### 2018 AMR Preliminary Program at a Glance

#### Wednesday, June 13 – Friday, June 15 Oral Technical Sessions and Posters

	Wednesday, June 13				Thursday, June 14				Friday, June 15				
Date		weunesu	ay, June 15			<u>'</u>	nursuay, June .	14	ı		Filday, Julie 15		
Topic	Fuel Cell R&D	H2 Fuel R&D	H2@Scale & Technology Acceleration	FE-SOFC	Fuel Cell R&D	H2 Fuel R&D	H2@Scale & Technology Acceleration	FE-SOFC	Interagency Activities	Fuel Cell R&D	H2 Fuel R&D	H2@Scale & Technology Acceleration	FE-SOFC
Room	Thurgood East/North	Thurgood South/West	Lincoln 6	Lincoln 5	Thurgood East/North	Thurgood South/West	Lincoln 6	Lincoln 5	Lincoln 3-4	Thurgood East/North	Thurgood South/West	Lincoln 6	Lincoln 5
7:30 AM		Continenta	al Breakfast			Co	ntinental Break	fast			Continent	al Breakfast	
7.30 AIVI		Thurgood Mo	arshall Foyers		Atrium & Thurgood Marshall Foyers				Atr	Atrium & Thurgood Marshall Foyers			
8:30 AM		Welcome and (	Sonoral Blonar	.,	FC	H2	H2S / TA	SOFC	IA	FC	H2	H2S / TA	SOFC
9:00 AM		Thurgood Mai		•	FC	H2	H2S / TA	SOFC	IA	FC	H2	H2S / TA	SOFC
9:30 AM		···a··goou ····a·	3.1.a 2.a 0.0		FC	H2	H2S / TA	SOFC	IA	FC	H2	H2S/TA	SOFC
10:00 AM		Drogram	Overview		FC	H2	H2S / TA	SOFC	IA	FC	H2	H2S/TA	SOFC
10:30 AM		_	nd				Break					eak	
			m Overviews				Thurgood Mars					od Marshall Foy	
11:00 AM					FC	H2	H2S / TA	SOFC	IA	FC	H2	H2S / TA	SOFC
11:30 AM		Thurgood Mai	rshall Ballroom	,	FC	H2	H2S / TA	SOFC	IA	FC	H2	H2S / TA	SOFC
12:00 PM			FC	H2	H2S / TA	SOFC	IA	FC	H2	H2S / TA	SOFC		
12:15 PM					FC	H2	H2S / TA	SOFC	IA	FC	H2	H2S / TA	SOFC
12:30 PM			nch t <i>Hall A</i>								L	H2S / TA	
1:00 PM		EXNIBIT	t Hall A		Lunch Exhibit Hall A								
1:15 PM							EXIIIDIL HUII A						
1:30 PM		_	m Overviews		50		112C / TA	5056					
1:45 PM 2:15 PM		Thurgood Mai	ard Ceremony	•	FC FC	H2	H2S / TA	SOFC	IA				
2:15 PM 2:45 PM		Atrium & Thu			FC FC	H2 H2	H2S / TA H2S / TA	SOFC SOFC	IA IA				
3:15 PM	FC	H2	H2S / TA	SOFC	FC FC	H2	H2S / TA	SOFC	IA IA				
3:15 PIVI	rc rc	П2	П23 / IA	3010	rc .	П2	Break	SUFC	IA				
3:45 PM	FC	H2	H2S / TA	SOFC		Atrium &	Thurgood Mars	hall Fovers					
4:15 PM	FC	H2	H2S / TA	SOFC	FC	H2	H2S / TA	SOFC	IA				
4:45 PM	FC	H2	H2S / TA	SOFC	FC	H2	H2S / TA	SOFC	IA				
5:15 PM	FC	H2	H2S / TA	SOFC	FC	H2	H2S / TA	SOFC	IA				
5:45 PM	FC	H2	H2S / TA	SOFC	FC	H2	H2S / TA	SOFC	IA				
6:30 PM		Poster S	Session A				Poster Session	В					
to 8:00 PM			lalls B&C			ı	Exhibit Halls B&	с					

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### Wednesday, June 13 Plenary Schedule

	Presentation	Location
7:30 AM	Registration, Reviewer Orientation, and Continental Breakfast	
8:30 AM	Welcome Remarks from the DOE Office of Energy Efficiency and Renewable Energy: Steven Chalk, Deputy Assistant Secretary for Transportation and Sunita Satyapal, Director, Fuel Cell Technologies Office	
8:45 AM	Hydrogen Council and Industry Panel Pierre-Etienne Franc, Vice President, Air Liquide, Hydrogen Energy World Business Unit Katsuhiko Hirose, Professional Partner, Toyota Motor Corporation Thierry Lepercq, Executive Vice President, Research, Technology and Innovation, ENGIE	Thurgood Marshall Ballroom
9:20 AM	<b>DOE Hydrogen and Fuel Cells Program Overview</b> Sunita Satyapal, Director, Fuel Cell Technologies Office	
10:00 AM	Break	Thurgood Marshall Foyers
10:30 AM	Hydrogen Fuel R&D Overview – Hydrogen Production, Delivery and Storage Eric Miller, Neha Rustagi, and Ned Stetson, Fuel Cell Technologies Office	
11:15 AM	Technology Acceleration & H2 Infrastructure R&D Overview Fred Joseck, Pete Devlin, Nancy Garland, Chris LaFleur, Jason Marcinkoski, Neha Rustagi, Fuel Cell Technologies Office	Thurgood Marshall Ballroom
12:00 PM	Keynote Remarks  Daniel Simmons, Principal Deputy Assistant Secretary,  DOE Office of Energy Efficiency and Renewable Energy	
12:15 PM	Lunch	Exhibit Hall A
1:30 PM	Fuel Cell R&D Overview  EE Fuel Cell R&D Overview - Dimitrios Papageorgopoulos, Fuel Cell Technologies Office FE-SOFC Program Overview - Shailesh Vora, National Energy Technology Laboratory	Thurgood Marshall Ballroom
2:30 PM	AMR Award Ceremony	
2:45 PM	Break	Atrium
3:15 PM	Beginning of Technical Sessions	

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## **WEDNESDAY JUNE 13 Oral Presentations**

Time	Fuel Cell R&D Thurgood East/North	Hydrogen Fuel R&D Thurgood South/West
3:15 PM	FC160 ElectroCat (Electrocatalysis Consortium)	PD148 HydroGEN Overview: A Consortium on Advanced Water Splitting Materials Huyen Dinh, NREL
3:45 PM	Deborah Myers, ANL & Piotr Zelenay, LANL	PD148A HydroGEN: Low-Temperature Electrolysis Guido Bender, NREL
4:15 PM	FC170 ElectroCat: Durable Mn-based PGM-Free Catalysts for Polymer Electrolyte Membrane Fuel Cells Hui Xu, Giner, Inc.	PD148B HydroGEN: High-Temperature Electrolysis Richard Boardman, INL
4:45 PM	FC171 ElectroCat: Advanced PGM-free Cathode Engineering for High Power Density and Durability Shawn Litster, Carnegie Mellon University	PD148C HydroGEN: Photoelectrochemical Hydrogen Production Adam Weber, LBNL
5:15 PM	FC172 ElectroCat: Highly Active and Durable PGM- free ORR Electrocatalysts through the Synergy of Active Sites Yuyan Shao, PNNL	PD148D HydroGEN: Solar Thermochemical Hydrogen Production Anthony McDaniel, SNL
5:45 PM	FC173 ElectroCat: PGM-free Engineered Framework Nanostructure Catalysts Prabhu Ganesan, Greenway Energy, LLC	PD170 Benchmarking Advanced Water Splitting Technologies: Best Practices in Materials Characterization Kathy Ayers, Proton OnSite
6:30 PM- 8:00 PM	Poster Sessi	on (See Detail)

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## **WEDNESDAY JUNE 13 Oral Presentations**

Time	H2@Scale & Technology Acceleration Lincoln 6	Fossil Energy - Solid Oxide Fuel Cells Lincoln 5
	H2@SCALE	FF1 SOFC Davidonment Undate at FuelCall Fragge
3:15 PM	H2000 H2@Scale Overview Bryan Pivovar & Mark Ruth, NREL	FE1 SOFC Development Update at FuelCell Energy Hossein Ghezel-Ayagh, FuelCell Energy
3:45 PM	TV045 H2@Scale Analysis Mark Ruth, NREL	FE2 LG Fuel Cell Systems SOFC Power System Development Cris DeBellis, LG Fuel Cell System
4:15 PM	SA059 Sustainability Analysis: Hydrogen Regional Sustainability (HyReS) Elizabeth Connelly, NREL	FE3 NETL R&D: SOFC Materials Development and Degradation Modeling Gregory Hackett, National Energy Technology Laboratory
4:45 PM	TV031 Dynamic Modeling and Validation of Electrolyzers in Real Time Grid Simulation Rob Hovsapian, INL	FE4 SOFC Development at PNNL: Overview Jeff Stevenson, Pacific Northwest National Lab
5:15 PM	TV043 Integrated Systems Modeling of the Interactions between Stationary Hydrogen, Vehicle, and Grid Resources  Max Wei, LBNL	FE5 Durability and Reliability of Materials and Components for SOFCs Edgar Lara-Curzio, Oak Ridge National Laboratory
5:45 PM	TV041 Modular SOEC System for Efficient H2 Production at High Current Density Hossein Ghezel-Ayagh, FuelCell Energy	FE6 Evaluation of Cathode Materials for SOFC Performance Reliability Brian Ingram, Argonne National Laboratory
6:30 PM- 8:00 PM	Poster Sess	sion (See Detail)

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### WEDNESDAY JUNE 13 Poster Presentations, 6:30-8:00 PM Exhibit Halls B & C

	Fuel Cells R&D	
FC01	Fuel Cells R&D – Sub-Program Overview	FCTO staff, as available
FC117	FY15 SBIR II Release 2: Ionomer Dispersion Impact on PEM Fuel Cell and Electrolyzer Durability	Hui Xu, Giner, Inc.
FC128	Facilitated Direct Liquid Fuel Cells with High Temperature Membrane Electrode Assemblies	Emory De Castro, Advent Technologies, Inc.
FC129	Advanced Catalysts and MEAs for Reversible Alkaline Membrane Fuel Cells	Hui Xu, Giner, Inc.
FC154	FY16 SBIR II Release 1: Regenerative Fuel Cell System SBIR Phase II	Paul Matter, pH Matter LLC
FC176	FY17 SBIR II Release 1: Novel Hydrocarbon Ionomers for Durable PEMs	William Harrison, Nanosonic, Inc.
FC177	FY17 SBIR I Release 2: Over-Molded Plates for Reduced Cost and Mass of PEM Fuel Cells	Daniel O'Connell, American Fuel Cell
FC178	Lab Call FY18 (Membrane): Spirocyclic Anion Exchange Membranes for Improved Performance and Durability	Bryan Pivovar, NREL
FC179	Lab Call FY18 (Membrane): Stable Alkaline Membrane Based on Proazaphosphatranes Organic Super Base	Gao Liu, LBNL
FC180	Lab Call FY18 (Membrane): High Performing and Durable Pyrophosphate Based Composite Membranes for Intermediate Temperature Fuel Cells	Cortney Kreller, LANL
FC181	Lab Call FY18 (Reversible FC): Microstructured Electrodes and Diffusion Layers for Enhanced Transport in Reversible Fuel Cells	Jacob Spendelow, LANL
FC182	Lab Call FY18 (Reversible FC): Bipolar Membrane Development to Enable Regenerative FCs	Todd Deutsch, NREL
FC183	Lab Call FY18 (Reversible FC): Technology-Enabling Materials, Cell Design for Reversible PEMFCs	Nem Danilovic, LBNL
	Hydrogen Fuels R&D - HydroGEN Seedling Projects	
PD152	Proton-Conducting Solid Oxide Electrolysis Cells for Large-scale Hydrogen Production at Intermediate Temperatures	Prabhakar Singh, University of Connecticut
PD153	Degradation Characterization and Modeling of a New Solid Oxide Electrolysis Cell Utilizing Accelerated Life Testing	Scott Barnett, Northwestern University
PD154	Thin-Film, Metal-Supported High-Performance and Durable Proton-Solid Oxide Electrolyzer Cell	Tianli Zhu, United Technologies Research Center
PD155	High Efficiency PEM Water Electrolysis Enabled by Advanced Catalysts, Membranes and Processes	Kathy Ayers, Proton OnSite
PD156	Developing Novel Platinum Group Metal-Free Catalysts for Alkaline Hydrogen and Oxygen Evolution Reactions	Sanjeev Mukerjee, Northeastern University
PD157	PGM-free OER Catalysts for PEM Electrolyzer	Di-Jia Liu, ANL
PD158	High-Performance Ultralow-Cost Non-Precious Metal Catalyst System for AEM Electrolyzer	Hoon Chung, LANL
PD159	Scalable Elastomeric Membranes for Alkaline Water Electrolysis	Yu Seung Kim, LANL
PD160	Best-in-class Platinum Group Metal-free (PGM-free) Catalyst Integrated Tandem Junction PEC Water Splitting Devices	Charles Dismukes, Rutgers University
PD161	Protective Catalyst Systems on III-V and Si-based Semiconductors for Efficient, Durable PEC Water Splitting Devices	Thomas Jaramillo, Stanford University
PD162	Novel Chalcopyrites For Advanced PEC Water Splitting	Nicolas Gaillard, University of Hawaii at Manoa
PD163	Monolithically Integrated Thin-Film/Silicon Tandem Photoelectrodes for High Efficiency and Stable PEC Water Splitting	Zetian Mi, University of Michigan
PD164	Efficient Solar Water Splitting with 5,000 Hours Stability Using Earth-Abundant Catalysts and Durable Layered 2D Perovskites	Aditya Mohite, LANL
PD165	Accelerated Discovery of STCH Hydrogen Production Materials via High-Throughput Computational and Experimental Methods	Ryan O'Hayre, Colorado School of Mines
PD166	Computationally Accelerated Discovery and Experimental Demonstration of High-Performance Materials for Advanced STCH Hydrogen Production	Charles Musgrave, University of Colorado - Boulder
PD167	Transformative Materials for High-Efficiency Thermochemical Production of Solar Fuels	Chris Wolverton, Northwestern University
PD168	Mixed Ionic Electronic Conducting Quaternary Perovskites: Materials by Design for STCH H2	Ellen Stechel, Arizona State University
PD169	High Temperature Reactor Catalyst Material Development for Low Cost and Efficient Solar Driven Sulfur-based Processes	Claudio Corgnale, Greenway Energy
SLAC	Reduced-Temperature Thermochemical Redox Reactions	William Chueh, SLAC National Accelerator Laboratory/Stanford

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### WEDNESDAY JUNE 13 Poster Presentations, 6:30-8:00 PM Exhibit Halls B & C

