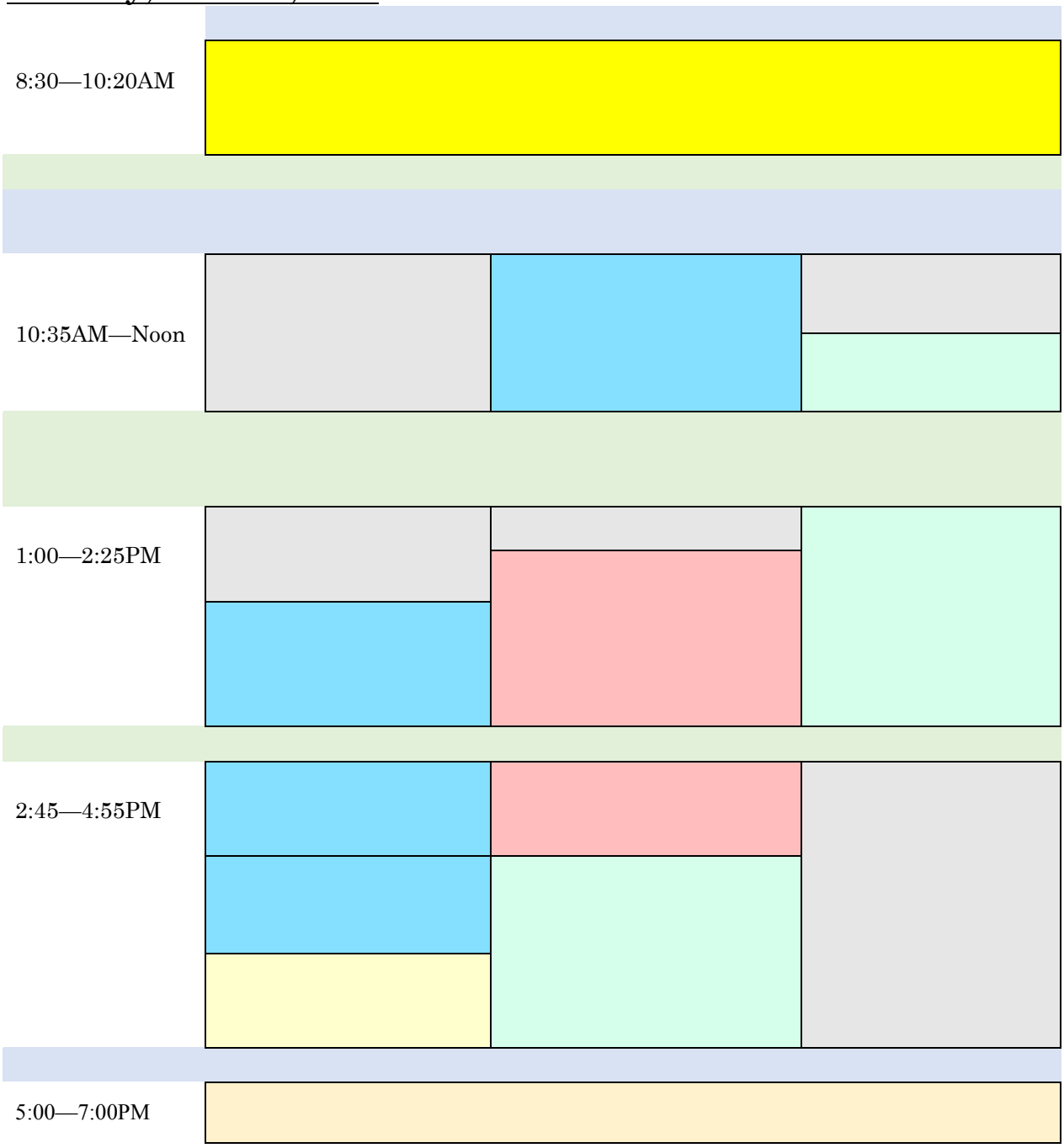
2019 Advanced Manufacturing Office
Peer Review Program-at-a-Glance
June 11-12, 2019

DoubleTree Crystal City
300 Army Navy Drive
Arlington, VA 22203
Phone: (703) 416-4100

Agenda Color Scheme

- = Additive Manufacturing
- = Smart Manufacturing and Cybersecurity
- = Process Innovations
- = Electric Machines
- = Advanced Materials

