing session at 1:50 pm (was 1:30 pm): **Digital Image Correlation of Architected Materials: Challenges, Lessons Learned and Opportunities** by Irving E. Ramirez-Chavez, Arizona State University

Monday in the Physical Modeling - Melt Pool and Microstructure session at 2:10 pm (was 1:50 pm): **A Computational Study Summarizing the Effects of Composition on the Melt Pool Geometry in Additive Manufacturing** by Nandana Menon, Pennsylvania State University

Monday in the Applications: Lattices and Cellular - Fabrication and Testing session at 2:10 pm (was 1:50 pm): **Insight into Compressive Behaviour of Schwarz-P Lattices Fabricated by Material Extrusion** by Ajit Panesar, Imperial College London

Monday in the Applications: Lattices and Cellular - Fabrication and Testing session at 2:30 pm (was 2:10 pm): **Beam Deletion in Square Honeycombs for Improved Energy Absorption Under Quasi-static In-Plane Compression** by Irving E Ramirez-Chavez, Arizona State University

Monday in the Physical Modeling - Melt Pool and Microstructure session at 2:30 pm (was 2:10 pm): **High-fidelity Modeling of Multi-material Additive Manufacturing: From Micro-/Nano-particle Reinforced Composites to In-situ Alloying** by Wentao Yan, National University of Singapore

Monday in the Special Session: Data Analytics I - High-Dimensional Data Analytics session at 2:10 pm (was 2:30 pm): **Data-driven Approach for Printability Evaluation for Additively Manufactured Metal Alloys** by Sofia Sheikh, Texas A&M University

Monday in the Applications: Lattices and Cellular - Fabrication and Testing session at 2:50 pm (was 2:30 pm): **The Effects of Powder Feedstock and Process Parameters on the Material Characteristics of Ti6Al4V Thin Strut Features Fabricated by Laser Powder Bed Fusion Additive Manufacturing** by Naresh Koju, University of Louisville

Monday in the Special Session: Data Analytics I - High-Dimensional Data Analytics session at 2:30 pm (was 2:50 pm): **Evaluating the Effects of Geometry and Process Parameters in L-PBF using a High-Throughput CT Scanning Approach Within a Connected Machine, Monitoring, Geometry Data Framework** by Fred Carter, Northwestern University

Monday in the Materials: Metals - 316L Stainless Steel session at 4:00 pm (was 3:40 pm): **Investigating the Effects of Infiltration Conditions on the Microstructure and Mechanical Properties of Binder Jet Fabricated Stainless Steel/Bronze through Ultrasonic Testing** by Nancy Huang, Pennsylvania State University

Monday in the Materials: Composites - Novel Materials and Processes session at 5:00 PM: **3D Printing of Nanoporous Metals via Fused Filament Fabrication: Rheological Considerations** by Amm Hasib, Arizona State University

---

Tuesday in the Process Development - Novel Methods and Processes I session at 8:35 am (was 8:15 am): **From Neutron Diffraction to Tool Repair: How Fundamental Scientific Research Translates to Industrial Impact for Hybrid AM Processes** by Brian Post, Oak Ridge National Laboratory

Tuesday in the Process Development - Novel Methods and Processes I session at 8:55 am (was 8:35 am): **Evaluating Concepts for the Integration of Milled Components into the Additive Manufacturing Process** by Jannik Reichwein, Technical University Darmstadt

Tuesday in the Process Development – Deposition Processes session at 12:25 pm (was 9:35 am): **Fundamental Study of Aerosol Jet® Printing by Means of Phase Doppler Anemometry**: Akash Verma[1], Miriam Seiti[1], Maria Rosaria Vetrano[1], Eleonora Ferraris[1];, [1]KU Leuven

Tuesday in the Process Development - Emerging Techniques session at 10:45 am (was 10:25 am): **Bioinspired Smart Nanocomposite Fabrication via Liquid Crystal Templating-assisted 3D Printing** by Tengteng Tang, Arizona State University

Tuesday in the Materials: Metals - Porosity and Processing session at 10:45 am (was 10:25 am): **Nondestructive Ultrasound Evaluation of Additively Manufactured Wear Coatings** by Ziyad Smoqi, University of Nebraska-Lincoln

Tuesday in the Materials: Metals - Porosity and Processing session at 11:05 am (was 10:45 am): **Effects of Recoating Velocity and Layer Thickness on the Powder-bed Surface Roughness in the Laser Powder Bed Fusion (LPBF) Process** by M. Hossein Sehhat, Missouri University of Science and Technology