	Technology Acceleration	
TA01	Technology Acceleration & Hydrogen Infrastructure R&D – Sub-Program Overview	FCTO staff, as available
TA02	Technology Acceleration – Status and Accomplishments	FCTO staff, as available
TA03	Safety, Codes and Standards R&D – Sub-Program Overview	FCTO staff, as available
MT011	Fuel Cell Powered Airport Ground Support Equipment Deployment	Larry Pitts, Plug Power
MT014	Demonstration of Fuel Cell Auxiliary Power Unit (APU) to Power Truck Refrigeration Units (TRUs) in Refrigerated Trucks	Kriston Brooks, PNNL
TV001	Fuel Cell Electric Vehicle Evaluation	Shaun Onorato, NREL
TV029	Performance and Durability Testing of Volumetrically Efficient Cryogenic Vessels and High Pressure Liquid Hydrogen Pump	Salvador Aceves, LLNL
TV039	Innovative Advanced Hydrogen Mobile Fueler	Spencer Quong, Electricore
TV146	H2@Scale: Experimental Characterization of Durability of Advanced Electrolyzer Concepts in Dynamic Loading	Shaun Alia, NREL
TV148	Hydrogen Stations for Urban Sites	Brian Ehrhart, NREL/SNL
TV149	Mirai Testing	Henning Lohse-Busch, ANL
TV150	Analysis of Fuel Cells for Trucks	Ram Vijayagopal, ANL
SCS005	R&D for Safety, Codes and Standards: Materials and Components Compatibility	Chris San Marchi, SNL
SCS011	Hydrogen Quantitative Risk Assessment	Alice Muna, SNL
SCS021	NREL Hydrogen Sensor Testing Laboratory	William Buttner, NREL
SCS030	Advancing Fuel Cell Electric Vehicles in San Francisco and Beyond	Jessie Denver, City and County of San Francisco
MN012	Integrated Regional Technical Exchange Centers	Patrick Valente, Ohio Fuel Cell Coalition
MN013	Hydrogen Fuel Cell Nexus Business to Business Website	Alleyn Harned, Virginia Clean Cities at JMU
MN017	Manufacturing Competitiveness Analysis for Hydrogen Refueling Stations	Ahmad Mayyas, NREL
MN019	Material-Process-Performance Relationships in PEM Catalyst Inks and Coated Layers	Scott Mauger, NREL
	SBIR Phase 1 Projects (invited)	
FC184	New Fluorinated Ionomers for Enhanced Oxygen Transport in Fuel Cell Cathodes	Robert Lousenberg, Compact Membrane Systems
FC185	Novel Fluorinated Ionomer for PEM Fuel Cells	Hui Xu, Giner, Inc.
FC186	New Approaches to Improved PEMFC Catalyst Layer	Brad Morgan, Tetramer Technologies LLC
FC187	Development of Innovative Gas Diffusion Layers for Polymer Electrolyte Membrane Fuel Cells	Jason Morgan, AvCarb Material Solutions, LLC
FC188	High Performance Gas Diffusion Layer	Minette Ocampo, pH Matter, LLC
FC189	GDL Media Development for Improved PEM Fuel Cell Performance	Ashok Damle, Techverse, Inc.
FC190	Advanced Manufacturing of Gas Diffusion Layers with Highly Engineered Porosity	David Driscoll, Glacigen Materials, Inc.
FC191	Controlled Porosity and Surface Coatings for Advanced Gas Diffusion Layers	Christopher Lang, Physical Sciences Inc.
FC192	Nanostructured Carbon-Based Gas Diffusion Layers for Enhanced Fuel Cell Performance	Girish Srinivas, TDA Research, Inc.
FC193	Innovative Bilayer Microporous Layer for PEM Fuel Cells	Chao Lei, Giner, Inc.
PD173	Novel Membranes for Electrochemical Hydrogen Compression enabling Increased Pressure Capability and Higher Pumping Efficiency	Taoli Gu, Xergy
PD174	Novel Sulfonated Block Copolymers for Efficient Electrochemical Hydrogen Compression	Trent Molter, Sustainable Innovations
ST149	General Techniques for Increasing Packing Density of Metal-Organic Frameworks for Enhanced Volumetric Storage of Hydrogen	William Morris, NuMat Technologies
ST150	High Density Hydrogen Storage in Space-filling Polyhedral Sorbents	Ganesh Skandan, NEI Corporation
ST151	Development of Novel Compaction Regimes for Hydrogen Storage Materials	Brandon Ennis, E&G Associates, Inc.

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#### WEDNESDAY JUNE 13 Poster Presentations, 6:30-8:00 PM Exhibit Halls B & C

VVEDIN	VEDNESDAY JUNE 13 Poster Presentations, 6:30-8:00 PM Exhibit Halls B & C  Fossil Energy – Solid Oxide Fuel Cells Program			
	<u> </u>			
FE050-p	Development of Agile and Cost Effective Routes for Manufacturing Reliable Ceramic Components for SOFC Systems	John Pietras, Saint-Gobain		
FF()51-n I	Mapping of Temperature Profiles of the Entire Solid Oxide Fuel Cells with 8-mm Spatial Resolution During 800oC Operations	Kevin P. Chen, University of Pittsburgh		
FE052-p	Highly Active Hybrid Catalyst Impregnated Cathode for Proton Conducting Solid Oxide Fuel Cells	Fanglin (Frank) Chen, University of South Carolina		
FFU53-D	High Throughput, In-line Coating Metrology Development for Solid Oxide Fuel Cell (SOFC) Manufacturing	Sean R. Bishop, Redox Power Systems, LLC		
FE054-p	Highly-Active and Contaminant-Tolerant Cathodes for Durable Solid Oxide Fuel Cells	Meilin Liu, Georgia Institute of Technology		
FF055-n	On-Demand Designing of Cathode Internal Surface Architecture for Dramatic Enhancement of SOFC Performance and Durability	Xueyan Song, West Virginia University		
FFUSh-n	Effect of Spinel Composition on the Electrical Conductivity and Coefficient of Thermal Expansion in the (Ni,Co,Fe)3O4 System	Jiahong Zhu, Tennessee Technological University		
FE057-p	Operating Stresses and their Effects on Degradation of LSM-Based SOFC Cathodes	Chenxin Deng, Case Western Reserve University		
FE058-p	Degradation & Performance Studies of ALD-Stabilized Nano-Composite SOFC Cathodes	Kevin Huang, Michigan State University		
FE059-p	Improving Ni-Based Sofc Anode Resilience And Durability Through Secondary Phase Formation	Robert A. Walker, Montana State University		
FE060-p	Carbon Tolerant Anode for Controlled Hydrocarbon Reformation in SOFC	Prabhakar Singh, University of Connecticut		
FE061-p	Core-Shell Heterostructures As Solid Oxide Fuel Cell Electrodes	Srikanth Gopalan, Boston University		
FF()62-p	Improvement in Lifetime of SOFCs, Utilizing Novel, In-situ Methods to Remove Cathodic Chromium Deposits	Uday B. Pal, Boston University		
FE063-p	Cost-effective Stabilization of Nanostructured Cathodes by Atomic Layer Deposition	Raymond J. Gorte, University of Pennsylvania		
FE064-p	LGFCS SOFC Prototype System Testing	Crispin DeBellis, LG Fuel Cell Systems, Inc.		
FE065-p	High Temperature Oxidation Behavior of 3D Printed, HIP and Wrought AFA25 Alloys	Amit Pandey, LG Fuel Cell Systems, Inc.		
	Ultra High Temperature Anode Recycle Blower for Solid Oxide Fuel Cell	Garrett M. Davis, Mohawk Innovative Technology, Inc		
		Louis G. Carreiro , Naval Undersea Warfare Center		
FE067-p	Pressurized Operation of a Planar Solid Oxide Fuel Cell Stack	Division Newport		
FE068-p	Fluidized Bed Production of Surface Functionalized Powders for Solid Oxide Fuel Cell Cathodes	Nick M. Sbrockey, Structured Materials Industries, Inc		
	Laser 3D Printing of SOFC	Jian Liu, PolarOnyx, Inc		
FF070-p	Hybridization of freeze casting with additive manufacturing for simplified production of high performance SOFCs	David R. Driscoll , Glacigen Materials, Inc.		
FE071-p	Cold Spray Additive Manufacturing of Thermoelectric Generators	Alexander A. Baker, Lawrence Livermore National Laboratory		
FE072-p	Flame-Powered SOFC Generators	Michael C. Tucker, Lawrence Berkeley National Laboratory		
FE073-p	Progress in Metal-Supported Solid Oxide Fuel Cells	Emir Dogdibegovic , Lawrence Berkeley National Laboratory		
FE074-p	Electrode Engineering Research and Development Progress at NETL	Gregory Hackett , National Energy Technology Laboratory		
FE075-p	Cell and Stack Degradation Evaluation and Modeling Progress at NETL	Gregory Hackett , National Energy Technology Laboratory		
FF076-p	Advanced Reduced Order Model (ROM) Prediction and Error Quantification Framework for SOFC Stacks	Brian Koeppel , Pacific Northwest National Laboratory		
	Optimal Operating Conditions for Performance and Reliability of SOFCs	Kurtis P. Recknagle, Pacific Northwest National Laboratory		
FE077-p	Optimal Operating Conditions for Performance and Reliability of SOFCs Small-Scale Test Platform (SSTP) for SOFC Stacks	Kurtis P. Recknagle, Pacific Northwest National Laboratory  Jeff Stevenson, Pacific Northwest National Laboratory		
FE077-p FE078-p				
FE077-p FE078-p FE079-p	Small-Scale Test Platform (SSTP) for SOFC Stacks Composite Approach to Tailoring Thermal Expansion of LSCo-based Ceramic Cathode Contact for	Jeff Stevenson, Pacific Northwest National Laboratory		
FE077-p FE078-p FE079-p FE080-p	Small-Scale Test Platform (SSTP) for SOFC Stacks Composite Approach to Tailoring Thermal Expansion of LSCo-based Ceramic Cathode Contact for Solid Oxide Fuel Cell Applications	Jeff Stevenson, Pacific Northwest National Laboratory Y-S Chou, Pacific Northwest National Laboratory		
FE077-p FE078-p FE079-p FE080-p FE081-p	Small-Scale Test Platform (SSTP) for SOFC Stacks Composite Approach to Tailoring Thermal Expansion of LSCo-based Ceramic Cathode Contact for Solid Oxide Fuel Cell Applications Cr Mitigation by LSCF-based Materials for Solid Oxide Fuel Cells	Jeff Stevenson, Pacific Northwest National Laboratory Y-S Chou, Pacific Northwest National Laboratory Y-S Chou, Pacific Northwest National Laboratory Jung Pyung Choi , Pacific Northwest National Laboratory		
FE077-p FE078-p FE079-p FE080-p FE081-p FE082-p	Small-Scale Test Platform (SSTP) for SOFC Stacks Composite Approach to Tailoring Thermal Expansion of LSCo-based Ceramic Cathode Contact for Solid Oxide Fuel Cell Applications Cr Mitigation by LSCF-based Materials for Solid Oxide Fuel Cells Long Term Stability Tests of Low Temperature and Standard Reactive Air Aluminization Process LSM/YSZ Button Cell Tests in Cathode Air with Measured Cr Concentrations	Jeff Stevenson, Pacific Northwest National Laboratory Y-S Chou, Pacific Northwest National Laboratory Y-S Chou, Pacific Northwest National Laboratory Jung Pyung Choi , Pacific Northwest National Laboratory John S. Hardy, Pacific Northwest National Laboratory		
FE077-p FE078-p FE079-p FE080-p FE081-p FE082-p FE083-p	Small-Scale Test Platform (SSTP) for SOFC Stacks Composite Approach to Tailoring Thermal Expansion of LSCo-based Ceramic Cathode Contact for Solid Oxide Fuel Cell Applications Cr Mitigation by LSCF-based Materials for Solid Oxide Fuel Cells Long Term Stability Tests of Low Temperature and Standard Reactive Air Aluminization Process LSM/YSZ Button Cell Tests in Cathode Air with Measured Cr Concentrations Air Braze Optimization for Markets Targeted by Aegis Technology, Inc.	Jeff Stevenson, Pacific Northwest National Laboratory Y-S Chou, Pacific Northwest National Laboratory Y-S Chou, Pacific Northwest National Laboratory Jung Pyung Choi , Pacific Northwest National Laboratory John S. Hardy, Pacific Northwest National Laboratory John S. Hardy, Pacific Northwest National Laboratory		
FE077-p FE078-p FE079-p FE080-p FE081-p FE082-p FE083-p FE084-p	Small-Scale Test Platform (SSTP) for SOFC Stacks Composite Approach to Tailoring Thermal Expansion of LSCo-based Ceramic Cathode Contact for Solid Oxide Fuel Cell Applications Cr Mitigation by LSCF-based Materials for Solid Oxide Fuel Cells Long Term Stability Tests of Low Temperature and Standard Reactive Air Aluminization Process LSM/YSZ Button Cell Tests in Cathode Air with Measured Cr Concentrations	Jeff Stevenson, Pacific Northwest National Laboratory Y-S Chou, Pacific Northwest National Laboratory Y-S Chou, Pacific Northwest National Laboratory Jung Pyung Choi , Pacific Northwest National Laboratory John S. Hardy, Pacific Northwest National Laboratory		

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#### **THURSDAY JUNE 14 Oral Presentations**

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Time	Fuel Cell R&D Thurgood East/North	Hydrogen Fuel R&D Thurgood South/West
7:30 AM	Continental Breakfast - Atrius	m & Thurgood Marshall Foyers
8:30 AM		PD136 Electrochemical Compression Monjid Hamdan, Giner ELX, Inc.
9:00 AM	FC135 FC-PAD: Fuel Cell Performance and Durability Consortium Rod Borup, LANL	PD137 Hybrid Electrochemical-Metal Hydride Compression Claudio Corgnale, Greenway Energy, Inc.
9:30 AM		PD138 Metal Hydride Compression Terry Johnson, SNL
10:00 AM	FC155 Novel Ionomers & Electrode Structures for Improved PEMFC Electrode Performance at Low PGM Loadings Andrew Haug, 3M	PD146 Advancing Hydrogen Dispenser Technology by Using Innovative Intelligent Networks Bryan Gordon, Ivys Inc.
10:30 AM		rgood Marshall Foyers
11:00 AM	FC156 Durable High-Power Membrane Electrode Assemblies with Low-Pt- Loading Swami Kumaraguru, General Motors	PD140 Dispenser Reliability Michael Peters, NREL
11:30 AM	FC157 High Performance PEFC Electrode Structures Mike Perry, UTRC	PD149 Hydrogen Dispensing Hose Jennifer Lalli, NanoSonic
12:00 PM	FC158 Fuel Cell Membrane-Electrode-Assemblies with Ultra-Low Pt Nanofiber Electrodes Peter Pintauro, Vanderbilt University	PD150 Coatings for Compressor Seals Shannan O'Shaughnessy, GVD
12:30 PM	Lunch - Ex	hibit Hall A
1:45 PM	FC140 Tailored High Performance Low-PGM Alloy Cathode Catalysts Vojislav Stamenkovic, ANL	PD143 High Temperature Alkaline Water Electrolysis Hui Xu, Giner, Inc.
2:15 PM	FC141 Platinum Monolayer Electrocatalysts Jia Wang, BNL	PD151 New Approaches to Improved PEM Electrolyzer Ion Exchange Membranes Earl Wagener, Tetramer Technologies LLC
2:45 PM	FC142 Extended Surface Electrocatalyst Development Shaun Alia, NREL	ST001 System Level Analysis of Hydrogen Storage Options Rajesh Ahluwalia, ANL
3:15 PM	FC143 Highly Active, Durable, and Ultra-low PGM NSTF Thin Film ORR Catalysts and Supports Andrew Steinbach, 3M	ST100 Hydrogen Storage Cost Analysis Brian James, Strategic Analysis, Inc.
3:45 PM	Break - Atrium & Thu	rgood Marshall Foyers
4:15 PM	FC144 Highly-Accessible Catalysts for Durable High-Power Performance Anusorn Kongkanand, General Motors	ST127 HyMARC: A Consortium for Advancing Hydrogen Storage Materials
4:45 PM	FC145 Corrosion-Resistant Non-Carbon Electrocatalyst Supports for PEFCs Vijay Ramani, Washington University	Mark Allendorf & Tom Gennett, SNL; NREL
5:15 PM	FC161 Advanced Electro-Catalysts through Crystallographic Enhancement Jacob Spendelow, LANL	ST129 HyMARC: LLNL Technical Activities Brandon Wood, LLNL
5:45 PM	FC162 Vapor Deposition Process for Engineering of Dispersed PEMFC ORR Pt/NbOx/C Catalysts Jim Waldecker, Ford Motor Co.	ST130 HyMARC: LBNL Technical Activities David Prendergast, LBNL
6:30 PM- 8:00 PM		on (See Detail)