Tuesday, June 11, 2019



Wednesday, June 12, 2019

	CRYSTAL BALLROOM A	CRYSTAL BALLROOM B	WASHINGTON ROOM
8:30—10:00AM	Roll to Roll Manufacturing	Process Heating Advanced Materials Manufacturing	Electric Machines
10:00—10:20AM	**Break**		
10:20—11:45AM	Technical Partnerships	Advanced Materials Manufacturing	Electric Machines Waste Heat Recovery
11:45AM—1:00PM	**Lunch**		
1:00—3:10PM	Clean Energy Manufacturing Institute: RAPID Advanced Materials Manufacturing Clean Energy Manufacturing Institute: IACMI	Electric Machines	Waste Heat Recovery Workforce Development Process Intensification
3:10—3:30PM	**Break**		
3:30—5:00PM	Composites Electric Machines	Smart Manufacturing and Cybersecurity	Process Intensification

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Peer Review
Final Agenda
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Plenary Session: Crystal Ballroom

Day 1 (Tuesday, June 11)		
8:30AM	Welcome	**Bob Gemmer/Valri Lightner** AMO
8:35AM	Invited Presentation Better Plants Partner Story	**Clay Nesler** **VP Global Sustainability and Industry Initiatives** Johnson Controls
9:05AM	AMO Strategic Planning Activities	**Joe Cresko** AMO
9:35	Introduction of Daniel Simmons, Assistant Secretary, EERE	**Valri Lightner** AMO
9:45AM	Remarks	**Daniel Simmons, Assistant Secretary** EERE
10:00AM	AMO Overview	**Valri Lightner** AMO

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Crystal Ballroom A

Day 1 (Tuesday, June 11)		
10:35AM	*Introduction: Materials for Harsh Service Conditions*	**Steve Sikirica,** AMO
10:40AM	Boride-Carbon Hybrid Technology to Produce Ultra-Wear and Corrosion Resistant Surfaces for Applications in Harsh Conditions	**Nina Baule** Fraunhofer USA, Inc.
11:00AM	Ultra-High Temperature Thermal Barrier Coating Development and Validation	**Brent Cottom and Dave Voss** Solar Turbines Inc.
11:20AM	Novel Corrosion and Wear Resistant Coatings Using Innovative Cold Plasma Jet Surface Treatment to Enable Improved Bonding Performance of Dissimilar Material Joints Subject to Harsh Environmental Exposure	**Ivan Shchelkanov** Starfire Industries LLC
11:40AM	Low Cost Ceramic-Matrix Composites for Harsh Environment Heat Exchanger Applications	**Rajiv Ranjan** UTRC
1:00PM	*Introduction: Clean Energy Manufacturing Institutes*	**Mike McKittrick,** AMO
1:05PM	Reducing Embodied Energy and Decreasing Emissions Institute (REMADE)	**Nabil Nasr** SMI Alliance
1:45PM	PowerAmerica WBG Manufacturing Institute	**Victor Veliadis** North Carolina State University
2:45PM	Integrated Electric Drive with HV2 Modular Electric Machine and SiC Based Power Converters	**Longya Xu** Ohio State University
3:05PM	Grid Application Development, Testbed and Analysis for MV SiC (GADTAMS)	**Barry Mather** NREL
3:25PM	*Introduction: Traineeships in Power Electronics*	**Al Hefner,** AMO
3:30PM	DOE Traineeship in WBG Power Electronics Engineering	**Rolando Burgos** Virginia Tech
3:50PM	DOE Traineeship in WBG Power Electronics Engineering	**Leon Tolbert** University of Tennessee
4:15PM	Clean Energy Smart Manufacturing Innovation Institute (CESMII)	**John Dyck** UCLA

Crystal Ballroom A (Continued)