Tuesday in the Process Development - Emerging Techniques session at 11:05 am (was 10:45 am): **Spatial Variations in Horizontal and Vertical Composition Grading using Laser Powder Bed Fusion** by Joy Gockel, Colorado School of Mines

Tuesday in the Materials: Novel Materials session at 3:00 pm (was 3:20 pm): **Influence of Powder Properties and Process Parameters on the High Temperature PBF-LB/M Manufacturability of Filigree Tungsten Components** by Maximilian Binder, Fraunhofer IGCV

---

Wednesday in the Modeling - Process Planning and Scanning Strategies session at 8:20 am (was 8:00 am): **Toolpath Planning for Multiple Build Points using K-Means Clustering by Breanne Crockett**, Oak Ridge National Laboratory

Wednesday in the Modeling - Process Planning and Scanning Strategies session at 8:40 am (was 8:20 am): **Intelligent Scan Sequence Generation for Reduced Hot Spots, Residual Stress and Distortion in Multi-laser PBF** by Chinedum Okwudire, University of Michigan

Wednesday in the Modeling - Process Planning and Scanning Strategies session at 9:00 am (was 8:40 am): **Automated Path Planning for Wire Feeding in Large Format Polymer Additive Manufacturing** by Michael Borish, Oak Ridge National Laboratory

Wednesday in the Materials: Composites - Polymer-Based Composites session at 10:30 am (was 10:10 am): **Effect of Z-Pin Geometric Parameters on Mechanical Properties of Z-Pinned Additively Manufacturing Composites** by Deepak Kumar Pokkalla, Oak Ridge National Laboratory

Wednesday in the Applications: Lattices and Cellular - Lattice Structure Design session at 10:30 am (was 10:10 am): **Utilizing Lattice Infill Structures to Optimize Weight with Structural Integrity Investigation for Commonly Used 3D Printing Technologies** by Mohammad Alshaikh Ali, Tennessee Tech University

Wednesday in the Materials: Composites - Polymer-Based Composites session at 10:50 am (was 10:30 am): **Fatigue Analysis of Short Carbon Fiber Reinforced Composite Components Manufactured using Fiber-Reinforced Additive Manufacturing** by Mithila Rajeshirke, Tennessee Tech University

Wednesday in the Process Development - Large-scale Processing session at 11:10 am (was 11:30 am): **Swarm Manufacturing of a Robotic Vehicle** by Rencheng Wu, University of Arkansas

Wednesday in the Physical Modeling - Part-Scale Modeling session at 4:20 pm (was 4:40 pm): **Layerwise Thermal Process Simulation for Laser Powder Bed Fusion: Calibration and Validation with Infrared Camera** by Shawn Hinnebusch, University of Pittsburgh

---

## Speaker Changes

Tuesday at 9:15 am in the Applications – Metals session: The presentation, **Laser Powder Bed Fusion Additive Manufacturing of Wicking Structures for Heat Pipes: Design, Fabrication, and Application**, will be given by Alexander Belchou, Pennsylvania State University.

Tuesday at 3:20 pm in the Special Session: Binder Jet AM III - Part Densification and Strengthening session: The presentation, **From Porous to Solid and Back: Densification of Binder Jet 3D Printed Materials**, will be given by Aaron Acierno, University of Pittsburgh

Tuesday at 3:30 pm in the Materials: Metals - Powder and Processes session: The presentation, Additively Manufactured Mesoscale Composites, will be given by Chris Ledford, Oak Ridge National Lab.

Wednesday at 9:20 am in the Process Development (Focus on the fabricator: hardware, monitoring, controls, novel processes) session: The presentation, **High-power Microwave Irradiation for Localized Curing of Opaque Polymer Composites**, will be given by Johanna Schwartz, Lawrence Livermore National Laboratory

Wednesday at 2:10 pm in the Materials: Metals - Ferrous Metals including 17-4PH session: The presentation, **A Process Optimization Framework for Direct Energy Deposition: Densification, Microstructure, and Mechanical Properties of an Iron-chromium Alloy**, will now be given by Ibrahim Karaman, Texas A&M University

Wednesday at 4:00 pm in the Modeling: Physical (Thermal, materials, microstructure, etc.) session: The presentation, **Investigating the Influence of Thermal and Mechanical Properties of Resin on the Sedimentation Rate of Components Produced by Volumetric Additive Manufacturing** will be given by Jon Spangenberg, Technical University of Denmark

---

## Session Chair Corrections

- Special Session: Wire-Fed DED I – Materials Properties: Sneha Narra
- Special Session: Wire-Fed DED II - Controls and Modeling: Bishal Silwal
- Special Session: Wire-Fed DED III - Systems and Processes: Andrzej Nycz