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#### THURSDAY JUNE 14 Oral Presentations

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1930 AND PROCESSION OF CONTROL	Time	Technology Acceleration				
Septiment Controlled   Controll	7:30 AM	Continental Breakfast - Atrium & Thurgood Marshall Foyers				
29 AM No. 10 Am June 1997 (September 1997) (September 199	8:30 AM	Dispatch Controller)		FCTO		
## ORIGINATION STATE AND CONTROL OF CONTROL STATE AND CONTROL OF C	9:00 AM		Performance	Paul Rogers, Director, U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC) RuthAnne Darling, Director of Innovation, Office of the Deputy Assistant Secretary of Defense for Operational Energy Rickey Shyne, Director, Research and Engineering, NASA Glenn Research		
MODIS AND TO A COLOR Amendment Materials Manufacturing to Discovering Control and Understanding of lightly Author and Durald-Congress (Date Date), CARLON Color and Co	9:30 AM		for Direct Hydrocarbon Utilization	Moderator: Fred Joseck, FCTO		
Manual Process States Date Licentary of Analysis of Control Process States Date Licentary of Analysis of Control Control Control San Spril, NSEL	10:00 AM		Electrodes for Solid Oxide Fuel Cells	Jean Baronas, California Energy Commission		
NO21 Pythogen station buts Collection and Analysis   Content Face Cell Carbones	10:30 AM		Break - Atrium & Thurgood Marshall Foyers			
Songe Systems with Hydrogen Delivery   And Stability of SOFC Cathode   Angel Speaking, ANL   Stagle Lau, Mark Hydrogen Lau, Mark Hydrogen Infrastructure Analysis   Collisione Petitops, LIM.   FE33 Development of a Thermal Spray, Redox Stable, Ceramic Anode for Metal Supported SoFC Richard Hart, General Electric Company   ADDS Fast Cell Lumanused Aerial Vehicle Development   Deve Molinary, Hawaii Center for Advanced Transportation Technologies   ADDS Fast Cell Lumanused Aerial Vehicle Development   Deve Molinary, Hawaii Center for Advanced Transportation Technologies   ADDS Fast Cell Center for Advanced Transportation Technologies   ADDS Fast Cell Center for Advanced Transportation Technologies   ADDS Fast Lau, Mark Hydrogen Liquefaction   Service Property   ADDS Fast Lau, Mark Hydrogen Liquefaction   Service Property   ADDS Fast Lau, Mark Hydrogen Liquefaction   Service Property   Charles Very and Bad Dosanyh, Curmins Power Generation/Ceres Power   Charles Very and Bad Dosanyh, Curmins Power Generation/Ceres Power   Charles Very and Bad Dosanyh, Curmins Power Generation/Ceres Power   Charles Very and Bad Dosanyh, Curmins Power Generation/Ceres Power   Charles Very and Bad Dosanyh, Curmins Power Generation/Ceres Power   Charles Very and Bad Dosanyh, Curmins Power Generation/Ceres Power   Charles Very and Bad Dosanyh, Curmins Power Generation/Ceres Power   Charles Very and Bad Dosanyh, Curmins Power Generation/Ceres Power   Charles Very and Bad Dosanyh, Curmins Power Generation/Ceres Power   Charles Very and Bad Dosanyh, Curmins Power Generation/Ceres Power   Charles Very and Bad Dosanyh, Curmins Power Generation/Ceres Power   Charles Very and Bad Dosanyh, Curmins Power Generation/Ceres Power   Charles Very and Bad Dosanyh, Curmins Power Generation/Ceres Power   Charles Very and Bad Dosanyh, Curmins Power Generation   Charles Very and Bad Dosa	11:00 AM	TV017 Hydrogen Station Data Collection and Analysis	Oxide Fuel Cell Cathodes			
FELD Development of a Themsel Spray, Redox Stable, Ceramic Anode for Metal Supported SOFT Stable (Peramic Anode for Metal Supported SOFT Richard Hart, General Electric Company)  Lizis FM  PD131 Magnetocianic Hydrogen Infrastructure Analysis  Lizis FM  PD131 Magnetocianic Hydrogen Liquefaction Lizis FM  PD131 Magnetocianic Hydrogen Liquefaction Lizis FM  SCSD25 Finabiling Hydrogen Infrastructure Through Science-based Codes Andrea Vessely and Rall Dosanith, Cummins Power Generation/Ceres Power  Andrea Vessely and Rall Dosanith, Cummins Power Generation/Ceres Power  Alice Mana, SNI.  Alice Mana, SNI.  SCSD25 Finabiling Hydrogen Infrastructure Through Science-based Codes FE15 Innovative, Versatilia and Cost-Effective Solid Oxide Fuel Cell Stack Concept April Magnetocianic Hydrogen and Standards: Hydrogen Rehavior Representation of Stable Concept April Magnetocianic Hydrogen Infrastructure Through Science-based Codes FE15 Innovative, Versatilia and Cost-Effective Solid Oxide Fuel Cell Stack Concept April Magnetocianic Hydrogen Infrastructure Through Science-based Codes FE15 Innovative, Versatilia and Cost-Effective Solid Oxide Fuel Cell Stack Concept April Magnetocianic Hydrogen Infrastructure Through Science-based Codes FE15 Innovative, Versatilia and Cost-Effective Solid Oxide Fuel Cell Stack Concept April Magnetocianic Hydrogen Infrastructure Through Science-based Codes FE15 Innovative, Versatilia and Cost-Effective Solid Oxide Fuel Cell Stack Concept April Magnetocianic Hydrogen Infrastructure Through Science-based Codes FE15 Innovative, Versatilia and Cost-Effective Solid Oxide Fuel Cell Stack Concept April Magnetocianic Hydrogen Infrastructure Through Science-based Codes FE15 Innovative, Versatilia and Cost-Effective Solid Oxide Fuel Cell Stack Science-Balance April Magnetocianic Hydrogen Infrastructure Through Science For Magnetocianic Hydrogen Infrastructure April Fe16 Infrastructure Project Infrastructure April Fe16 Infrastructure Project Infrastructure April Fe16 Infrastructure Project Infrastructure Proje	11:30 AM	Storage Systems with Hydrogen Delivery	and Stability of SOFC Cathode			
12:35 PM  12:35	12:00 PM			· ·		
P131 Magnetocaloric Hydrogen Liquefaction Jamie Holladay, PNNL  SCSDS Fnabling Hydrogen Infrastructure Through Science-based Codes and Standards. Alice Muna, SNL  SCSDS Fnabling Hydrogen Infrastructure Through Science-based Codes and Standards. Alice Muna, SNL  SCSDS Fnabling Hydrogen Infrastructure Through Science-based Codes and Standards. Alice Muna, SNL  SCSDS Fnabling Hydrogen Infrastructure Through Science-based Codes and Standards. Alice Muna, SNL  SCSDS Fnabling Hydrogen Infrastructure Through Science-based Codes and Standards. Alice Muna, SNL  SCSDS Fnabling Hydrogen Infrastructure Through Science-based Codes and Standards. Alice Muna, SNL  SCSDS Fnabling Hydrogen Infrastructure Through Science-based Codes and Standards. Alice Muna, SNL  SCSDS Forabling Hydrogen Infrastructure Through Science-based Codes and Standards. Alice Muna, SNL  SCSDS Forabling Hydrogen Infrastructure Through Science-based Codes and Standards. Alice Muna, SNL  SCSDS SCSDS Compatibility of Polymeric Materials Used in the Hydrogen Infrastructure	12:15 PM	Guillaume Petitpas, LLNL	Richard Hart, General Electric Company	Dave Molinaro, Hawaii Center For Advanced Transportation Technologies		
P0131 Magnetocatoric Hydrogen Equipatation   Cost, High Efficiency and Robust Stationary Power Systems   Cost High Efficiency and Robust Stationary Power Systems   Cost High Efficiency and Standards   Cost High Efficiency and Robust Stationary Power Generation/Ceres Power   Cost High Efficiency and Standards   Corcept   Cost High Efficiency and Standards   Cost High Efficiency and Robot Station   Corcept   Cost High Efficiency and Robot Station   Cost High Efficiency   Connecticut   Cost High Efficiency   Connecticut   Cost High Efficiency   Connecticut   Cost High Efficiency   Cost High Efficiency   Cost High Efficiency   Cost High Efficiency   Cost High E	12:30 PM	Lunch -	Exhibit Hall A			
SCS025 Enabling Hydrogen Infrastructure Through Science-based Codes and Standards and Standards: Hydrogen Behavior Ethan Hecht, SNL SCS026 Compatibility of Polymeric Materials Used in the Hydrogen Behavior Ethan Hecht, SNL SCS026 Compatibility of Polymeric Materials Used in the Hydrogen Infrastructure Report Materials Used in Hydrogen Infrastructure Report Materials Used Infrastructure Report Materials Used Infrastructure Report Materials Used Infrastructure Report Materials Infrastructure Report Report Materials Infrastructure Report Report Materials Infrastructure Report Report Infrastructure Report Report Report Infrastructure Report Report Infrastructure Report Report Infrastructure Report Report Repo	1:45 PM		Cost, High Efficiency and Robust Stationary Power Systems			
SCS010 R&D for Safety, Codes and Standards: Hydrogen Behavior Ethan Hecht, SNL  SCS016 Compatibility of Polymeric Materials Used in the Hydrogen Infrastructure Kevin Simmons, PNNL  3:15 PM  PD025 Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service  ### AND 15 Continuous Fiber Composite Electrofusion Coupler Brett Kimball, Automated Dynamics  ### SCS007 Fuel Quality Assurance R&D and Impurity Testing in Support of Codes & Standards Tommy Rockward, LANL  ### SCS007 Fuel Quality Assurance R&D and Impurity Trucks with a Fuel Cell Emphasis Chald Munter, NREL  **REA FLT Reformance of Might-Strength Pipeline Steels and Company  ### SCS007 Fuel Quality Assurance R&D and Impurity Trucks Radio Munters and Polymeration Company  ### Scs007 Fuel Quality Assurance R&D and Impurity Trucks with a Fuel Cell Emphasis Chald Munter, NREL  **REA FLT Reformance of Might-Strength Pipeline Steels and Their EF11 Mittigation of Chromium Impurity Effects and Degradation in Solid Oxide FE20 Chromium Sensor for Monitoring Solid Oxide Fuel Cell Systems Prabhakar Singh, University of Connecticut  **REA FLT Reformance of Might Strength Pipeline Steels and Their Codes & Standards Tommy Rockward, LANL  With a Fuel Cell Emphasis Chald Hunter, NREL  **REA FLT Reformance of High-Strength Pipeline Steels and Their RE11 Highly Selective and Stable Multivariable Gas Sensors for Enhanced Robustness and Reliability of Sofic Operation Patrial Service Company  **Rea Flt Might Service S	2:15 PM	SCS025 Enabling Hydrogen Infrastructure Through Science-based Codes	FE15 Innovative. Versatile and Cost-Effective Solid Oxide Fuel Cell Stack			
SCSUD (MRD) for Safety, Codes and Standards: Hydrogen Behavior Ethan Hecht, SNL  SCSUD (Edma) Hecht, SNL  MT008 Hydrogen Energy Systems as a Grid Management Tool Mitch Ewan, Hawaii Natural Energy Institute  FE17 Performance and Reliability Advancements in a Durable Low Temperature Tubular SOFC Praveen Cheeatamaria, Atrex energy  MT008 Hydrogen Energy Systems as a Grid Management Tool Mitch Ewan, Hawaii Natural Energy Institute  Welds in Hydrogen Gas Service Joe Ronevich, SNL  MN015 Continuous Fiber Composite Electrofusion Coupler Brett Kimball, Automated Dynamics  FE18 Mitigation of Chromium Impurity Effects and Degradation in Solid Oxide Full Cells: Role of Thermodynamics and Transport  Srikanth Gopalan, Boston University  MN015 Continuous Fiber Composite Electrofusion Coupler Brett Kimball, Automated Dynamics  FE19 Materials and Approaches for the Mitigation of SOFC Cathode Degradation in SOFC Power Systems Prabhakar Singh, University of Connecticut  FE19 Materials and Approaches for the Mitigation of SOFC Cathode Degradation in SOFC Power Systems Prabhakar Singh, University of Connecticut  FE20 Chromium Sensor for Monitoring Solid Oxide Fuel Cell Systems Jeffrey Fergus, Auburn University  SCS007 Fuel Quality Assurance R&D and Impurity Testing in Support of Codes & Standards Tommy Rockwand, LNNL  SA169 Market Segmentation Analysis of Medium and Heavy Duty Trucks With a Fuel Cell Emphasis Chad Hunter, NREL  SA169 Market Segmentation Analysis of Medium and Heavy Duty Trucks With a Fuel Cell Emphasis Chad Hunter, NREL  SA169 Market Segmentation Analysis of Medium and Heavy Duty Trucks Radiava Potyrallo, General Hectric Company  Protection Company  Protection Company  Protection Company  Protection Company  MO13 Certain Transport  AL009 Fuel Cell Cell Rab Transport  Al009 Fuel Cell Rab Dorder						
Infrastructure Kevin Simmons, PNNL Proveen Cheeatamaria, Arrex energy  Proves Chief Cell Rio Dox Intervious Interv	2:30 PM	and Standards	Concept Nguyen Minh, University of California, SanDiego	IA015 NSF-Sponsored Hydrogen and Fuel Cell Related R&D		
PD025 Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service Joe Ronevich, SNL  MN015 Continuous Fiber Composite Electrofusion Coupler Brett Kimball, Automated Dynamics FE19 Materials and Approaches for the Mitigation of SOFC Cathode Degradation in SOFC Power Systems Prabhakar Singh, University of Connecticut  Sci200 FM  Sci200 Fuel Quality Assurance R&D and Impurity Testing in Support of Codes & Standards Tommy Rockward, LANL  SA169 Market Segmentation Analysis of Medium and Heavy Duty Trucks (Abd Hunter, NREL)  Sci20 FM-8:00  Poster Session (See Petail)  A1009 Fuel Cell R&D for Earth and Space Applications In John Dian Jakupca, NASA  IA009 Fuel Cell R&D for Earth and Space Applications Ian Jakupca, NASA  IA009 Fuel Cell R&D for Earth and Space Applications Ian Jakupca, NASA  IA009 Fuel Cell R&D for Earth and Space Applications Ian Jakupca, NASA  IA009 Fuel Cell R&D for Earth and Space Applications Ian Jakupca, NASA  IA009 Fuel Cell R&D for Earth and Space Applications Ian Jakupca, NASA  IA010 The Brentwood Station Experience Robin Nixon, National Park Service  IA011 Alternative Fuel Corridor Program Diane Turchetta, Federal Highway Administration  Diane Turchetta, Federal Highway Administration  IA012 Hydrogen-Related Activities at EPA Susan Burke, Environmental Protection Agency  FE20 Chromium Sensor for Monitoring Solid Oxide Fuel Cell Systems Jeffrey Fergus, Auburn University  IA013 Regional Hydrogen Infrastructure Panel - Session Moderator: Nancy Garland, FCTO  Bill Intrick, California Fuel Cell Partnership Pat Valente, Ohio Fuel Cell Coalition Joel Rinebold, Connecticut Center for Advanced Technology, Inc.  Poster Session (See Petail)	2:30 PM 2:45 PM	and Standards Alice Muna, SNL SCS010 R&D for Safety, Codes and Standards: Hydrogen Behavior	Concept Nguyen Minh, University of California, SanDiego  FE16 IT-SOFCs: Overview of Stack Size Scaling Efforts and Red-Ox Robust All- Ceramic Anode Cell Based Stacks	IA015 NSF-Sponsored Hydrogen and Fuel Cell Related R&D Carole Read, National Science Foundation IA008 National Fuel Cell Bus Program		
PDD25 Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service  Welds in Hydrogen Gas Service  Joe Ronevich, SNL  MN015 Continuous Fiber Composite Electrofusion Coupler Brett Kimball, Automated Dynamics  FE19 Materials and Approaches for the Mitigation of SOFC Cathode Degradation in SOFC Power Systems  Prabhakar Singh, University of Connecticut  Sc300 FM  SC5007 Fuel Quality Assurance R&D and Impurity Testing in Support of Codes & Standards Tommy Rockward, LANL  SA169 Market Segmentation Analysis of Medium and Heavy Duty Trucks with a Fuel Cell Emphasis Chad Hunter, NREL  PDD25 Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Infrastructure Panel - Session Moderator: Against Pat Valente, Ohio Fuel Cell Partnership Pat Valente, Ohio Fuel Cell Coalition Joel Rinebold, Connecticut Center for Advanced Technology, Inc.  Poster Session (See Petail)	2:30 PM	and Standards Alice Muna, SNL  SCS010 R&D for Safety, Codes and Standards: Hydrogen Behavior Ethan Hecht, SNL  SCS026 Compatibility of Polymeric Materials Used in the Hydrogen Infrastructure	Concept Nguyen Minh, University of California, SanDiego  FE16 IT-SOFCs: Overview of Stack Size Scaling Efforts and Red-Ox Robust All- Ceramic Anode Cell Based Stacks Sean Bishop and Bryan Blackburn, Redox Power Systems FE17 Performance and Reliability Advancements in a Durable Low Temperature Tubular SOFC	IA015 NSF-Sponsored Hydrogen and Fuel Cell Related R&D Carole Read, National Science Foundation  IA008 National Fuel Cell Bus Program Sean Ricketson, Federal Transit Administration  MT008 Hydrogen Energy Systems as a Grid Management Tool		