Day 2 (Wednesday, June 12)		
8:30AM	*Introduction: Roll to Roll*	**Brian Valentine,** AMO
8:35AM	Roll to Roll (R2R) Consortium	**Claus Daniel** ORNL
9:20AM	Development of Roll-to-Roll Simultaneous Multilayer Deposition Methods for Solid-state Electrochemical Devices Using Highly Particulate Loaded Aqueous Inks	**Jeff Peet** Saint Gobain
9:40AM	High-Temperature Membrane for In-Situ Process-Water Removal	**Balu Balachandran** ANL
10:20AM	*Introduction: Technical Partnerships*	**Andre DeFontaine,** AMO
10:25AM	AMO Energy System Tools Modernization	**Tom Wenning** ORNL
10:45AM	Technologist in Residence	**Eli Levine,** AMO
11:05AM	Better Plants	**Eli Levine,** AMO
11:25AM	ISO 50001 Portfolio	**Pete Langlois and Paul Scheihing,** AMO
1:00PM	*Introduction: Process Intensification and Clean Energy Manufacturing Institutes*	**Melissa Klembara,** AMO
1:05PM	Rapid Advancement in Process Intensification Deployment Institute (RAPID)	**Bill Grieco** AIChE
1:45PM	Improved Catalyst Selectivity and Longevity Using Atomic Layer Deposition	**Christopher Marshall** ANL
2:05PM	Rational Design Platform for Transition Metal Catalyzed Electrochemical Synthesis	**Juergen Biener** LLNL
2:25PM	*Introduction: Composites*	**Chad Schell,** AMO
2:30PM	Institute for Advanced Composite Manufacturing Innovation (IACMII)	**John Hopkins** CCSC
3:30PM	Energy Efficient Thermoplastic Composite Manufacturing	**Marc Matsen** Boeing
3:50PM	Carbon Fiber Test Facility	**Merlin Theodore** ORNL
4:10PM	Amorphous and Nanocomposite Magnets for High Efficiency, High Speed Motor Designs	**Michael McHenry** Carnegie Mellon University
4:30PM	High-Silicon Steel Strip by Single-Step Shear Deformation Processing	**Kevin Trumble** Purdue University

Crystal Ballroom B

Day 1 (Tuesday, June 11)		
10:35AM	*Introduction: Power Electronics*	**Al Hefner,** AMO
10:40AM	Medium Voltage Integrated Drive and Motor	**Suratkal Shenoy and Octavio Solis** Calnetix Technologies, LLC
11:00AM	Fully Integrated High Speed Megawatt Class Motor and High Frequency Variable Speed Drive	**J. Curtiss Fox** Clemson University
11:20AM	Integrated 10kV SiC VSD and High-Speed MW Motor for Gas Compression Systems	**Geraldo Nojima** Eaton Corporation
11:40AM	SiC Enabled High-Frequency Medium Voltage Drive for High-Speed Motors	**Ravi Raju** General Electric
Noon	LUNCH	
1:00PM	*Introduction: Critical Materials and Additive Manufacturing*	**Blake Marshall,** AMO
1:05PM	Science-Based Acceleration of the Full Value Stream for Metal Additive Manufacturing: Expedited Powder Development and Additive Manufacturing Deployment	**Emma White** Ames Laboratory
1:25PM	Advanced Manufacturing of Alpha Double Prime Iron Nitride (ADPIN): An Innovative Rare Earth Element (REE) Free Ultra-High Performance Permanent Magnet for Clean Energy Applications	**David Matthiesen** FeNix Magnetics, Inc.
1:45PM	Infrastructure Scale Additive Manufacturing	**Brian Post** ORNL
2:05PM	Full Scale Engine Demonstration of Additively Manufactured High Gamma Prime Turbine Blades	**Ryan Dehoff** ORNL
2:25PM	BREAK	
2:45PM	Manufacturing Demonstration Facility	**Bill Peter** ORNL
3:30PM	Advanced Turbine Airfoils for Efficient CHP Systems	**Doug Straub** NETL
3:50PM	Development of Improved Combined Heat and Power (CHP) Systems utilizing Thermodynamic Modeling and Additive Manufacturing (AM) Components	**Anand Kulkarni** Siemens
4:15PM	Organic Rankine Cycle Integration and Optimization for High Efficiency CHP Genset Systems	**John Fox** ElectraTherm Inc.
4:35PM	Modifications to Solar Titan 130 Combustion System for Efficient, High Turndown Operation	**Jacob Delimont** Southwest Research Institute
4:55PM	END OF TRACK – Poster Session to begin at 5:00PM in the Lincoln Ballroom	

Crystal Ballroom B (Continued)

