

# ADVANCED MANUFACTURING OFFICE PEER REVIEW JUNE 14-15, 2016



Key Bridge Marriott, Rosslyn, Virginia

## DRAFT AGENDA

Day 1 (June 14) Potomac Salon ABC				
8:00 – 8:45 am	Peer Reviewer Briefing Breakfast Mark Johnson, Isaac Chan, Valri Lightner, and Jay Wrobel, DOE-AMO			
8:45 – 9:00 am	BREAK			
8:00 – 9:00 am	REGISTRATION FOR ATTENDEES			
9:00 – 9:30 am	Welcome and AMO Overview		Mark Johnson AMO Director	
9:30 – 10:00 am	Overview of the AMO Multiyear Program Plan		Valri Lightner Senior Advisor	
10:00 – 10:30 am	Summary of Technical Assistance Activities		Jay Wrobel Technical Assistance Supervisor	
10:30 – 10:45 am	BREAK			
TRACK A Potomac Salon ABC			TRACK B Potomac Salon D	
Research and Development Projects Review			Analysis Review	
10:45 – 11:25 am	Panel on Covetic Materials	David Forrest DOE-AMO	10:45 – 10:55 am	Overview of AMO Analysis Activities Joe Cresko – DOE/AMO
	High Performance Electrical and Thermal Conductors	Balu Balachandran Argonne NL	10:55 – 11:25	Panel on Advanced Manufacturing Technology Analysis
	Synthesis and Characterization of Covetic Nanomaterial	Xinghua Yu Oak Ridge NL		Joe Cresko – DOE/AMO Alberta Carpenter – NREL William Morrow – LBNL Sachin Nimbalkar - ORNL
11:25 am – 12:00 noon	Melt Processing of Covetic Materials	Paul Jablonski National Energy Technology Lab, Albany, OR	11:25 – 12:00 noon	Panel on Resource Efficiency and Supply Chain/Value Chain  Joe Cresko – DOE/AMO William Morrow – LBNL Sujit Das – ORNI Diane Graziano - ANL
	Panel on HPC4Mfg  Advanced Innovation in Manufacturing	Peg Folta, Lawrence Livermore NL  • Jun Zu, Xerium • Rajeev Pakalapati, Soraa • Peg Folta, LLNL		

## Day 1 (June 14) Continued

### TRACK A Potomac Salon ABC

### TRACK B Potomac Salon D

12:00 – 1:00 pm	LUNCH (Private Lunch for Reviewers)			
Research and Development Projects Review			R&D Facilities Review	
1:00 – 1:20 pm	Wear-Resistant Surface Technologies for Low-Leakage NG Compressors	Argonne National Laboratory	1:00 – 2:00 pm	Critical Materials Institute <b>Rod Eggert</b> Colorado School of Mines
1:20 – 1:40 pm	Coatings and Process Development Reduced Energy Automotive OEM Manufacturing	PPG Industries, Inc.		
1:40 – 2:00 pm	Development of Integrated Die Casting Process For Large Thin-Wall Magnesium Applications	General Motors LLC		
2:00 – 2:20 pm	Rapid Freeform Sheet Metal Forming: Technology Development and System Verification	Ford Motor Company	2:00 – 3:00 pm	Manufacturing Demonstration Facility <b>Bill Peter</b> Oak Ridge NL
2:20 – 2:40 pm	Quenching and Partitioning Process Development to Replace Hot Stamping of High Strength Automotive Steel	Colorado School of Mines		
2:40 – 3:00 pm	High Metal Removal Rate Process for Machining Difficult Materials	Microolution LLC		
3:00 – 3:20 pm	BREAK			
3:20 – 3:40 pm	Sustainable Manufacturing via Multi-Scale Physics- Based Process Modeling and Manufacturing- Informed Design	Third Wave Systems Inc.	3:20 – 4:10 pm	PowerAmerica <b>Nick Justice</b> North Carolina State University

Day 1 (June 14) Continued

TRACK A Potomac Salon ABC			TRACK B Potomac Salon D	
Research and Development Projects Review			R&D Facilities Review	
3:40 – 4:00 pm	A New Method of Low Cost Production of Ti Alloys to Reduce Energy Consumption of Mechanical Systems	The University of Utah	4:10 – 5:00 pm	Institute for Advanced Composite Materials Innovation <b>Craig Blue</b> CCS Corporation
4:00 – 5:00 pm	SBIR Phase II Poster Preview Panel	<b>David Forrest</b> DOE-AMO		
	Integrated DC-DC Converters Using Thin-Film Magnetic Power Inductors	Ferric Semiconductor, Inc.		
	In-Line Quality and Process Control in Solar and Fuel Cell Manufacturing	Ultrasonic Technologies, Inc.		
	Ultra-Low Energy, Low Cost Industrial Nanomembrane Manufacturing for Desalination, Water Purification, and Remediation II	Covalent		
5:00 – 6:00 pm	BREAK			
5:00 – 6:00 pm	Private Dinner and Discussion for Reviewers			