4:43 PM  4:45 PM  MN015 Continuous Fiber Composite Electrofusion Coupler Brett Kimball, Automated Dynamics  5:50 PM  Scoop Fuel Quality Assurance R&D and Impurity Testing in Support of Codes & Standards Tommy Rockward, LANL Tommy Rockward, LANL  SA169 Market Segmentation Analysis of Medium and Heavy Duty Trucks with a Fuel Cell Emphasis Chad Hunter, NREL  Scoop Fuel Quality Assurance R&D and Impurity Testing in Support of Codes & Standards Tommy Rockward, LANL Shafe Market Segmentation Analysis of Medium and Heavy Duty Trucks with a Fuel Cell Emphasis Chad Hunter, NREL  Scoop Fuel Quality Assurance R&D and Impurity Testing in Support of Codes & Standards Tommy Rockward, LANL Shafe Market Segmentation Analysis of Medium and Heavy Duty Trucks Readislav Potyrailo, General Electric Company  Scoop Fuel Quality Assurance R&D and Impurity Testing in Support of Codes & Standards Tommy Rockward, LANL Shafe Market Segmentation Analysis of Medium and Heavy Duty Trucks Readislav Potyrailo, General Electric Company  Scoop Fuel Quality Assurance R&D and Impurity Testing in Support of Codes & Standards Standards Tommy Rockward, LANL Shafe Market Segmentation Analysis of Medium and Heavy Duty Trucks Readislav Potyrailo, General Electric Company  Scoop Fuel Quality Assurance R&D and Impurity Testing in Support of Codes & Standards Standards Tommy Rockward, LANL Shafe Market Segmentation Analysis of Medium and Heavy Duty Trucks Readislav Potyrailo, General Electric Company  Scoop Fuel Quality Assurance R&D and Impurity Testing in Support of Connecticut Center for Advanced Technology, Inc.  Scoop Fuel Quality Assurance R&D and Impurity Testing in Support of Connecticut Center for Advanced Technology, Inc.  Scoop Fuel Quality Assurance R&D and Impurity Testing in Support of Connecticut Center for Advanced Technology, Inc.	2:45 PM	and Standards Alice Muna, SNL  SCS010 R&D for Safety, Codes and Standards: Hydrogen Behavior Ethan Hecht, SNL  SCS026 Compatibility of Polymeric Materials Used in the Hydrogen Infrastructure	Concept Nguyen Minh, University of California, SanDiego  FE16 IT-SOFCs: Overview of Stack Size Scaling Efforts and Red-Ox Robust All- Ceramic Anode Cell Based Stacks Sean Bishop and Bryan Blackburn, Redox Power Systems FE17 Performance and Reliability Advancements in a Durable Low Temperature Tubular SOFC Praveen Cheeatamarla, Atrex energy	IA015 NSF-Sponsored Hydrogen and Fuel Cell Related R&D Carole Read, National Science Foundation  IA008 National Fuel Cell Bus Program Sean Ricketson, Federal Transit Administration  MT008 Hydrogen Energy Systems as a Grid Management Tool		
MN015 Continuous Fiber Composite Electrofusion Coupler Brett Kimball, Automated Dynamics  5:00 PM  Scoop Full Quality Assurance R&D and Impurity Testing in Support of Codes & Standards Tommy Rockward, LANL  SA169 Market Segmentation Analysis of Medium and Heavy Duty Trucks with a Fuel Cell Emphasis Chad Hunter, NREL  Sa30 PM-8:00  MN015 Continuous Fiber Composite Electrofusion Coupler Degradation in SOFC Power Systems Prabhakar Singh, University of Connecticut  FE19 Materials and Approaches for the Mitigation of SOFC Cathode Degradation in SOFC Power Systems IA012 Hydrogen-Related Activities at EPA Susan Burke, Environmental Protection Agency  IA013 Regional Hydrogen Infrastructure Panel - Session Moderator: Nancy Garland, FCTO Bill Elrick, California Fuel Cell Partnership Pat Valente, Ohio Fuel Cell Coalition Joel Rinebold, Connecticut Center for Advanced Technology, Inc.  18:30 PM-8:00	2:45 PM 2:45 PM 3:15 PM	and Standards Alice Muna, SNL  SCS010 R&D for Safety, Codes and Standards: Hydrogen Behavior Ethan Hecht, SNL  SCS026 Compatibility of Polymeric Materials Used in the Hydrogen Infrastructure Kevin Simmons, PNNL  PD025 Fatigue Performance of High-Strength Pipeline Steels and Their	Concept Nguyen Minh, University of California, SanDiego  FE16 IT-SOFCs: Overview of Stack Size Scaling Efforts and Red-Ox Robust All- Ceramic Anode Cell Based Stacks Sean Bishop and Bryan Blackburn, Redox Power Systems FE17 Performance and Reliability Advancements in a Durable Low Temperature Tubular SOFC Praveen Cheeatamarla, Atrex energy  Break - Atrium & Thurgood Marshall Foyers  FE18 Mitigation of Chromium Impurity Effects and Degradation in Solid Oxide	IA015 NSF-Sponsored Hydrogen and Fuel Cell Related R&D Carole Read, National Science Foundation  IA008 National Fuel Cell Bus Program Sean Ricketson, Federal Transit Administration  MT008 Hydrogen Energy Systems as a Grid Management Tool Mitch Ewan, Hawaii Natural Energy Institute  IA009 Fuel Cell R&D for Earth and Space Applications		
SCS007 Fuel Quality Assurance R&D and Impurity Testing in Support of Codes & Standards Tommy Rockward, LANL  SA169 Market Segmentation Analysis of Medium and Heavy Duty Trucks with a Fuel Cell Emphasis Chad Hunter, NREL  SA29 PM-8:00  Prabhakar Singh, University of Connecticut  IA012 Hydrogen-Related Activities at EPA Susan Burke, Environmental Protection Agency  IA013 Regional Hydrogen Infrastructure Panel - Session Moderator: Nancy Garland, FCTO Bill Etrick, California Fuel Cell Partnership Pat Valente, Ohio Fuel Cell Coalition Joel Rinebold, Connecticut Center for Advanced Technology, Inc.	2:45 PM  3:15 PM  3:45 PM	and Standards Alice Muna, SNL  SCS010 R&D for Safety, Codes and Standards: Hydrogen Behavior Ethan Hecht, SNL  SCS026 Compatibility of Polymeric Materials Used in the Hydrogen Infrastructure Kevin Simmons, PNNL  PD025 Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service	Concept Nguyen Minh, University of California, SanDiego  FE16 IT-SOFCs: Overview of Stack Size Scaling Efforts and Red-Ox Robust All- Ceramic Anode Cell Based Stacks Sean Bishop and Bryan Blackburn, Redox Power Systems FE17 Performance and Reliability Advancements in a Durable Low Temperature Tubular SOFC Praveen Cheeatamarla, Atrex energy  Break - Atrium & Thurgood Marshall Foyers  FE18 Mitigation of Chromium Impurity Effects and Degradation in Solid Oxide Fuel Cells: Role of Thermodynamics and Transport	IA015 NSF-Sponsored Hydrogen and Fuel Cell Related R&D Carole Read, National Science Foundation  IA008 National Fuel Cell Bus Program Sean Ricketson, Federal Transit Administration  MT008 Hydrogen Energy Systems as a Grid Management Tool Mitch Ewan, Hawaii Natural Energy Institute  IA009 Fuel Cell R&D for Earth and Space Applications Ian Jakupca, NASA IA010 The Brentwood Station Experience		
Codes & Standards Tommy Rockward, LANL  SA169 Market Segmentation Analysis of Medium and Heavy Duty Trucks with a Fuel Cell Emphasis Chad Hunter, NREL  SA269 PM-8:00  Poster Session (See Detail)  LA013 Regional Hydrogen Infrastructure Panel - Session Moderator: Nancy Garland, FCTO  Bill Elrick, California Fuel Cell Partnership Pat Valente, Ohio Fuel Cell Coalition Joel Rinebold, Connecticut Center for Advanced Technology, Inc.	2:45 PM 2:45 PM 3:15 PM 3:45 PM 4:15 PM	and Standards Alice Muna, SNL  SCS010 R&D for Safety, Codes and Standards: Hydrogen Behavior Ethan Hecht, SNL  SCS026 Compatibility of Polymeric Materials Used in the Hydrogen Infrastructure Kevin Simmons, PNNL  PD025 Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service Joe Ronevich, SNL  MN015 Continuous Fiber Composite Electrofusion Coupler	Concept Nguyen Minh, University of California, SanDiego  FE16 IT-SOFCs: Overview of Stack Size Scaling Efforts and Red-Ox Robust All-Ceramic Anode Cell Based Stacks Sean Bishop and Bryan Blackburn, Redox Power Systems FE17 Performance and Reliability Advancements in a Durable Low Temperature Tubular SOFC Praveen Cheeatamarla, Atrex energy  Break - Atrium & Thurgood Marshall Foyers  FE18 Mitigation of Chromium Impurity Effects and Degradation in Solid Oxide Fuel Cells: Role of Thermodynamics and Transport Srikanth Gopalan, Boston University  FE19 Materials and Approaches for the Mitigation of SOFC Cathode Degradation in SOFC Power Systems	IAO15 NSF-Sponsored Hydrogen and Fuel Cell Related R&D Carole Read, National Science Foundation  IAO08 National Fuel Cell Bus Program Sean Ricketson, Federal Transit Administration  MT008 Hydrogen Energy Systems as a Grid Management Tool Mitch Ewan, Hawaii Natural Energy Institute  IAO09 Fuel Cell R&D for Earth and Space Applications lan Jakupca, NASA  IAO10 The Brentwood Station Experience Robin Nixon, National Park Service		
SA169 Market Segmentation Analysis of Medium and Heavy Duty Trucks I+E/1 Highly Selective and Stable Multivariable Gas Sensors for Enhanced with a Fuel Cell Emphasis Robustness and Reliability of SOFC Operation Chad Hunter, NREL Radislav Potyrailo, General Electric Company Paster Session (See Detail)	2:45 PM 2:45 PM 3:15 PM 3:45 PM 4:15 PM	and Standards Alice Muna, SNL  SCSO10 R&D for Safety, Codes and Standards: Hydrogen Behavior Ethan Hecht, SNL  SCSO26 Compatibility of Polymeric Materials Used in the Hydrogen Infrastructure Kevin Simmons, PNNL  PD025 Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service Joe Ronevich, SNL  MN015 Continuous Fiber Composite Electrofusion Coupler Brett Kimball, Automated Dynamics	Concept Nguyen Minh, University of California, SanDiego  FE16 IT-SOFCs: Overview of Stack Size Scaling Efforts and Red-Ox Robust All-Ceramic Anode Cell Based Stacks Sean Bishop and Bryan Blackburn, Redox Power Systems FE17 Performance and Reliability Advancements in a Durable Low Temperature Tubular SOFC Praveen Cheeatamarla, Atrex energy  Break - Atrium & Thurgood Marshall Foyers  FE18 Mitigation of Chromium Impurity Effects and Degradation in Solid Oxide Fuel Cells: Role of Thermodynamics and Transport Srikanth Gopalan, Boston University  FE19 Materials and Approaches for the Mitigation of SOFC Cathode Degradation in SOFC Power Systems	IA015 NSF-Sponsored Hydrogen and Fuel Cell Related R&D Carole Read, National Science Foundation  IA008 National Fuel Cell Bus Program Sean Ricketson, Federal Transit Administration  MT008 Hydrogen Energy Systems as a Grid Management Tool Mitch Ewan, Hawaii Natural Energy Institute  IA009 Fuel Cell R&D for Earth and Space Applications Ian Jakupca, NASA  IA010 The Brentwood Station Experience Robin Nixon, National Park Service  IA011 Alternative Fuel Corridor Program Diane Turchetta, Federal Highway Administration  IA012 Hydrogen-Related Activities at EPA		
Poster Session (See Detail)	2:45 PM 2:45 PM 3:15 PM 3:45 PM 4:15 PM 4:30 PM 4:45 PM	and Standards Alice Muna, SNL  SCS010 R&D for Safety, Codes and Standards: Hydrogen Behavior Ethan Hecht, SNL  SCS026 Compatibility of Polymeric Materials Used in the Hydrogen Infrastructure Kevin Simmons, PNNL  PD025 Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service Joe Ronevich, SNL  MN015 Continuous Fiber Composite Electrofusion Coupler Brett Kimball, Automated Dynamics  SCS007 Fuel Quality Assurance R&D and Impurity Testing in Support of Codes & Standards	Concept Nguyen Minh, University of California, SanDiego  FE16 IT-SOFCs: Overview of Stack Size Scaling Efforts and Red-Ox Robust All-Ceramic Anode Cell Based Stacks Sean Bishop and Bryan Blackburn, Redox Power Systems FE17 Performance and Reliability Advancements in a Durable Low Temperature Tubular SOFC Praveen Cheeatamarla, Atrex energy  Break - Atrium & Thurgood Marshall Foyers  FE18 Mitigation of Chromium Impurity Effects and Degradation in Solid Oxide Fuel Cells: Role of Thermodynamics and Transport Srikanth Gopalan, Boston University  FE19 Materials and Approaches for the Mitigation of SOFC Cathode Degradation in SOFC Power Systems Prabhakar Singh, University of Connecticut  FE20 Chromium Sensor for Monitoring Solid Oxide Fuel Cell Systems	IAO15 NSF-Sponsored Hydrogen and Fuel Cell Related R&D Carole Read, National Science Foundation  IAO08 National Fuel Cell Bus Program Sean Ricketson, Federal Transit Administration  MT008 Hydrogen Energy Systems as a Grid Management Tool Mitch Ewan, Hawaii Natural Energy Institute  IAO09 Fuel Cell R&D for Earth and Space Applications Ian Jakupca, NASA  IAO10 The Brentwood Station Experience Robin Nixon, National Park Service  IAO11 Alternative Fuel Corridor Program Diane Turchetta, Federal Highway Administration  IAO12 Hydrogen-Related Activities at EPA Susan Burke, Environmental Protection Agency  IAO13 Regional Hydrogen Infrastructure Panel - Session Moderator: Nancy Garland, FCTO		
	2:45 PM 2:45 PM 3:15 PM 3:45 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM	and Standards Alice Muna, SNL  SCS010 R&D for Safety, Codes and Standards: Hydrogen Behavior Ethan Hecht, SNL  SCS026 Compatibility of Polymeric Materials Used in the Hydrogen Infrastructure Kevin Simmons, PNNL  PD025 Fatigue Performance of High-Strength Pipeline Steels and Their Welds in Hydrogen Gas Service Joe Ronevich, SNL  MN015 Continuous Fiber Composite Electrofusion Coupler Brett Kimball, Automated Dynamics  SCS007 Fuel Quality Assurance R&D and Impurity Testing in Support of Codes & Standards Tommy Rockward, LANL  SA169 Market Segmentation Analysis of Medium and Heavy Duty Trucks with a Fuel Cell Emphasis	Concept Nguyen Minh, University of California, SanDiego  FE16 IT-SOFCs: Overview of Stack Size Scaling Efforts and Red-Ox Robust All-Ceramic Anode Cell Based Stacks Sean Bishop and Bryan Blackburn, Redox Power Systems FE17 Performance and Reliability Advancements in a Durable Low Temperature Tubular SOFC Praveen Cheeatamarla, Atrex energy  Break - Atrium & Thurgood Marshall Foyers  FE18 Mitigation of Chromium Impurity Effects and Degradation in Solid Oxide Fuel Cells: Role of Thermodynamics and Transport  Srikanth Gopalan, Boston University  FE19 Materials and Approaches for the Mitigation of SOFC Cathode Degradation in SOFC Power Systems Prabhakar Singh, University of Connecticut  FE20 Chromium Sensor for Monitoring Solid Oxide Fuel Cell Systems Jeffrey Fergus, Auburn University  FE21 Highly Selective and Stable Multivariable Gas Sensors for Enhanced Robustness and Reliability of SOFC Operation	IA015 NSF-Sponsored Hydrogen and Fuel Cell Related R&D Carole Read, National Science Foundation  IA008 National Fuel Cell Bus Program Sean Ricketson, Federal Transit Administration  MT008 Hydrogen Energy Systems as a Grid Management Tool Mitch Ewan, Hawaii Natural Energy Institute  IA009 Fuel Cell R&D for Earth and Space Applications Ian Jakupca, NASA  IA010 The Brentwood Station Experience Robin Nixon, National Park Service  IA011 Alternative Fuel Corridor Program Diane Turchetta, Federal Highway Administration  IA012 Hydrogen-Related Activities at EPA Susan Burke, Environmental Protection Agency  IA013 Regional Hydrogen Infrastructure Panel - Session Moderator: Nancy Garland, FCTO Bill Elrick, California Fuel Cell Partnership Pat Valente, Ohio Fuel Cell Coalition		