Day 2 (Wednesday, June 12)		
8:30AM	*Introduction: Process Heating*	**Joe Cresko,** AMO
8:35AM	A Direct Process for Wire Production from Sulfide Concentrates	**Antoine Allanore** MIT
8:55AM	Low-temperature Electrochemical Activation of Ethane for Co-production of Chemicals/Fuels and Hydrogen	**Dong Ding** INL
9:15AM	*Introduction: Advanced Materials Manufacturing*	**Bob Gemmer and Tina Kaarsberg,** AMO
9:20AM	High Performance Computing for Manufacturing (HPC4Mfg)	**Robin Miles** LLNL
9:40AM	The Radical Atom: Mechanosynthetic 3D Printing of an Atomically Precise SPM Tip	**Adam Stieg** UCLA
10:20AM	Atomically Precise Manufacturing for 2D-Designed Materials	**James Owen** Zyvex Labs, LLC
10:40AM	A Platform Technology for High-throughput Atomically Precise Manufacturing: Mechatronics at the Atomic Scale	**Reza Moheimani** UT Dallas
11:00AM	DNA Strand Displacement driven Molecular Additive Manufacturing (DSD-MAM)	**William Shih** Dana-Farber Cancer Institute
11:20AM	Developing Nanometer Scale, Atomically Precise Metallo-Catalysts with Molecular Lego	**Christian Schafmeister** Temple University
1:00PM	Carbon Conductors for Lightweight Motors and Generators	**Matteo Pasquali** Rice University
1:20PM	Nanometal-Interconnected Carbon Conductors for Advanced Electric Machines	**Cory Cress** U.S. Naval Research Laboratory
1:40PM	Polydopamine/PTFE Composite Coating for Large-Scale Journal Bearings in Next Generation Electric Machines	**Samuel Beckford** Surftec
2:05PM	Advanced Manufacturing of High Performance Superconductor Wires for Next Generation Electric Machines	**Venkat Selvamanickam** University of Houston
2:30PM	Processes for 2G HTS Wire Manufacturing	**Ken Pfeiffer** Superconductor Technologies Inc.
2:50PM	Enhanced 2G HTS Wire for Electric Motor Applications	**Martin Rupich** American Superconductor
3:30PM	*Introduction: Smart Manufacturing & Cybersecurity*	**Sudarsan Rachuri,** AMO
3:35PM	An open-source framework for the computational analysis and design of autothermal chemical processes	**Shankar Subramaniam** Iowa State University
3:55PM	Industrial Base Cybersecurity Initiative	**Rich Taylor** LANL
4:15PM	Traineeship: Enhanced Preparation for Intelligent Cybermanufacturing Systems	**Christopher Saldana** Georgia Tech

Washington Room

Day 1 (Tuesday, June 11)		
10:35AM	*Introduction: Consortia*	**Mike McKittrick,** AMO
10:40AM	Critical Materials Institute	**Chris Haase** CMI
11:20AM	Combined Heat and Power (CHP) Deployment	**Tarla Toomer**, AMO **Bruce Hedman**, CHP Deployment Program
11:40AM	CHP Technical Assistance Partnerships (TAPs)	**Isaac Panzarella**, Director Southeast CHP TAP **Patti Garland**, CHP TAP Coordinator
Noon	LUNCH	
1:00PM	*Introduction: CHP R&D*	**Bob Gemmer,** AMO
1:05PM	Converter-Interfaced CHP Plant for Improved Grid-Integration, Flexibility, and Resiliency	**Ibrahima Ndiaye** GE Global Research
1:25PM	High Speed Medium Voltage CHP System with Advanced Grid Support	**J. Curtiss Fox** Clemson University
1:45PM	SiC Based Modular Transformer-less MW-Scale Power Conditioning System and Control for Flexible CHP System	**Shiqi Ji** University of Tennessee
2:05PM	High-Efficiency Modular SiC-based Power-Converter for Flexible-CHP Systems with Stability-Enhanced Grid-Support Functions	**Rolando Burgos** Virginia Tech
2:25PM	BREAK	
2:45PM	*Introduction: Advanced Materials Manufacturing*	**Steve Sikirica,** AMO
2:50PM	Lifetime Energy Savings Via Advanced Manufacturing of Low Density Steels for Transportation Applications	**Kelcey Garza** AK Steel Corporation
3:10PM	Carbon-Free Iron for a Sustainable Future	**Richard Bradshaw** Boston Metal
3:30PM	Flash® Processed Steel for Automotive Applications	**Gary Cola** SFP Works (Flash Steelworks, Inc.)
3:55PM	Aggregation and Structuring of Materials and Chemicals Data from Diverse Sources	**Chris Tassone** SLAC
4:15PM	High Performance Electrical and Thermal Conductors	**Balu Balachandran** ANL
4:35PM	Fabrication of Advanced Nanocarbon-Metal Composites for Improved Energy Efficiency	**Lourdes Salamanca-Riba** University of Maryland
4:55PM	END OF TRACK – Poster Session to begin at 5:00PM in the Lincoln Ballroom	

