

Tuesday 4/21	Session D - Conference Room: Lawrence Welk			
	RARE EARTH ELEMENTS - CRITICAL MINERALS			
	Organization	PI	Title	Moderator
7:00 AM	REGISTRATION AND BREAKFAST			
7:30 AM				
	KEYNOTES			
8:00 AM	Welcome: Brian Anderson, Director, National Energy Technology Laboratory Keynote: Steven Winberg, Assistant Secretary for Fossil Energy, U.S. Department of Energy Panel: Fossil Energy Program Update Update: Historically Black Colleges and Universities (TBD) Success Story: Tech4Imaging, Doing Business with NETL/DOE			
8:30 AM				
9:00 AM				
9:30 AM				
10:00 AM	BREAK			
	Recovery of Rare Earth Elements from Coal-Based Resources			
10:30 AM	National Energy Technology Laboratory	Mary Anne Alvin	Rare Earth Element & Critical Minerals Program Overview	Charles Miller
11:00 AM	University of Kentucky	Rick Honaker	Pilot-Scale Testing of An Integrated Circuit for the Extraction of Rare Earth Minerals and Elements from Coal and Coal By-Products Using Advanced Separation Technologies	
11:30 AM	Physical Sciences Inc.	Dorin Preda	High Yield and Economic Production of Rare Earth Elements from Coal Ash	
NOON	LUNCH			
	REE Process Scale-Up and Efficiency Improvements			
1:00 PM	West Virginia University	Paul Ziemkiewicz	Development and Testing of an Integrated AMD Treatment and Rare Earth/Critical Mineral Plant	Jessica Mullen
1:30 PM	University of North Dakota	Nolan Theaker	Rare Earth Element Extraction and Concentration at Pilot-Scale from North Dakota Coal-Related Feedstocks	
2:00 PM	University of Kentucky	Rick Honaker	Demonstration of Scaled-Production of Rare Earth Oxides and Critical Materials from Coal-Based Sources Using Innovative, Low Cost Process Technologies and Circuits	
2:30 PM	Faraday Technology	Holly Garich	Low Temperature Reduction of Rare Earth Metals Using Ionic Liquids	
3:00 PM	BREAK			
	REE Separation Technology I			
3:30 PM	Materials Research, LLC	Xiaobiong Xie	Silicon-Calcium Based Reduction of Rare Earth Oxides	Anthony Zinn
4:00 PM	Los Alamos National Laboratory	George Goff	Evaluation of Laser-Based Analysis of Rare Earth Elements in Coal-Related Materials	
4:30 PM	Los Alamos National Laboratory	George Goff	Evaluation of Novel Strategies and Processes for Separation of Rare Earth Elements from Coal-Related Materials	
5:00 - 7:30 PM	POSTER SESSION			

Wednesday 4/22	Session D - Conference Room: Lawrence Welk			
	RARE EARTH ELEMENTS - CRITICAL MINERALS			
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7:00 AM	REGISTRATION AND BREAKFAST			
7:30 AM				
	REE Separation Technology II			
8:00 AM	National Energy Technology Laboratory	Mary Anne Alvin	REE Program Opening Remarks --- Plenary Session	Anthony Zinn
8:30 AM	Lawrence Livermore National Laboratory	Yongqin Jiao	Application of Biosorption for REE Recovery from Coal By-Products	
9:00 AM	Idaho National Laboratory	Yoshiko Fujita	New Sensing Mechanisms for Rare Earth Detection in Coal and Coal By-Products	
9:30 AM	Virginia Polytechnic Institute and State University	Roe-Hoan Yoon	Fundamental Studies on the Recovery of REEs from Coal and Coal By-Products	
10:00 AM	BREAK			
	REE Separation Technology III			
10:30 AM	National Energy Technology Laboratory	Morgan Summers	Domestic Supply Chain, Demand and Opportunities	Mary Anne Alvin
11:00 AM	National Energy Technology Laboratory	Evan Granite	Extraction Indices for Determination of Optimum Feedstock	
11:30 AM	National Energy Technology Laboratory	Kelly Rose	Developing a Systematic, Geo-Data-Driven Assessment for Characterizing REEs in Coal-Related Systems	
NOON	National Energy Technology Laboratory	Circe Verba	Selective Extraction of Rare Earth Elements from Central Appalachian Underclays	
12:30 PM	LUNCH			
	TRANSFORMATIONAL POWER GENERATION - Improvements for Existing Plants IV			
1:00 PM	National Energy Technology Laboratory	Larry Shadle	Online System ID for Both Fault Detection and Power Plant Dynamics Control During Cycling Operations	Matthew Adams
1:30 PM	National Energy Technology Laboratory	Chris Guenther	Data Driven High Fidelity Proxy Models	
2:00 PM	National Energy Technology Laboratory	Steve Zitney	Dynamic Modeling and Analysis	
2:30 PM	National Energy Technology Laboratory	Marc Turner	Conceptual Design of a Greenfield PC Plant Intended for Flexible Operation	
3:00 PM	BREAK			
	Chemical Looping Combustion & Pressure Gain Combustion			
3:30 PM	University of Utah	Kevin Whitty	Development of Enabling Technologies for Chemical Looping Combustion and Chemical Looping with Oxygen Uncoupling	Debalina Dasgupta
4:00 PM	University of North Dakota Energy and Environmental Research Center	Junior Nasah	Low-Cost and Recyclable Oxygen Carrier and Novel Process for Chemical Looping Combustion	
4:30 PM	University of Central Florida	Kareem Ahmed	Advanced Cost-Effective Coal-Fired Rotating Detonation Combustor for High Efficiency Power Generation	