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### THURSDAY JUNE 14 Poster Presentations, 6:30-8:00 PM Exhibit Halls B & C

	Hydrogen Fuels R&D - Hydrogen Production and Delivery			
H2F01	Hydrogen Production R&D – Sub-Program Overview	FCTO staff, as available		
H2F02	Hydrogen Delivery R&D – Sub-Program Overview	FCTO staff, as available		
PD038	Biomass to Hydrogen (B2H2)	Pin-Ching Maness, NREL		
PD100	700 bar Hydrogen Dispenser Hose Reliability Improvement	Kevin Harrison & Owen Smith, NREL		
PD102	Analysis of Advanced H2 Production Pathways	Brian James, Strategic Analysis, Inc.		
PD108	Hydrogen Compression Application of the Linear Motor Reciprocating Compressor (LMRC)	Eugene Broerman, SwRI		
PD114	Flowing Particle Bed Solar Thermal RedOx Process to Split Water	Alan Weimer, University of Colorado Boulder		
PD116	Wide Bandgap Chalcopyrite Photoelectrodes for Direct Solar Water Splitting	Nicolas Gaillard, University of Hawaii		
PD125	Tandem Particle-Slurry Batch Reactors for Solar Water Splitting	Shane Ardo, University of California, Irvine		
PD129	Novel Hybrid Microbial Electrochemical System for Efficient Hydrogen Generation from Biomass	Hong Liu, Oregon State University		
PD172	Low-cost Magnetocaloric Materials Discovery	Robin Ihnfeldt, GE&R		
HEF01	HEF Student Design Contest Motion+: Amphibious Yacht and Fuel Station	Mathew Chen, et. al. , University of Toronto, University of Florida		
HEF02	HEF Student Design ContestPower-to-Gas: Energy Infrastructure for a Manufacturing Facility in South Western Ontario	Ushnik Mukherjee, University of Waterloo,		
HEF03	HEF Student Design ContestHydrogen for Heat: Utilizing Hydrogen for Long- Term Energy Storage in Northern Climates	Zachary Taie, University of Oregon, Cascades		
	Hydrogen Fuels R&D - Hydrogen Storage			
H2F03	Hydrogen Storage R&D – Sub-Program Overview	FCTO staff, as available		
ST014	Hydrogen Sorbent Measurement Qualification and Characterization	Phil Parilla, NREL		
ST119	High-capacity Hydrogen Storage Systems via Mechanochemistry	Shalabh Gupta, Ames Laboratory		
ST120	Design and Synthesis of Materials with High Capacities for Hydrogen Physisorption	Brent Fultz, California Institute of Technology		
ST134	Investigation of Solid State Hydrides for Autonomous Fuel Cell Vehicles	Patrick Ward, SRNL		
ST135	HySCORE: Technical Activities at NIST	Jacob Tarver, NREL		
ST136	HyMARC Seedling: "Graphene-Wrapped" Complex Hydrides as High-Capacity, Regenerable Hydrogen Storage Materials	Di Jia Liu, ANL		
ST137	HyMARC Seedling: Electrolyte Assisted Hydrogen Storage Reactions	Channing Ahn, Liox Power		
ST140	Emergency Hydrogen Refueler for Individual Consumer Fuel Cell Vehicles	Michael Kimble, Skyhaven Systems		
ST142	HyMARC Seedling: Fluorinated Covalent Organic Frameworks: A Novel Pathway to Enhance Hydrogen Sorption and Control Isosteric Heats of Adsorption	Justin Johnson, NREL		
ST143	HyMARC Seedling: ALD (Atomic Layer Deposition) Synthesis of Novel Nanostructured Metal Borohydrides	Steven Christensen, NREL		
ST144	HyMARC Seedling: Optimized Hydrogen Adsorbents via Machine Learning and Crystal Engineering	Don Siegel, University of Michigan		
ST145	HyMARC Seedling: Super Metallated Frameworks as Hydrogen Sponges	Sophia Steffens, University of California, Berkeley		
ST146	Precursor Processing Development for Low Cost, High Strength Carbon Fiber for Composite Overwrapped Pressure Vessel Applications	Matthew Weisenberger, University of Kentucky		
ST147	Developing a New Polyolefin Precursor for Low-Cost, High-Strength Carbon Fiber	Mike Chung, Penn State University		
ST148	Novel Plasticized Melt Spinning Process of PAN Fibers Based on Task-Specific Ionic Liquids	Sheng Dai, ORNL		

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## THURSDAY JUNE 14 Poster Presentations, 6:30-8:00 PM Exhibit Halls B & C

	Systems Analysis	
SA01	Systems Analysis – Sub-Program Overview	FCTO staff, as available
SA039	Regional Water Stress Analysis with Hydrogen Production at Scale	Amgad Elgowainy, ANL
SA063	Regional Supply of Hydrogen	Michael Penev, NREL
57 10 0 3	H2@Scale CRADA Projects (invited)	initial of the tribution of the tributio
H2001	Scalable Electrolytic Systems for Renewable Hydrogen Production	Guido Bender, NREL
H2004	Tatsuno Coriolis Flow Meter Development Testing in High Pressure Hydrogen	Rob Burgess, NREL
	Membrance Electrode Assembly Manufacturing Automation Technology for the	
H2006	Eelctrochemical Compression of Hydrogen	Michael Ulsh, NREL
H2007	MW-Scale PEM-Based Electrolyzers for RES Applications	Kevin Harrison, NREL
H2011	Risk Analysis and Modeling to Improve Hydrogen Fuel Cell Vehicle Repair Garages	Chris LaFleur, SNL
H2012	Evaluate High Temperature Steam Electrolysis Coupled to PWR/MCFR/TWR for H2 Production and Energy Storage	Jamie Holladay, PNNL
H2013	Development, Validation, and Benchmarking of Quantitative Risk Assessment Tools for Hydrogen Refueling Stations	Chris LaFleur, SNL
H2021	Hydrogen Component Performance Diagnostic Testing	Danny Terlip, NREL
H2022	Develop a Tool to Estimate the Benefits of Tube-Trailer Consolidation Scheme for Station Builders	Amgad Elgowainy, ANL
H2025	Optimizing an Integrated Renewable-Electrolysis System	Josh Eichman, NREL
H2026	Hybrid Electrical/Thermal Hydrogen Production Process Integrated with a Molten Salt Reactor Nuclear Power Plant	Donald Anton, SRNL
H2030	H2 Materials Compatibility of Low Cost, High Pressure, Polymer H2 Dispensing Hoses	Kevin Simmons, PNNL
H2035	Region-Specific Merchant Hydrogen Market Assessment and Techno-Economic Assessment of Electrolytic Hydrogen Generation	Richard Boardman, INL
H2036	Validating an electrolysis system with high output pressure	Michael Peters, NREL
H2039	Turboexpander: Alternative Fueling Concept for Fuel Cell Electric Vehicle Fast Fill	Rob Burgess, NREL
H2041	California Hydrogen Infrastructure Research Consortium	Jennifer Kurtz, NREL
H2045	Methane Pyrolysis for Base-Grown Carbon Nanotubes and CO2-free H2 over Transition Metal Catalysts	Jamie Holladay, PNNL
H2049	Valuation of Hydrogen Technology on the Electric Grid Using Production Cost Modeling	Josh Eichman, NREL
H2050	Holistic Fuel Cell Electric Vehicle / Hydrogen Station Optimization Model	Michael Peters, NREL
H2052	Merchant Hydrogen at Scale: A Technical-Economic Case Study of the Potential for Nuclear Hydrogen Production	Richard Boardman, INL
	Interagency Activities	
IA016	Neutron Imaging Study of the Water Transport in Operating Fuel Cells	David Jacobson, National Institute of Standards and Technology
IA017	Hydrogen from Wastewater Biogas	Nick Josefik, Army Corps of Engineers
IA018	Operational Energy from Seawater	Heather Willauer, Naval Research Laboratory
IA019	Designing a Fuel Cell Watercraft	Dana Wilkes, National Oceanic and Atmospheric Administration
IA021	Chemical Catalysis for Bioenergy (ChemCatBio): Accelerating R&D in Catalytic Conversion of Biomass for Biofuels, Bioproducts, and Biopower	Nichole Fitzgerald and Robert Natelson, DOE Bioenergy Technologies Office
IA022	Conversion of Methane to Hydrogen and Carbon via Catalytic Methane Decomposition	Ranjani Siriwardane, DOE - National Energy Technology Laboratory

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# THURSDAY JUNE 14 Poster Presentations, 6:30-8:00 PM Exhibit Halls B & C

HA014 Basic Science Underpinning Hydrogen and Fuel Cells at DOE  IA020 DOE Advanced Manufacturing Office: What we Do  ARPAE01 Dual Mode Energy Conversion and Storage Flow Battery ARPAE02 Precious Metal Free Regenerative Hydrogen Electrode ARPAE03 Low Temperature NH3 Cracking Membrane Reactor for H2 Refueling Stations  ARPAE04 Protonic Ceramics for Energy Storage and Electricity Generation with Ammonia Hossein Ghezel-Ayagh, Fuel Cel  ARPAE05 Electricity From An Energy-Dense Carbon-Neutral Energy Carrier  Low-Cost Intermediate-Temperature Fuel-Flexible Protonic-Ceramic Fuel Cell and Stack  Ryan O'Hayre, CO School of Min	
ARPAE01 Dual Mode Energy Conversion and Storage Flow Battery  ARPAE02 Precious Metal Free Regenerative Hydrogen Electrode  ARPAE03 Low Temperature NH3 Cracking Membrane Reactor for H2 Refueling Stations  ARPAE04 Protonic Ceramics for Energy Storage and Electricity Generation with Ammonia  ARPAE05 Electricity From An Energy-Dense Carbon-Neutral Energy Carrier  ARPAE06 Low-Cost Intermediate-Temperature Fuel-Flexible Protonic-Ceramic Fuel Cell and Ryan O'Hayre. CO School of Mir	f Basic Energy
ARPAE02 Precious Metal Free Regenerative Hydrogen Electrode  ARPAE03 Low Temperature NH3 Cracking Membrane Reactor for H2 Refueling Stations  ARPAE04 Protonic Ceramics for Energy Storage and Electricity Generation with Ammonia  ARPAE05 Electricity From An Energy-Dense Carbon-Neutral Energy Carrier  ARPAE06 Low-Cost Intermediate-Temperature Fuel-Flexible Protonic-Ceramic Fuel Cell and Ryan O'Hayre. CO School of Mir	Manufacturing Office
ARPAE03 Low Temperature NH3 Cracking Membrane Reactor for H2 Refueling Stations Lin-Feng Li, Bettergy Corp.  ARPAE04 Protonic Ceramics for Energy Storage and Electricity Generation with Ammonia Hossein Ghezel-Ayagh, Fuel Cel  ARPAE05 Electricity From An Energy-Dense Carbon-Neutral Energy Carrier Trent Molter, Sustainable Innov  ARPAE06 Low-Cost Intermediate-Temperature Fuel-Flexible Protonic-Ceramic Fuel Cell and Ryan O'Hayre. CO School of Mir	
ARPAE04 Protonic Ceramics for Energy Storage and Electricity Generation with Ammonia Hossein Ghezel-Ayagh, Fuel Cel  ARPAE05 Electricity From An Energy-Dense Carbon-Neutral Energy Carrier Trent Molter, Sustainable Innov  ARPAE06 Low-Cost Intermediate-Temperature Fuel-Flexible Protonic-Ceramic Fuel Cell and Ryan O'Hayre, CO School of Mir	
ARPAE05 Electricity From An Energy-Dense Carbon-Neutral Energy Carrier Trent Molter, Sustainable Innov  ARPAE06 Low-Cost Intermediate-Temperature Fuel-Flexible Protonic-Ceramic Fuel Cell and Ryan O'Hayre, CO School of Mir	
ARPAE06 Low-Cost Intermediate-Temperature Fuel-Flexible Protonic-Ceramic Fuel Cell and Ryan O'Hayre, CO School of Mir	ll Energy
TARPAEUS T IRVan O Havre. CO School of Mir	vation
	nes
ARPAE07 High-Efficiency Ammonia Production from Water and Nitrogen Hui Xu, Giner	
ARPAE08 High Rate Ammonia Synthesis by Intermediate Temperature Solid-State Alkaline Feng Zhao, Storagenergy	
ARPAE09 Direct Ammonia Fuel Cells for Transport Applications Shimshon Gottesfeld, U. Delwa	are
ARPAE10 AEM electrolyzers: the low cost alternative for renewable hydrogen generation?" Rich Masel, Dioxide Materials	
Fossil Energy – Solid Oxide Fuel Cells Program	
Posters will be displayed but not staffed (See Wednesday for detail)	
Hydrogen Fuels R&D - HydroGEN Seedling Projects	
Posters will be displayed but not staffed (See Wednesday for detail)	

