Agenda

DOE-NE Advanced Materials and Manufacturing Technologies (AMMT) Program
AMMT Program Review Meeting
(TEAMS Meeting)
May 18 – 19, 2022

Day 1: Wednesday, May 18, 2022, 11:00 am – 5:00 pm (EDT)

11:00 am – 11:15 am	Welcome and Introductions	Dirk Cairns-Gallimore, DOE Federal Manager
11:15 am – 12:00 pm	AMMT Program Overview	Meimei Li (ANL), NTD
Session 1 – Andrea Jokisaari (INL)		
12:00 pm – 12:25 pm	Material Identification and Prioritization	Isabella van Rooyen, Thomas Hartman, Mageshwari Komarasamy (PNNL)
12:25 pm – 1:10 pm	Performance of AM 316 SS for Structural Applications: • Microstructure and Mechanical Performance • Radiation Behavior	Ryan Dehoff, TS Byun (ORNL), Bogdan Alexandreanu (ANL)
1:10 pm – 1:20 pm	Break	
1:20 pm – 1:45 pm	Printed SiC for Nuclear Applications	Andy Nelson (ORNL)
1:45 pm – 2:10 pm	AM for Strategic Sensor Integration and in situ Monitoring	Chris Petrie (ORNL)
2:10 pm – 2:40 pm	Break	
Session 2 – Ryan Dehoff (ORNL)		
2:40 pm – 3:25 pm	Digital Thread for Additive Manufacturing	Vincent Paquit (ORNL)
3:25 pm – 3:50 pm	Standardized Irradiation Testing and Multi-Modal Characterization for Advanced Nuclear Materials	Boone Beausoleil (INL)
3:50 pm – 4:00 pm	Break	
4:00 pm – 4:25 pm	Developments in Physics-Based Modeling and Machine Learning for Environmental Effects in Nuclear Materials	Andrea Jokisaari (INL)
4:25 pm – 4:35 pm	AM Demonstration Projects	Ryan Dehoff (ORNL)
4:35 pm – 5:00 pm	Stakeholder Collaboration and Qualification Methodologies	Isabella van Rooyen (PNNL)
5:00 pm	Wrap-up and Adjourn	

Day 2: Thursday, May 19, 2022, 11:00 am – 5:00 pm (EDT)

Session 3 – Isabella Van Rooyen (PNNL)		
11:00 am – 11:05 am	Introduction	Isabella Van Rooyen
11:05 am – 11:30 am	Development of Low Temperature Powder Spray Process for Manufacturing Fuel Cladding and Surface Modification of Reactor Components	Kumar Sridharan (U Wisconsin)
11:30 am – 11:55 pm	Machine Learning on High-Throughput Databases of Irradiation Response and Corrosion Properties of Selected Compositionally Complex Alloys for Structural Nuclear Materials	Dane Morgan (U Wisconsin)
11:55 am – 12:20 pm	Laser Additive Manufacturing of Grade 91 Steel for Affordable Nuclear Reactor Components	Stu Maloy (PNNL)
12:20 pm – 12:30 pm	Break	
12:30 pm – 12:55 pm	HIP Cladding and Joining to Manufacture Large Dissimilar Metal Structures for Modular and GEN IV Reactors	Xiaoyuan Lou (Auburn U)
12:55 pm – 1:20 pm	Pulsed Thermal Tomography Nondestructive Examination of Additively Manufactured Reactor Materials and Components	Alexander Heifetz (ANL)
1:20 pm – 1:45 pm	Real time Non-destructive Evaluation during 3D Manufacturing of Metal Parts	Araz Yacoubian (LER Technologies)
1:45 pm – 2:15 pm	Break	
Session 4 –David Andersson (LANL)		
2:15 pm – 2:40 pm	Reinforcement Learning Validation Framework for Quality Assurance of AI-guided Additive Manufacturing Digital Platforms	Anant Raj (Purdue U)
2:40 pm – 3:05 pm	Integrating Dissolvable Supports, Topology Optimization, and Microstructure Design to Drastically Reduce Costs in Developing and Post-Processing Nuclear Plant Components Produced by Laser-based Powder Bed Additive Manufacturing	Albert To (U Pittsburgh)
3:05 pm – 3:30 pm	Establishing Modular In-Chamber Electron Beam Welding Capability in the USA/SMR Reactor Pressure Vessel Manufacturing & Fabrication Technology Development	David Gandy, Marc Albert (EPRI)
3:30 pm – 3:40 pm	Break	
3:40 pm – 4:05 pm	Fiber Sensor Fused Additive Manufacturing for Smart Component Fabrication for Nuclear Energy	Kevin P. Chen (U Pittsburgh)
4:05 pm – 4:30 pm	Additive manufacturing of BWR Lower Tie Plates	Lauren Perhala Gramlich (NovaTech)
4:30 pm – 4:55 pm	Mechanical Testing of Neutron Irradiated Additively Manufactured Stainless Steel 316L, Inconel 625, and Inconel 718	Mark Graham (Colorado School of Mines)
4:55 pm	Wrap-up and Adjourn	