Washington Room (Continued)

Day 2 (Wednesday, June 12)		
8:30AM	*Introduction: Electric Machines*	**Steve Sikirica,** AMO
8:35AM	Motor System Market Assessment	**Paul Sheaffer** LBNL
8:55AM	Highly Efficient Conical Air Gap Axial Motor Using Soft Magnetic Composites and Grain-Oriented Electrical Steel	**Paul Knauer and Alan Crapo** Regal-Beloit Corporation
9:20AM	Metal (Cu, Al) CNT Composite Wires for Energy Efficient Motors	**Quanfang Chen** University of Central Florida
9:40AM	Cost-effective Conductor, Cable, and Coils for High Field Rotating Electric Machines	**Lance Cooley** Florida State University
10:20AM	Si-Al-Cr-Mn Alloy for High Specific Resistivity	**Erik Pavlina** AK Steel Corporation
10:40AM	Designing New Economical and Scalable High Performance Aluminum Alloys for Overhead Electric Transmission Conductors	**Nhon Vo** NanoAL
11:00AM	*Introduction: Waste Heat Recovery*	**Bob Gemmer and Brian Valentine,** AMO
11:05AM	Turbocompression Cooling System for Ultra Low Temperature Waste Heat Recovery	**Todd Bandhauer** Colorado State University
11:25AM	Roll-to-Roll Manufactured Hybrid Metal-Polymer Heat Exchangers with Anti-Fouling and Self-Monitoring for Waste Heat Recovery	**Sanjiv Sinha** University of Illinois
1:00PM	High Efficiency Waste Heat Harvesting Using Novel Thermal Oscillators	**Michael Loewenberg** University of Pennsylvania
1:20PM	Simulation Based Design and Optimization of Waste Heat Recovery Systems	**Kyle Benne**, NREL **Michael Wetter**, LBNL
1:40PM	*Introduction: Workforce Development/Technical Partnerships*	**John Smegal,** AMO
1:45PM	Traineeship: Advanced Manufacturing for Energy Systems	**Ugur Pasagullari** University of Connecticut
2:05PM	Industrial Assessment Centers	**Bhaskaran Gopalakrishnan** West Virginia University
2:25PM	*Introduction: Process Intensification*	**Dickson Ozokwelu,** AMO
2:30PM	Development of Oxy-Esterification for Natural Gas Upgrading at the Wellhead	**Zili Wu** ORNL
2:50PM	Advanced Catalysts for Low Temperature Heavy Crude Upgrading	**Jay Gaillard** SRNL
3:30PM	Dynamics at the Interface for Advancing Efficient Manufacturing: Developing New Methods to Understand Catalysts for Ethylene Production	**Rebecca Fushimi** INL
3:50PM	Integrated Hydrogen Combustion with Energy-Efficient Ethylene Production	**Elena Chung** EcoCatalytic Technologies
4:10PM	Low-Pressure Electrolytic Ammonia Production	**Ted Aulich** EERC