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# **FRIDAY JUNE 15 Oral Presentations**

Time	Fuel Cell R&D Thurgood East/North	Hydrogen Fuel R&D Thurgood South/West		
7:30 AM	Continental Breakfast - Atriur	m & Thurgood Marshall Foyers		
8:30 AM	FC017 Fuel Cell System Modeling and Analysis Rajesh Ahluwalia, ANL	ST128 HyMARC: SNL Technical Activities Vitalie Stavila, SNL		
9:00 AM	FC163 Fuel Cell Systems Analysis Brian James, Strategic Analysis, Inc.	ST131 HySCORE: NREL Technical Activities Thomas Gennett, NREL		
9:30 AM	FC146 Advanced Materials for Fully- Integrated MEAs in AEMFCs Yu Seung Kim, LANL	ST133 HySCORE: LBNL Technical Activities Jeffrey Long, LBNL		
10:00 AM	FC147 Advanced Ionomers & MEAs for Alkaline Membrane Fuel Cells Bryan Pivovar, NREL	ST132 HySCORE: PNNL Technical Activities Tom Autrey, PNNL		
10:30 AM	Break - Atrium & Thu	rgood Marshall Foyers		
11:00 AM	FC174 Highly Efficient and Durable Cathode Catalyst with Ultralow Pt Loading through Synergetic Pt/PGM-Free Catalytic Interaction Di-Jia Liu, ANL	ST138 HyMARC Seedling: Development of Magnesium Boride Etherates as Hydrogen Storage Materials Godwin Severa, University of Hawaii		
11:30 AM	FC175 Polymer-based Fuel Cells that Operate from 80-220 C Yu Seung Kim, LANL	ST122 Hydrogen Adsorbents with High Volumetric Density: New Materials and System Projections Don Siegel, University of Michigan		
12:00 PM	MN016 In-line Quality Control of PEM Materials Paul Yelvington, Mainstream	ST008 Hydrogen Storage System Modeling: Public Access, Maintenance, and Enhancements David Tamburello, SRNL		

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## **FRIDAY JUNE 15 Oral Presentations**

Time	H2@Scale & Technology Acceleration Lincoln 6	FE-SOFC Lincoln 5
7:30 AM	Continental Breakfast - At	rium & Thurgood Marshall Foyers
8:30 AM	SA044 Cost Benefits Analysis of Technology Improvement in Light Duty Fuel Cell Vehicles Aymeric Rousseau, ANL	FE22 System Analysis of Fuel Cell Plant Configurations Gregory Hackett, National Energy Technology Laboratory
9:00 AM	MT021 Northeast Demonstration and Deployment of FCRx200 Abas Goodarzi, US Hybrid	FE23 Durable, Impermeable Solid Oxide Fuel Cell Brazes Jason Nicholas, Michigan State University
9:30 AM	SCS001 National Codes and Standards Deployment and Outreach Carl Rivkin, NREL	FE24 Development of Chromium and Sulfur Getter for Solid Oxide Fuel Cell (SOFC) Systems Prabhakar Singh, University of Connecticut
10:00 AM	SCS019 Hydrogen Safety Panel, Safety Knowledge Tools and First Responder Training Resources Nick Barilo, PNNL	FE25 Effects of Composition and Operating Conditions on the Microstructure and Performance of LSM-Based SOFC Cathodes Mark DeGuire, Case Western Reserve University
10:30 AM	Break - Atrium & <sup>-</sup>	Thurgood Marshall Foyers
11:00 AM	TV008 Fuel Cell Bus Evaluations Leslie Eudy, NREL	FE26 High Temperature Anode Recycle Blower for Solid Oxide Fuel Cell Jose Luis Cordova, Mohawk Innovative Technology, Inc.
11:30 AM	MT017 FedEx Express Hydrogen Fuel Cell Extended-Range Battery Electric Vehicles Phillip Galbach, FedEx Express	FE27 Minimizing Cr-Evaporation from Balance of Plant Components by Utilizing Cost-Effective Alumina- Forming Austenitic Steels Xingbo Liu, West Virginia University Research Corporation
12:00 PM	TV034 Fuel Cell Hybrid Electric Delivery Van Jason Hanlin, Center for Transportation and the Environment	
12:30 PM	HEF01 HEF Student Design Contest Motion+: Amphibious Yacht and Fuel Station Matthew Chen, et. al., University of Toronto and University of Florida	

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#### **Alphabetical List of Presenters**

		Alphabetical List of Presenters							
Presenter Last	Presenter First	Presenter Organization	Day/Time	Project ID	Session	Room			
Aceves	Salvador	LLNL	6/13 6:30 PM	TV029	Poster	Exhibit Halls B&C			
Ahluwalia	Rajesh	ANL	6/14 2:45 PM	ST001	Hydrogen Fuel R&D	Thurgood South/West			
Ahluwalia	Rajesh	ANL	6/15 8:30 AM	FC017	Fuel Cell R&D	Thurgood East/North			
Ahn	Channing	Liox Power	6/14 6:30 PM	ST137	Poster	Exhibit Halls B&C			
Alia	Shaun	NREL	6/13 6:30 PM	TV146	Poster	Exhibit Halls B&C			
Alia	Shaun	NREL	6/14 2:45 PM	FC142	Fuel Cell R&D	Thurgood East/North			
Allendorf	Mark	SNL	6/14 4:15 PM	PD025	H2@Scale & Technology  Acceleration	Lincoln 6			
Anton	Donald	SRNL	6/14 6:30 PM	H2026	Poster	Exhibit Halls B&C			
Ardo	Shane	University of California, Irvine	6/14 6:30 PM	PD125	Poster	Exhibit Halls B&C			
Autrey	Tom	PNNL	6/15 10:00 AM	ST132	Hydrogen Fuel R&D	Thurgood South/West			
Ayers	Kathy	Proton OnSite	6/13 5:45 PM	PD170	Hydrogen Fuel R&D	Thurgood South/West			
Ayers	Kathy	Proton OnSite	6/13 6:30 PM	PD155	Poster	Exhibit Halls B&C			
Barilo	Nick	PNNL	6/15 10:00 AM	SCS019	H2@Scale & Technology  Acceleration	Lincoln 6			
Barnett	Scott	Northwestern University	6/13 6:30 PM	PD153	Poster	Exhibit Halls B&C			
Baronas	Jean	California Energy Commission	6/14 9:30 AM	IA002	Interagency Activities	Lincoln 3-4			
Basu	Soumendra	Boston University	6/14 9:00 AM	FE8	FE – Solid Oxide Fuel Cells Program	Lincoln 5			
Bender	Guido	NREL	6/13 3:45 PM	PD148A	Hydrogen Fuel R&D	Thurgood South/West			
Bender	Guido	NREL	6/14 6:30 PM	H2001	Poster	Exhibit Halls B&C			
Berry	Naveen	South Coast Air Quality Management District	6/14 9:30 AM	IA002	Interagency Activities	Lincoln 3-4			
Bishop	Sean	Redox Power Systems	6/13 6:30 PM	FE053-p	Poster	Exhibit Halls B&C			
Bishop	Sean	Redox Power Systems	6/14 2:45 PM	FE16	FE – Solid Oxide Fuel Cells Program	Lincoln 5			
Blackburn	Bryan	Redox Power Systems	6/14 2:45 PM	FE16	FE – Solid Oxide Fuel Cells Program	Lincoln 5			
Boardman	Richard	INL	6/13 4:15 PM	PD148B	Hydrogen Fuel R&D	Thurgood South/West			
Boardman	Richard	INL	6/14 9:00 AM	TV040	H2@Scale & Technology Acceleration	Lincoln 6			
Boardman	Richard	INL	6/14 6:30 PM	H2035	Poster	Exhibit Halls B&C			
Boardman	Richard	INL	6/14 6:30 PM	H2052	Poster	Exhibit Halls B&C			
Borup	Rod	LANL	6/14 8:30 AM	FC135	Fuel Cell R&D	Thurgood East/North			
Broerman	Eugene	SwRI	6/14 6:30 PM	PD108	Poster	Exhibit Halls B&C			
Brooks	Kriston	PNNL	6/13 6:30 PM	MT014	Poster	Exhibit Halls B&C			
Brouwer	Jack	University of California, Irvine	6/14 2:15 PM	IA007	Interagency Activities	Lincoln 3-4			
Burgess	Carroll	U.S. Postal Service	6/14 11:00 AM	IA003	Interagency Activities	Lincoln 3-4			
Burgess	Rob	NREL	6/14 6:30 PM	H2004	Poster	Exhibit Halls B&C			
Burgess	Rob	NREL	6/14 6:30 PM	H2039	Poster	Exhibit Halls B&C			
Burke	Susan	Environmental Protection Agency	6/14 5:00 PM	IA012	Interagency Activities	Lincoln 3-4			
Buttner	William	NREL	6/13 6:30 PM	SCS021	Poster	Exhibit Halls B&C			
Capuano	Chris	Proton OnSite	6/14 6:30 PM	ARPAE01	Poster	Exhibit Halls B&C			
Capacilo	Citis	Naval Undersea Warfare	•		roster				
Carreiro	Louis	Center Division Newport	6/13 6:30 PM	FE067-p	Poster	Exhibit Halls B&C			
Cheekatamarla	Praveen	Atrex energy	6/14 3:15 PM	FE17	FE – Solid Oxide Fuel Cells Program	Lincoln 5			
Chen	Kevin	University of Pittsburgh	6/13 6:30 PM	FE051-p	Poster	Exhibit Halls B&C			
Chen	Fanglin (Frank)	University of South Carolina	6/13 6:30 PM	FE052-p	Poster	Exhibit Halls B&C			
Chou	Matt	Pacific Northwest National Laboratory	6/13 6:30 PM	FE079-p	Poster	Exhibit Halls B&C			
Chou	Matt	Pacific Northwest National Laboratory	6/13 6:30 PM	FE080-p	Poster	Exhibit Halls B&C			
Christensen	Steven	NREL	6/14 6:30 PM	ST143	Poster	Exhibit Halls B&C			
Chueh	William	SLAC National Accelerator Laboratory/Stanford	6/13 6:30 PM	SLAC	Poster	Exhibit Halls B&C			
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Presenter LastPresenter FirstPresenter OrganizationDay/TimeProject IDSessionRoomChungHoonLANL6/13 6:30 PMPD158PosterExhibit Halls B&CChungMikePenn State University6/14 6:30 PMST147PosterExhibit Halls B&CConnellyElizabethNREL6/13 4:15 PMSA059H2@Scale & Technology AccelerationLincoln 6	
Chung Mike Penn State University 6/14 6:30 PM ST147 Poster Exhibit Halls B&C Connelly Elizabeth NREL 6/13 4:15 PM SA059 H2@Scale & Technology Acceleration Lincoln 6	
Connelly Elizabeth NREL 6/13 4:15 PM SA059 H2@Scale & Technology Acceleration Lincoln 6	
Connelly Elizabeth NREL 6/13 4:15 PM SAU59 Lincoln 6 Acceleration	
Cordova Jose Luis Mohawk Innovative 6/15 11:00 AM FE26 FE – Solid Oxide Fuel Cells Lincoln 5 Program	
Corgnale Claudio Greenway Energy 6/13 6:30 PM PD169 Poster Exhibit Halls B&C	
Corgnale Claudio Greenway Energy, Inc. 6/14 9:00 AM PD137 Hydrogen Fuel R&D Thurgood South/V	Vest
Dai Sheng ORNL 6/14 6:30 PM ST148 Poster Exhibit Halls B&C	
Damle Ashok Techverse, Inc. 6/13 6:30 PM FC189 Poster Exhibit Halls B&C	
Daniel Claus ORNL 6/14 10:00 AM MN018 H2@Scale & Technology Acceleration Lincoln 6	
Danilovic Nem LBNL 6/13 6:30 PM FC183 Poster Exhibit Halls B&C	
Darling Ruthanne Office of the Secretary of Defense 6/14 8:30 AM IA001 Interagency Activities Lincoln 3-4	
Case Western Reserve De Guire Mark 6/13 6:30 PM FE057-p Poster Exhibit Halls B&C	
University	
DeBellis Cris LG Fuel cell System 6/13 3:45 PM FE2 FE – Solid Oxide Fuel Cells Program Lincoln 5	
DeBellis Crispin LG Fuel Cell Systems, Inc. 6/13 6:30 PM FE064-p Poster Exhibit Halls B&C	
De Castro Emory Advent Technologies, Inc. 6/13 6:30 PM FC128 Poster Exhibit Halls B&C	
DeGuire Mark Case Western Reserve University 6/15 10:00 AM FE25 FE - Solid Oxide Fuel Cells Program Lincoln 5	
Denver Jessie City and County of San 6/13 6:30 PM SCS030 Poster Exhibit Halls B&C Francisco	
Deutsch Todd NREL 6/13 6:30 PM FC182 Poster Exhibit Halls B&C	
Dinh Huyen NREL 6/13 3:15 PM PD148 Hydrogen Fuel R&D Thurgood South/V	Vest
Dismukes Charles Rutgers University 6/13 6:30 PM PD160 Poster Exhibit Halls B&C	
Dogdibegovic Emir Lawrence Berkeley National Laboratory 6/13 6:30 PM FE073-p Poster Exhibit Halls B&C	
Dosanjh Bal Ceres Power 6/14 1:45 PM FE14 FE - Solid Oxide Fuel Cells Program Lincoln 5	
Driscoll David Glacigen Materials, Inc. 6/13 6:30 PM FC190 Poster Exhibit Halls B&C	
Driscoll David Glacigen Materials, Inc. 6/13 6:30 PM FE070-p Poster Exhibit Halls B&C	
Drotleff Kari U.S. Army TARDEC 6/14 11:30 AM IA004 Interagency Activities Lincoln 3-4	
Ehrhart Brian NREL/SNL 6/13 6:30 PM TV148 Poster Exhibit Halls B&C	
Eichman Josh NREL 6/14 6:30 PM H2025 Poster Exhibit Halls B&C	
Eichman Josh NREL 6/14 6:30 PM H2049 Poster Exhibit Halls B&C	
Elgowainy Amgad ANL 6/14 6:30 PM H2022 Poster Exhibit Halls B&C	
Elgowainy Amgad ANL 6/14 11:30 AM SA170 H2@Scale & Technology Acceleration Lincoln 6	
Elgowainy Amgad ANL 6/14 6:30 PM SA039 Poster Exhibit Halls B&C	
Elrick Bill California Fuel Cell Partnership 6/14 5:15 PM IA013 Interagency Activities Lincoln 3-4	
Ennis Brandon E&G Associates, Inc. 6/13 6:30 PM ST151 Poster Exhibit Halls B&C	
Eudy Leslie NREL 6/15 11:00 AM TV008 H2@Scale & Technology Acceleration Lincoln 6	
Ewan Mitch Hawaii Natural Energy 6/14 3:15 PM MT008 Interagency Activities Lincoln 3-4	
Fergus Jeffrey Auburn University 6/14 5:15 PM FE20 FE – Solid Oxide Fuel Cells Program  FE – Solid Oxide Fuel Cells Program  Lincoln 5	
Fitzgerald Nichole DOE Bioenergy Technologies Office 6/14 6:30 PM IA020 Poster Exhibit Halls B&C	
Fultz Brent California Institute of Technology 6/14 6:30 PM ST120 Poster Exhibit Halls B&C	
Gaillard Nicolas University of Hawaii at Manoa 6/13 6:30 PM PD162 Poster Exhibit Halls B&C	
Gaillard Nicolas University of Hawaii 6/14 6:30 PM PD116 Poster Exhibit Halls B&C	
Galbach Phillip FedEx Express 6/15 11:30 AM MT017 H2@Scale & Technology Acceleration Lincoln 6	
Ganesan Prabhu Greenway Energy, LLC 6/13 5:45 PM FC173 Fuel Cell R&D Thurgood East/No	rth

