

2015 CROSSCUTTING TECHNOLOGY RESEARCH REVIEW MEETING

POSTER SESSION AND RECEPTION

TUESDAY APRIL 28 (5:30 - 8 PM)

Key Technology	Poster Number	Performer	Project Title	Presenter
High Performance Materials	1	Electric Power Research Institute	Predicting the Oxidation/Corrosion Performance of Structural Alloys in Supercritical CO ₂	John Shingledecker
	2	General Electric Company	Modeling Long-Term Creep Performance for Welded Nickel-Base Superalloy Structures for Power Generation Systems	Chen Shen
	3	Edison Welding Institute, Inc.	Additive Manufacturing of Fuel Injectors	Mahdi Jamshidinia
	4	Ceramatec Inc.	Ceramic Microchannel Heat Exchangers	C. Lewisohn
	5	University of Tennessee	Computational Design and Performance Prediction of Creep-Resistant Ferritic Superalloys	Peter Liaw
	6	West Virginia University	Ceramic High-Temperature Thermoelectric Heat Exchanger and Heat Recuperators for Power Generation Systems	Xueyan Song
	7	Pennsylvania State University	Computational Design and Discovery of Ni-Based Alloys and Coatings: Thermodynamic Approaches Validated by Experiments	Zi-Kui Liu
	8	Oregon State University	Discrete Element Method for Deformation and Microstructure Evolution Modeling	Jamie Kruzic
	9	Delaware State University	Nanosheet-like Silica Nanomaterials (NSN) for Carbon Capture Applications	Cheng-Yu Lai
	10	Prairie View A&M University	Post-Combustion Carbon Capture Using Polyethylenimine Functionalized Titanate Nanotubes: Review and Preliminary Work	Raghava Kommalapati
	11	University of Nebraska - Lincoln	Vertically-Aligned Carbon-Nanotubes Embedded in Ceramic Matrices for Hot Electrode Applications	Yong Feng Lu
	12	Clark Atlanta University	Engineering Accessible Adsorption Sites in Metal Organic Frameworks for CO ₂ Capture	Conrad Ingram
Sensors & Controls	13	PiMEMS, Inc.	Smart Nano-Structured Titania-Based MEMS Multi-Gas Sensor for High-Temperature and Harsh Fossil Environment Applications	Payam Bozorgi
	14	Tech4Imaging	Adaptive Electrical Capacitance Volume Tomography for Real-Time Measurement of Solids Circulation Rate at High-Temperatures	Qussai Marashdeh
	15	University of Texas Arlington	Distributed Wireless Antenna Sensors for Boiler Condition Monitoring	Haiying Huang
	16	University of Cincinnati	Robust Metal-Ceramic Coaxial Cable Sensors for Distributed Temperature Monitoring in Harsh Environments of Fossil Energy Power Systems	Adam Trontz
	17	University of Massachusetts-Lowell	Distributed Fiber Sensing Systems for 3D Combustion Temperature Field Monitoring in Coal-Fired Boilers Using Optically Generated Acoustic Waves	Jingcheng Zhou
	18	National Energy Technology	Controls Development for Advanced Power Systems Using Cyber Physical Simulation	David Tucker
Innovative Energy Concepts	19	University of Texas at El Paso	High-Temperature High-Velocity Direct Power Extraction Using an Open Cycle Oxy-Combustion System	Manuel J. Hernandez
	20	University of Idaho	Boride-Based Electrode Materials with Enhanced Stability under Extreme Conditions for MHD Direct Power Extraction	Indrajit Charit
	21	University of Washington	Precursor-Derived Nanostructured Silicon Carbide Based Materials for MHD Electrode Appl	Yi-Hsun Yang

2015 CROSSCUTTING TECHNOLOGY RESEARCH REVIEW MEETING

POSTER SESSION AND RECEPTION

TUESDAY APRIL 28 (5:30 - 8 PM)

Key Technology	Poster Number	Performer	Project Title	Presenter
Simulation-Based Engineering	22	Florida International University	Development of Reduced Order Model for Reacting Gas-Solids Flow Using Proper Orthogonal Decomposition	Paul Cizmas
Water Management R&D	23	General Electric Company	Water Desalination Using Multi-Phase Turbo-Expander	Vitali Lissianski
	24	Gas Technology Institute	Simultaneous Waste Heat and Water Recovery from Power Plant Flue Gases for Advanced Energy System	Dexin Wang
	25	Southern Company Services, Inc.	Field Demonstration Study for Heat and Water Recovery at a Coal-Fired Power Plant	Todd Wall
	26	Porifera Inc.	The COHO: An Efficient FO-based Carbon Capture and Water Reuse System for Power Plants	Jennifer Klare
	27	Carnegie Mellon University	Evaluating the Techno-Economic Feasibility of Forward Osmosis Processes Utilizing Low Grade Heat for Power Plant Water and Wastewater Treatment	Meagan Mauter
	28	Research Triangle Institute	Fouling-Resistant Membranes for Treating Concentrated Brines	Zachary Hendren
	29	Southern Research Institute	Treatment of Produced Water from Carbon Sequestration Sites for Water Reuse, Mineral Recovery and Carbon Utilization	James H. Irvin
	30	University of Pittsburgh	Development of Membrane Distillation Technology Utilizing Waste Heat for Treatment of High Salinity Wastewaters	Omkar Lokare and Sakineh Tavakkoli
	31	University of Illinois	An Integrated Supercritical System for Efficient Produced Water Treatment and Power Generation	Seyed Dastgheib
	32	Sandia National Laboratory	Exploring Energy-Water Issues in the United States	Vince Tidwell
Other	33	John Hopkins University, Whiting School of Engineering	Joint Database for Energy and Propulsion Sensors	Nicholas Keim and Ben Hill-Lam