Peer Review – Poster Session
Tuesday, June 11, 5 – 7PM

Lincoln Ballroom

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1	Composites	Innovative High-Feed Rate Additive Manufacturing Using Sustainable Nano- Micro- Cellulose-Reinforced Thermoplastic Composites	Soydan Ozcan Bill Peter
2	High Performance Computing for Manufacturing	Development and Validation of Simulation Capability for the High Capacity Production of Carbon Fiber	Srdjan Simunovic
3	Advanced Materials Manufacturing	Melt Processing of Covetic Materials	Paul Jablonski
4	Advanced Materials Manufacturing	SBIR: In-Line Quality and Process Control in Solar and Fuel Cell Manufacturing	Sergei Ostapenko
5	Energy/Water	SBIR: Photothermal Solar Cell	Youssef Habib
6	R2R	AMM-R2R - Applied Materials Genome Initiative - From Ideal Materials to Real-World Devices	Vince Battaglia
7	Materials for Harsh Service Conditions	Wear-Resistant Surface Technologies for Low-leakage NG Compressors	Ali Erdemir
8	Analysis	Sustainable Manufacturing - Opportunities, Trends and Technoeconomic Analysis	William Morrow
9*	Analysis	Sustainable Manufacturing – Application and Analysis of Circular Economy Strategies, parts 1 and 2	Nwike Iloeje
10	Workforce Development	Lab Embedded Entrepreneurship Program: Cyclotron Road	Ilan Gur
11	Workforce Development	Lab Embedded Entrepreneurship Program: Chain Reaction Innovation	John Carlisle
12	Workforce Development	Lab Embedded Entrepreneurship Program: Innovation Crossroads	Dan Miller
13	High Performance Computing for Manufacturing	Making Semiconductor Devices Cool Through HPC Ab Initio Simulations	Lin-Wang Wang
14	Additive Manufacturing	Development of a High Throughput Laser System for Soft Magnetic Materials to Revolutionize Motor Technology	Alex Plotkowski
15	Additive Manufacturing	Stabilization of High Energy Lithium-ion Cathodes using Nanocomposite Coatings	Anil Mane
16	Advanced Materials Manufacturing	SBIR: Transition Metal Blocking Microporous Polymer Separators for Energy-Dense and Long-Lived Li-ion Batteries	Peter Frischmann
17	Energy/Water	SBIR: Solar Thermal Assisted Vacuum Freezing Desalination of Seawater at the Triple Point	Fangyu Cao
18	Additive Manufacturing	Accelerating Qualification of Additively Manufactured Metal Parts	Ibo Matthews

19	Additive Manufacturing	Powder Synthesis and Alloy Design for Additive Manufacturing	Iver Anderson
20	Roll to Roll Manufacturing	AMM-R2R - Roll-to-Roll Manufacturing Science and Applications: Accelerate R2R Materials Manufacture for Energy Storage and Generation	Mike Ulsh
21	Roll to Roll Manufacturing	AMM-R2R - Roll-to-Roll Manufacturing Science and Applications: From Ideal Materials to Real-World Devices	Gregory Krumdick
22	High Performance Computing for Manufacturing	Developing High Performance Computing Model of Vapor Transition through Advanced Membranes for Applications in 7AC Liquid Desiccant Air Conditioners	Jason Woods
23	High Performance Computing for Manufacturing	HPC to Enable Next Generation Low Temperature Waste Heat Recovery	Prashant Jain
24*	Analysis	The Implications of Advanced Manufacturing in Connected Economy: Moving Towards a Smart, Sustainable and Productive Economy, parts 1 and 2 (Data Metrics and Smart Manufacturing Case Studies)	Sujit Das
25*	Analysis	Manufacturing Water Use Characteristics and Opportunities for Increased Resilience, parts 1 and 2	James McCall
26	Analysis	AMO Introspective Performance Assessment Methodology with Verification and Validation of R&D Projects	Debbie Sandor
27	Combined Heat and Power/ Technical Partnerships	Integration of Thermal Energy Storage with a Combined Heat and Power System	Dileep Singh
28	Combined Heat and Power/ Technical Partnerships	CHP & the REopt Lite Web Tool	Patricia Garland Kate Anderson
29	Combined Heat and Power/ Technical Partnerships	CHP for Resiliency Accelerator: Critical Infrastructure Planning and Resources Tools	Anne Hampson
30	Combined Heat and Power/ Technical Partnerships	CHP E-Catalog and Accelerator	Bruce Hedman
31	Combined Heat and Power/ Technical Partnerships	CHP IGATE-E Deployment Tool	John Story
32	Analysis	Geospatial Combined Heat and Power Opportunity Consideration for Combined Heat and Power Grid Connection	Samantha Reese
33	Process Intensification	SBIR: Oxygen Separation with Dual Phase Nano-Composite Membrane	Don Karnes
34	Energy/Water	SBIR: Ionic Membrane Based Desalination System	Bamdad Bahar

*Note: 4'x8' posters.