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Presenter Last	Presenter First	Presenter Organization	Day/Time	Project ID	Session	Room
Gennett	Tom	NREL	6/14 4:15 PM	ST127	Hydrogen Fuel R&D	Thurgood South/West
Gennett	Thomas	NREL	6/15 9:00 AM	ST127	Hydrogen Fuel R&D	Thurgood South/West
	momas		,		FE – Solid Oxide Fuel Cells	margood Sodiny West
Ghezel-Ayagh	Hossein	FuelCell Energy	6/13 3:15 PM	FE1	Program	Lincoln 5
					H2@Scale & Technology	
Ghezel-Ayagh	Hossein	FuelCell Energy	6/13 5:45 PM	TV041	Acceleration	Lincoln 6
Ghezel-Ayagh	Hossein	FuelCell Energy	6/14 6:30 PM	ARPAE04	Poster	Exhibit Halls B&C
, -					H2@Scale & Technology	
Goodarzi	Abas	US Hybrid	6/15 9:00 AM	MT021	Acceleration	Lincoln 6
Gopalan	Srikanth	Boston University	6/13 6:30 PM	FE061-p	Poster	Exhibit Halls B&C
Conslan	Srikanth	Paston University	6/14 4:15 PM	EE10	FE – Solid Oxide Fuel Cells	Lincoln 5
Gopalan	SHRAHUH	Boston University	6/14 4.15 PIVI	FE18	Program	LITICOTTI 5
Gordon	Bryan	lvys Inc.	6/14 10:00 AM	PD146	Hydrogen Fuel R&D	Thurgood South/West
Gorte	Raymond	University of Pennsylvania	6/13 6:30 PM	FE063-p	Poster	Exhibit Halls B&C
Gottesfeld	Shimshon	University of Delaware	6/14 6:30 PM	ARPAE09	Poster	Exhibit Halls B&C
Gu	Taoli	Xergy	6/13 6:30 PM	PD173	Poster	Exhibit Halls B&C
Gupta	Shalabh	Ames Laboratory	6/14 6:30 PM	ST119	Poster	Exhibit Halls B&C
Hackett	Gregory	National Energy Technology	6/13 4:15 PM	FE3	FE – Solid Oxide Fuel Cells	Lincoln 5
Hackett	dicgory	Laboratory	0/13 4.13 1 101	1123	Program	LITICOTT 5
Hackett	Gregory	National Energy Technology	6/15 8:30 AM	FE22	FE – Solid Oxide Fuel Cells	Lincoln 5
Hackett	dicgory	Laboratory	0/13 0.30 AIVI	1 LZZ	Program	LITICOTT 5
Hackett	Gregory	National Energy Technology	6/13 6:30 PM	FE074-p	Poster	Exhibit Halls B&C
Hackett	dicgory	Laboratory	0/13 0.30 1 101	1 LO7 4 P	i ostei	Exhibit Halls D&C
Hackett	Gregory	National Energy Technology	6/13 6:30 PM	FE075-p	Poster	Exhibit Halls B&C
Hackett	Gregory	Laboratory	0, 13 0.30 1 141	1 L07 5 P	1 03121	Exhibit Halls bac
Hamdan	Monjid	Giner ELX, Inc.	6/14 8:30 AM	PD136	Hydrogen Fuel R&D	Thurgood South/West
Hanlin	Jason	Center for Transportation and	6/15 12:00 PM	TV034	H2@Scale & Technology	Lincoln 6
	303011	the Environment	0,13 12.00 1 111	11051	Acceleration	Lincoln o
Hardy	John	Pacific Northwest National	6/13 6:30 PM	FE082-p	Poster	Exhibit Halls B&C
riara y	301111	Laboratory	0, 13 0.30 i iii	1 2002 p	1 03101	Exhibit Halls bac
Hardy	John	Pacific Northwest National	6/13 6:30 PM	FE083-p	Poster	Exhibit Halls B&C
Haray	301111	Laboratory	0, 13 0.30 1 141	1 2003 p	1 03121	Exhibit Halls bac
Harned	Alleyn	Virginia Clean Cities at JMU	6/13 6:30 PM	MN013	Poster	Exhibit Halls B&C
Harrison	William	Nanosonic, Inc.	6/13 6:30 PM	FC176	Poster	Exhibit Halls B&C
Harrison	Kevin	NREL	6/14 6:30 PM	H2007	Poster	Exhibit Halls B&C
Harrison	Kevin	NREL	6/14 6:30 PM	PD100	Poster	Exhibit Halls B&C
Hart	Richard	General Electric Company	6/14 12:00 PM	FE13	FE – Solid Oxide Fuel Cells	Lincoln 5
Tiurt	Menara	• •	,		Program	
Haug	Andrew	3M	6/14 10:00 AM	FC155	Fuel Cell R&D	Thurgood East/North
Hecht	Ethan	SNL	6/14 2:45 PM	SCS010	H2@Scale & Technology	Lincoln 6
			0, 2 : 2 :	000010	Acceleration	
Heshmat	Hooshang	Mohawk Innovative	6/13 6:30 PM	FE066-p	Poster	Exhibit Halls B&C
		Technology, Inc	0, 20 0.00	. 2000 р		2
Holladay	Jamie	PNNL	6/14 1:45 PM	PD131	H2@Scale & Technology	Lincoln 6
•					Acceleration	
Holladay	Jamie	PNNL	6/14 6:30 PM	H2012	Poster	Exhibit Halls B&C
Holladay	Jamie	PNNL	6/14 6:30 PM	H2045	Poster	Exhibit Halls B&C
Hovsapian	Rob	INL	6/13 4:45 PM	TV031	H2@Scale & Technology	Lincoln 6
•			•		Acceleration	
Hunter	Chad	NREL	6/14 5:45 PM	SA169	H2@Scale & Technology	Lincoln 6
					Acceleration	
Ihnfeldt	Robin	GE&R	6/14 6:30 PM	PD172	Poster	Exhibit Halls B&C
Ingram	Brian	Argonne National Laboratory	6/13 5:45 PM	FE6	FE – Solid Oxide Fuel Cells	Lincoln 5
· ·			,		Program	
Jacobson	David	National Institute of Standards	6/14 6:30 PM	IA016	Poster	Exhibit Halls B&C
		and Technology	,			
Jakupca	lan	NASA	6/14 4:15 PM	IA009	Interagency Activities	Lincoln 3-4
James	Brian	Strategic Analysis, Inc.	6/14 3:15 PM	ST100	Hydrogen Fuel R&D	Thurgood South/West
James	Brian	Strategic Analysis, Inc.	6/14 6:30 PM	PD102	Poster	Exhibit Halls B&C
James	Brian	Strategic Analysis, Inc.	6/15 9:00 AM	FC163	Fuel Cell R&D	Thurgood East/North
Jaramillo	Thomas	Stanford University	6/13 6:30 PM	PD161	Poster	Exhibit Halls B&C

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Presenter Last	Presenter First	Presenter Organization	Day/Time	Project ID	Session	Room
Johnson	Terry	SNL	6/14 9:30 AM	PD138	Hydrogen Fuel R&D	Thurgood South/West
Johnson	Justin	NREL	6/14 6:30 PM	ST142	Poster	Exhibit Halls B&C
Josefik	Nick	Army Corps of Engineers	6/14 6:30 PM	IA017	Poster	Exhibit Halls B&C
Kim	Yu Seung	LANL	6/13 6:30 PM	PD159	Poster	Exhibit Halls B&C
Kim	Yu Seung	LANL	6/15 9:30 AM	FC146	Fuel Cell R&D	Thurgood East/North
Kim	Yu Seung	LANL	6/15 11:30 AM	FC175	Fuel Cell R&D	Thurgood East/North
Kimball	Brett	Automated Dynamics	6/14 4:45 PM	MN015	H2@Scale & Technology	Lincoln 6
Kimble	Michael	Skyhaven Systems	6/14 6:30 PM	ST140	Acceleration Poster	Exhibit Halls B&C
Klebanoff	Lennie	SNL	6/14 1:45 PM	MT013	Interagency Activities	Lincoln 3-4
Koeppel	Brian	Pacific Northwest National Laboratory	6/13 6:30 PM	FE076-p	Poster	Exhibit Halls B&C
Kongkanand	Anusorn	General Motors	6/14 4:15 PM	FC144	Fuel Cell R&D	Thurgood East/North
Kort	Kenneth	DOE Advanced Manufacturing Office	6/14 6:30 PM	IA020	Poster	Exhibit Halls B&C
Kreller	Cortney	LANL	6/13 6:30 PM	FC180	Poster	Exhibit Halls B&C
Kumaraguru	Swami	General Motors	6/14 11:00 AM	FC156	Fuel Cell R&D	Thurgood East/North
Kurtz	Jennifer	NREL	6/14 6:30 PM	H2041	Poster	Exhibit Halls B&C
LaFleur	Chris	SNL	6/14 6:30 PM	H2011	Poster	Exhibit Halls B&C
LaFleur	Chris	SNL	6/14 6:30 PM	H2013	Poster	Exhibit Halls B&C
Lalli	Jennifer	NanoSonic	6/14 11:30 AM	PD149	Hydrogen Fuel R&D	Thurgood South/West
Lang	Christopher	Physical Sciences Inc.	6/13 6:30 PM	FC191	Poster	Exhibit Halls B&C
Lara-Curzio	Edgar	Oak Ridge National Laboratory	•	FE5	FE – Solid Oxide Fuel Cells	Lincoln 5
1	Cl	C'ara la a	C/42 C 20 DN4	FC4.03	Program	5 kiki uslis B0.6
Lei	Chao	Giner, Inc.	6/13 6:30 PM	FC193	Poster	Exhibit Halls B&C
LI	Lin-Feng	Bettergy Corp.	6/14 6:30 PM	ARPAE03	Poster	Exhibit Halls B&C
Litster	Shawn	Carnegie Mellon University	6/13 4:45 PM	FC171	Fuel Cell R&D	Thurgood East/North
Liu	Gao	LBNL	6/13 6:30 PM	FC179	Poster	Exhibit Halls B&C
Liu	Meilin	Georgia Institute of Technology	6/13 6:30 PM	FE054-p	Poster	Exhibit Halls B&C
Liu	Jian	PolarOnyx, Inc	6/13 6:30 PM	FE069-p	Poster	Exhibit Halls B&C
Liu	Di-Jia	ANL	6/13 6:30 PM	PD157	Poster	Exhibit Halls B&C
Liu	Xingbo	West Virginia University Research Corporation	6/14 11:30 AM	FE12	FE – Solid Oxide Fuel Cells Program	Lincoln 5
Liu	Hong	Oregon State University	6/14 6:30 PM	PD129	Poster	Exhibit Halls B&C
Liu	Di Jia	ANL	6/14 6:30 PM	ST136	Poster	Exhibit Halls B&C
Liu	Di-Jia	ANL	6/15 11:00 AM	FC174	Fuel Cell R&D	Thurgood East/North
Liu	21 314	West Virginia University	0,13 11.00 / 11.1	10171	FE – Solid Oxide Fuel Cells	margood Edsty North
Liu	Xingbo	Research Corporation	6/15 11:30 AM	FE27	Program	Lincoln 5
Lohse-Busch	Henning	ANL	6/13 6:30 PM	TV149	Poster	Exhibit Halls B&C
Lohse-Busch	Henning	ANL	6/13 6:30 PM	TV149	Poster	Exhibit Halls B&C
Long	Jeffrey	LBNL	6/15 9:30 AM	ST133	Hydrogen Fuel R&D	Thurgood South/West
Lousenberg	Robert	Compact Membrane Systems	6/13 6:30 PM	FC184	Poster	Exhibit Halls B&C
Maness	Pin-Ching	NREL	6/14 6:30 PM	PD038	Poster	Exhibit Halls B&C
Martinez	Andrew	California Air Resources Board	,	IA002	Interagency Activities	Lincoln 3-4
Masel	Rich	Dioxide Materials	6/14 6:30 PM	ARPAE10	Poster	Exhibit Halls B&C
Matter	Paul	pH Matter LLC	6/13 6:30 PM	FC154	Poster	Exhibit Halls B&C
Mauger	Scott	NREL	6/13 6:30 PM	MN019	Poster	Exhibit Halls B&C
Mayyas	Ahmad	NREL	6/13 6:30 PM	MN017	Poster	Exhibit Halls B&C
McDaniel	Anthony	SNL	6/13 5:15 PM	PD148D	Hydrogen Fuel R&D	Thurgood South/West
Mi	Zetian	University of Michigan University of California,	6/13 6:30 PM	PD163	Poster FE – Solid Oxide Fuel Cells	Exhibit Halls B&C
Minh	Nguyen	SanDiego	6/14 2:15 PM	FE15	Program	Lincoln 5
Mohite	Aditya	LANL Hawaii Center For Advanced	6/13 6:30 PM	PD164	Poster	Exhibit Halls B&C
Molinaro	Dave	Transportation Technologies	6/14 12:15 PM	IA006	Interagency Activities	Lincoln 3-4
Molter	Trent	Sustainable Innovations	6/13 6:30 PM	PD174	Poster	Exhibit Halls B&C
Molter	Trent	Sustainable Innovations	6/14 6:30 PM	ARPAE05	Poster	Exhibit Halls B&C
Morgan	Brad	Tetramer Technologies LLC	6/13 6:30 PM	FC186	Poster	Exhibit Halls B&C