POSTER SESSION

Program	Number	Organization	PI	Title	Agreement #
RARE EARTH ELEMENTS - CRITICAL MINERALS	REE-1	University of Kentucky	Rick Honaker	Low Temperature Plasma Treatment for Enhanced Recovery of Highly Valued Critical Rare Earth Elements from Coal-Based Resources	FE0031525
	REE-2	Battelle Memorial Institute	Darwin Argumedo	Recovery of High Purity Rare Earth Elements (REEs) from Coal Ash via a Novel Electrowinning Process	FE0031529
	REE-3	University of North Dakota Energy and Environmental Research Center	Bruce Folkendahl	Economic Extraction and Recovery of REEs and Production of Clean Value-Added Products from Low-Rank Coal Fly Ash	FE0031490
	REE-4	Virginia Polytechnic Institute and State University	Aaron Noble	Development of a Cost-Effective Extraction Process for the Recovery of Heavy and Critical Rare Earth Elements from the Clays and Shales Associated with Coal	FE0031523
	REE-5	Research Triangle Institute	Zachary Hendren	Low-Cost Rare-Earth-Element (REE) Recovery from Acid Mine Drainage Sludge	FE0031483
	REE-6	Wayne State University	Timothy Dittrich	Coupled Hydrothermal Extraction and Ligand-Associated Swellable Glass Media Recovery of Rare Earth Elements from Coal Fly Ash	FE0031565
	REE-7	Ohio State University	Chin-Min Cheng	Concentrating Rare Earth Elements in Acid Mine Drainage Using Coal Combustion Products through Abandoned Mine Land Reclamation	FE0031566
	REE-8	West Virginia University	Paul Ziemkiewicz	At-Source Recovery of Rare Earth Elements from Coal Mine Drainage	FE0031524
	REE-9	National Energy Technology Laboratory (Leidos)	Brian Kail	REE Extraction and Enrichment from Coal Mine Drainage using Basic Immobilized Amine Sorbents (BIAS)	NETL FWP EY19
	REE-10	National Energy Technology Laboratory	Dustin McIntyre	Portable, Laser Induced Breakdown (LIBS) Spectroscopy for Real-Time REE Detection	NETL FWP EY19
	REE-11	National Energy Technology Laboratory	Scott Crawford	Real-Time Fiber Optic Sensors for REE Detection	NETL FWP EY19
	REE-12	National Energy Technology Laboratory	Jinichiro Nakano	Thermal Concentration of Rare Earth Elements from Coal-By Products	NETL FWP EY19
	REE-13	National Energy Technology Laboratory	Christina Lopano	REE Recovery from Powder River Basin Coal Ash using Staged Leaching with Mild Acids	NETL FWP EY19
	REE-14	University of North Dakota Energy and Environmental Research Center	Nolan Theaker	Investigation of Rare Earth Element Extraction from North Dakota Coal-Related Feedstocks	FE0027006