5:30 – 7:30 pm

**POSTER SESSION AND NO-HOST RECEPTION (12 Posters)**  
**Georgetown Ballroom**

<b>Project Title</b>	<b>Performer</b>
Crosscutting Manufacturing R&D	Argonne National Laboratory
Combined Heat and Power R&D	Oak Ridge National Laboratory
HPC4Mfg: A Hi-fidelity model for coupling flow and mechanical deformation of the porous paper web in papermaking	Lawrence Livermore National Laboratory/LBNL/Agenda 2020
HPC4Mfg: The Virtual Steel Blast Furnace	LLNL/Purdue U. Calumet
HPC4Mfg: Study of Fluid Behavior Inside an Ammonothermal Gallium Nitride Reactor Using Computational Fluid dynamics	LLNL/Soraa
Flash Processed Steel for Automotive Applications	SFP Works
Phase II SBIR: Integrated DC-DC Converters Using Thin-Film Magnetic Power Inductors	Ferric Semiconductor, Inc.
Phase II SBIR: In-Line Quality and Process Control in Solar and Fuel Cell Manufacturing	Ultrasonic Technologies, Inc.
Phase II SBIR: Ultrahigh-Efficiency Capacitive Devices for Continuous Water Desalination	Mainstream Engineering Corp.
Phase II SBIR: CORE: Capability of Rolling Efficiency for 100mm High Speed Rails	OG Technologies, Inc.
Phase II SBIR: Ultra Low Energy, Low Cost Industrial Nanomembrane Manufacturing for Desalination, Water Purification, and Remediation II	Covalent

**Day 2 (June 15)**  
**Research and Development Projects**

**TRACK A Potomac Salon ABC**

**TRACK B Potomac Salon D**

8:00 – 9:00 am	<b>REGISTRATION FOR ATTENDEES</b>			
9:00 – 9:05 am	Welcome, AMO R&D Staff		Welcome, AMO R&D Staff	
9:05 – 9:25 am	Advanced, Energy-Efficient Hybrid Membrane System for Industrial Water Reuse	Research Triangle Institute	Carbon Fiber Technology Facility	Oak Ridge National Laboratory
9:25 – 9:45 am	Novel Membranes and Systems for Industrial and Municipal Water Purification and Reuse	GE Global Research	Low-Cost Bio-Based Carbon Fiber for High Temperature Processing	GrafTech International Holdings Inc.
9:45 – 10:05 am	Sacrificial Protective Coating Materials that can be Regenerated In-Situ to Enable High Performance Membranes	Teledyne Scientific and Imaging	No Heat Spray Drying Technology	ZoomEssence
10:05 – 10:20 am	<b>BREAK</b>			
10:20 – 10:40 am	Bio-Oxo Technology	Easel Bio-technologies	Energy Efficient Thermoplastic Composite Manufacturing	The Boeing Company
10:40 – 11:00 am	A Novel Unit Operation to Remove Hydrophobic Contaminants	Doshi & Associates	Novel Flash Ironmaking Process	American Iron and Steel Institute
11:00 – 11:20 am	Low-Energy, Low Cost Production of Ethylene by Low Temperature Oxidative Coupling of Methane	Siluria	Waste Heat-to-Power Using Scroll Expander for Organic Rankine Bottoming Cycle	TIAX

**Day 2 (June 15) Continued**  
**Research and Development Projects**

**TRACK A Potomac Salon ABC**

**TRACK B Potomac Salon D**

11:20 – 11:40 am	New Design Methods and Algorithms for Energy Efficient Distillation Trains	Purdue University	Industrial Scale Demonstration of Smart Manufacturing Achieving Transformational Energy Productivity Gains	University of Texas at Austin
11:40 – 12:00 pm	One Step Hydrogen Generation through Sorption Enhanced Reforming	Gas Technology Institute	Continuous Processing of High Thermal Conductivity Polyethylene Fibers and Sheets	Massachusetts Institute of Technology
12:00 – 12:20 pm	Development of an Automatic Continuous Online Monitoring and Control Platform for Polymerization Reactions	Tulane University	High Thermal Conductivity Polymer Composites for Low Cost Heat Exchangers	UTRC
12:20 – 12:40 pm	Conversion of Waste CO <sub>2</sub> and Shale Gas to High Value Chemicals	Novomer		
12:40 pm	<b>PEER REVIEW MEETING ADJOURNS</b>			
12:40 – 1:30 pm	<b>LUNCH FOR PARTICIPANTS</b>  <b>PRIVATE LUNCH FOR REVIEW PANEL</b>			
1:30 – 4:00 pm	<b>PRIVATE MEETING OF REVIEW PANEL</b> <i>(including time with AMO management to address outstanding questions)</i> <b>Potomac Salon ABC</b>			