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Morgan	Jason	AvCarb Material Solutions, LLC	6/13 6:30 PM	FC187	Poster	Exhibit Halls B&C
Morris	William	NuMat Technologies	6/13 6:30 PM	ST149	Poster	Exhibit Halls B&C
Mukerjee	Sanjeev	Northeastern University	6/13 6:30 PM	PD156	Poster	Exhibit Halls B&C
Muna	Alice	SNL	6/13 6:30 PM	SCS011	Poster	Exhibit Halls B&C
Muna	Alice	SNL	6/14 2:15 PM	SCS025	H2@Scale & Technology Acceleration	Lincoln 6
Musgrave	Charles	University of Colorado - Boulder	6/13 6:30 PM	PD166	Poster	Exhibit Halls B&C
Myers	Deborah	ANL	6/13 3:15 PM	FC160	Fuel Cell R&D	Thurgood East/North
Natelson	Robert	DOE Bioenergy Technologies Office	6/14 6:30 PM	IA021	Poster	Exhibit Halls B&C
Nicholas	Jason	Michigan State University	6/13 6:30 PM	FE058-p	Poster	Exhibit Halls B&C
Nicholas	Jason	Michigan State University	6/15 9:00 AM	FE23	FE – Solid Oxide Fuel Cells Program	Lincoln 5
Nicollet	Clement	Massachusetts Institute of Technology	6/14 11:00 AM	FE11	FE – Solid Oxide Fuel Cells Program	Lincoln 5
Nixon	Robin	National Park Service	6/14 4:30 PM	IA010	Interagency Activities	Lincoln 3-4
Ocampo	Minette	pH Matter, LLC	6/13 6:30 PM	FC188	Poster	Exhibit Halls B&C
O'Connell	Daniel	American Fuel Cell	6/13 6:30 PM	FC177	Poster	Exhibit Halls B&C
O'Hayre	Ryan	Colorado School of Mines	6/13 6:30 PM	PD165	Poster	Exhibit Halls B&C
O'Hayre	Ryan	Colorado School of Mines	6/14 6:30 PM	ARPAE06	Poster	Exhibit Halls B&C
Onorato	Shaun	NREL	6/13 6:30 PM	TV001	Poster	Exhibit Halls B&C
			•	PD150		
O'Shaughnessy	Shannan	GVD	6/14 12:00 PM		Hydrogen Fuel R&D	Thurgood South/West
Pal	Uday	Boston University	6/13 6:30 PM	FE062-p	Poster	Exhibit Halls B&C
Pandey	Amit	LG Fuel Cell Systems, Inc.	6/13 6:30 PM	FE065-p	Poster	Exhibit Halls B&C
Parilla	Phil	NREL	6/14 6:30 PM	ST014	Poster	Exhibit Halls B&C
Penev	Michael	NREL	6/14 6:30 PM	SA063	Poster	Exhibit Halls B&C
Perry	Mike	UTRC	6/14 11:30 AM	FC157	Fuel Cell R&D	Thurgood East/North
Peters	Michael	NREL	6/14 11:00 AM	PD140	Hydrogen Fuel R&D	Thurgood South/West
Peters	Michael	NREL	6/14 6:30 PM	H2036	Poster	Exhibit Halls B&C
Peters	Michael	NREL	6/14 6:30 PM	H2050	Poster	Exhibit Halls B&C
Petitpas	Guillaume	LLNL	6/14 12:00 PM	PD135	H2@Scale & Technology Acceleration	Lincoln 6
Pietras	John	Saint-Gobain	6/13 6:30 PM	FE050-p	Poster	Exhibit Halls B&C
Pintauro	Peter	Vanderbilt University	6/14 12:00 PM	FC158	Fuel Cell R&D	Thurgood East/North
Pitts	Larry	Plug Power	6/13 6:30 PM	MT011	Poster	Exhibit Halls B&C
Pivovar	Bryan	NREL	6/13 3:15 PM	H2000	H2@Scale & Technology Acceleration	Lincoln 6
Pivovar	Bryan	NREL	6/13 6:30 PM	FC178	Poster	Exhibit Halls B&C
Pivovar	Bryan	NREL	6/15 10:00 AM	FC147	Fuel Cell R&D	Thurgood East/North
Potyrailo	Radislav	General Electric Company	6/14 5:45 PM	FE21	FE – Solid Oxide Fuel Cells Program	Lincoln 5
Prendergast	David	LBNL	6/14 5:45 PM	ST130	Hydrogen Fuel R&D	Thurgood South/West
Pyung Choi	Jung	Pacific Northwest National Laboratory	6/13 6:30 PM	FE081-p	Poster	Exhibit Halls B&C
Quong	Spencer	Electricore	6/13 6:30 PM	TV039	Poster	Exhibit Halls B&C
Radousky	Harry	Lawrence Livermore National Laboratory	6/13 6:30 PM	FE071-p	Poster	Exhibit Halls B&C
Ramani	Vijay	Washington University	6/14 4:45 PM	FC145	Fuel Cell R&D	Thurgood East/North
Read	Carole	National Science Foundation	6/14 2:30 PM	IA015	Interagency Activities	Lincoln 3-4
Recknagle	Kurtis	Pacific Northwest National Laboratory	6/13 6:30 PM	FE077-p	Poster	Exhibit Halls B&C
Ricketson	Sean	Federal Transit Administration	6/14 2:45 PM	IA008	Interagency Activities	Lincoln 3-4
Rinebold	Joel	Connecticut Center for Advanced Technology	6/14 5:15 PM	IA013	Interagency Activities	Lincoln 3-4
Rivkin	Carl	NREL	6/15 9:30 AM	SCS001	H2@Scale & Technology Acceleration	Lincoln 6
Rockward	Tommy	LANL	6/14 5:15 PM	SCS007	H2@Scale & Technology Acceleration	Lincoln 6

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Roeder	Jeffrey	Sonata LLC	6/13 6:30 PM	FE084-p	Poster	Exhibit Halls B&C
Roeder	Jeffrey	Sonata LLC	6/13 6:30 PM	FE085-p	Poster	Exhibit Halls B&C
Rogers	Paul	U.S. Army TARDEC	6/14 8:30 AM	IA001	Interagency Activities	Lincoln 3-4
Ronevich	Joe	SNL	6/14 4:15 PM	PD025	H2@Scale & Technology Acceleration	Lincoln 6
Rousseau	Aymeric	ANL	6/15 8:30 AM	SA044	H2@Scale & Technology Acceleration	Lincoln 6
Ruth	Mark	NREL	6/13 3:15 PM	H2000	H2@Scale & Technology Acceleration	Lincoln 6
Ruth	Mark	NREL	6/13 3:45 PM	TV045	H2@Scale & Technology Acceleration	Lincoln 6
San Marchi	Chris	SNL	6/13 6:30 PM	SCS005	Poster	Exhibit Halls B&C
Satyapal	Sunita	DOE Fuel Cell Technologies Office	6/14 8:30 AM	IA001	Interagency Activities	Lincoln 3-4
Saur	Genevieve	NREL	6/14 8:30 AM	TV042	H2@Scale & Technology Acceleration	Lincoln 6
Sbrockey	Nick	Structured Materials Industries, Inc	6/13 6:30 PM	FE068-p	Poster	Exhibit Halls B&C
Schwartz	Viviane	DOE Office of Basic Energy Sciences	6/14 6:30 PM	IA014	Poster	Exhibit Halls B&C
Severa	Godwin	University of Hawaii	6/15 11:00 AM	ST138	Hydrogen Fuel R&D	Thurgood South/West
Shao	Yuyan	PNNL	6/13 5:15 PM	FC172	Fuel Cell R&D	Thurgood East/North
Shyne	Rickey	NASA	6/14 8:30 AM	IA001	Interagency Activities	Lincoln 3-4
Siegel	Don	University of Michigan	6/14 6:30 PM	ST144	Poster	Exhibit Halls B&C
Siegel	Don	University of Michigan	6/15 11:30 AM	ST122	Hydrogen Fuel R&D	Thurgood South/West
Simmons	Kevin	PNNL	6/14 3:15 PM	SCS026	H2@Scale & Technology Acceleration	Lincoln 6
Simmons	Kevin	PNNL	6/14 6:30 PM	H2030	Poster	Exhibit Halls B&C
	Prabhakar	University of Connecticut	6/13 6:30 PM	FE060-p	Poster	Exhibit Halls B&C
Singh			•	•		
Singh	Prabhakar	University of Connecticut	6/13 6:30 PM	PD152	Poster	Exhibit Halls B&C
Singh	Prabhakar	University of Connecticut	6/14 4:45 PM	FE19	FE – Solid Oxide Fuel Cells Program	Lincoln 5
Singh	Prabhakar	University of Connecticut	6/15 9:30 AM	FE24	FE – Solid Oxide Fuel Cells Program	Lincoln 5
Siriwardane	Ranjani	National Energy Technology Laboratory	6/14 6:30 PM	IA022	Interagency Activities	Exhibit Halls B&C
Skandan	Ganesh	NEI Corporation	6/13 6:30 PM	ST150	Poster	Exhibit Halls B&C
Smith	Owen	NREL	6/14 6:30 PM	PD100	Poster	Exhibit Halls B&C
Song	Xueyan	West Virginia University	6/13 6:30 PM	FE055-p	Poster	Exhibit Halls B&C
Song	Xueyan	West Virginia University Research Corporation	6/14 9:30 AM	FE9	FE – Solid Oxide Fuel Cells Program	Lincoln 5
Spendelow	Jacob	LANL	6/13 6:30 PM	FC181	Poster	Exhibit Halls B&C
Spendelow	Jacob	LANL	6/14 5:15 PM	FC161	Fuel Cell R&D	Thurgood East/North
Sprik	Sam	NREL	6/14 11:00 AM	TV017	H2@Scale & Technology Acceleration	Lincoln 6
Srinivas	Girish	TDA Research, Inc.	6/13 6:30 PM	FC192	Poster	Exhibit Halls B&C
Stamenkovic	Vojislav	ANL	6/14 1:45 PM	FC140	Fuel Cell R&D	Thurgood East/North
Stavila	Vitalie	SNL	6/15 8:30 AM	ST128	Hydrogen Fuel R&D	Thurgood South/West
Stechel	Ellen	Arizona State University	6/13 6:30 PM	PD168	Poster	Exhibit Halls B&C
Steffens	Sophia	University of California,	6/14 6:30 PM	ST145	Poster	Exhibit Halls B&C
Steinbach	Andrew	Berkeley 3M	6/14 3:15 PM	FC143	Fuel Cell R&D	Thurgood East/North
			•		FE – Solid Oxide Fuel Cells	,
Stevenson	Jeff	Pacific Northwest National Lab  Pacific Northwest National	·	FE4	Program	Lincoln 5
Stevenson	Jeffry	Laboratory	6/13 6:30 PM	FE078-p	Poster	Exhibit Halls B&C
Stroman	Richard	Naval Research Laboratory	6/14 12:00 PM	IA005	Interagency Activities	Lincoln 3-4
Tamburello	David	SRNL	6/15 12:00 PM	ST008	Hydrogen Fuel R&D	Thurgood South/West
Tarver	Jacob	NREL	6/14 6:30 PM	ST135	Poster	Exhibit Halls B&C
Terlip	Danny	NREL	6/14 6:30 PM	H2021	Poster	Exhibit Halls B&C

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Tucker	Michael	Lawrence Berkeley National Laboratory	6/13 6:30 PM	FE072-p	Poster	Exhibit Halls B&C
Turchetta	Diane	Federal Highway Administration	6/14 4:45 PM	IA011	Interagency Activities	Lincoln 3-4
Ulsh	Michael	NREL	6/14 9:30 AM	MN001	H2@Scale & Technology Acceleration	Lincoln 6
Ulsh	Michael	NREL	6/14 6:30 PM	H2006	Poster	Exhibit Halls B&C
Valente	Patrick	Ohio Fuel Cells Coalition	6/13 6:30 PM	MN012	Poster	Exhibit Halls B&C
Valente	Pat	Ohio Fuel Cell Coalition	6/14 5:15 PM	IA013	Interagency Activities	Lincoln 3-4
Vesely	Charles	Cummins Power Generation	6/14 1:45 PM	FE14	FE – Solid Oxide Fuel Cells Program	Lincoln 5
Vijayagopal	Ram	ANL	6/13 6:30 PM	TV150	Poster	Exhibit Halls B&C
Vijayagopal	Ram	ANL	6/13 6:30 PM	TV150	Poster	Exhibit Halls B&C
Wagener	Earl	Tetramer Technologies LLC	6/14 2:15 PM	PD151	Hydrogen Fuel R&D	Thurgood South/West
Waldecker	Jim	Ford Motor Co.	6/14 5:45 PM	FC162	Fuel Cell R&D	Thurgood East/North
Walker	Robert	Montana State University	6/13 6:30 PM	FE059-p	Poster	Exhibit Halls B&C
Wang	Wensheng	Atrex energy	6/14 8:30 AM	FE7	FE – Solid Oxide Fuel Cells Program	Lincoln 5
Wang	Jia	BNL	6/14 2:15 PM	FC141	Fuel Cell R&D	Thurgood East/North
Ward	Patrick	SRNL	6/14 6:30 PM	ST134	Poster	Exhibit Halls B&C
Weber	Adam	LBNL	6/13 4:45 PM	PD148C	Hydrogen Fuel R&D	Thurgood South/West
Wei	Max	LBNL	6/13 5:15 PM	TV043	H2@Scale & Technology Acceleration	Lincoln 6
Weimer	Alan	University of Colorado Boulder	6/14 6:30 PM	PD114	Poster	Exhibit Halls B&C
Weisenberger	Matthew	University of Kentucky National Oceanic and	6/14 6:30 PM	ST146	Poster	Exhibit Halls B&C
Wilkes	Dana	Atmospheric Administration	6/14 6:30 PM	IA019	Poster	Exhibit Halls B&C
Willauer	Heather	Naval Research Laboratory	6/14 6:30 PM	IA018	Poster	Exhibit Halls B&C
Wolverton	Chris	Northwestern University	6/13 6:30 PM	PD167	Poster	Exhibit Halls B&C
Wood	Brandon	LLNL	6/14 5:15 PM	ST129	Hydrogen Fuel R&D	Thurgood South/West
Xu	Hui	Giner, Inc.	6/13 4:15 PM	FC170	Fuel Cell R&D	Thurgood East/North
Xu	Hui	Giner, Inc.	6/13 6:30 PM	FC117	Poster	Exhibit Halls B&C
Xu	Hui	Giner, Inc.	6/13 6:30 PM	FC129	Poster	Exhibit Halls B&C
Xu	Hui	Giner, Inc.	6/13 6:30 PM	FC185	Poster	Exhibit Halls B&C
Xu	Hui	Giner, Inc.	6/14 1:45 PM	PD143	Hydrogen Fuel R&D	Thurgood South/West
Xu	Hui	Giner, Inc.	6/14 6:30 PM	ARPAE07	Poster	Exhibit Halls B&C
Yelvington	Paul	Mainstream	6/15 12:00 PM	MN016	Fuel Cell R&D	Thurgood East/North
Zelenay	Piotr	LANL	6/13 3:15 PM	FC160	Fuel Cell R&D	Thurgood East/North
Zhao	Feng	Storagenergy	6/14 6:30 PM	ARPAE08	Poster	Exhibit Halls B&C
Zhong	Yu	Worcester Polytechnic Institute	6/13 6:30 PM	FE086-p	Poster	Exhibit Halls B&C
Zhou	Xiao-Dong	University of Louisiana at Lafayette	6/14 10:00 AM	FE10	FE – Solid Oxide Fuel Cells Program	Lincoln 5
Zhu	Jiahong	Tennessee Technological University	6/13 6:30 PM	FE056-p	Poster	Exhibit Halls B&C
Zhu	Tianli	United Technologies Research Center	6/13 6:30 PM	PD154	Poster	Exhibit Halls B&C

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