



U.S. DEPARTMENT OF
ENERGY



NATIONAL
ENERGY
TECHNOLOGY
LABORATORY

Crosscutting Research and Advanced Energy Systems Project Review Meeting Gasification Systems Virtual Session Agenda

All times designated in Eastern Daylight Time

Tuesday, May 4, 2021

10:00 AM **Welcome Remarks and Gasification Systems Portfolio Overview**
Dave Lyons, National Energy Technology Laboratory

Air Separation Technology

Moderator: Evelyn Lopez

10:30 AM **Advanced Oxygen Separation from Air Using a Novel Mixed Matrix Membrane (FWP-B000-18-061)**
Frederick Stewart, Idaho National Laboratory

11:00 AM **Radically Engineered Modular Air Separation System Using Tailored Oxygen Sorbents (FE0031521)**
Fanxing Li, North Carolina State University

11:30 AM **Pilot Testing of a Modular Oxygen Production System Using Oxygen Binding Adsorbents (FE0031527)**
John Carpenter, Research Triangle Institute (RTI)

12:00 PM **BREAK**

Air Separation Technology

Moderator: Andrew (Drew) O'Connell

1:00 PM **Modularization of Ceramic Hollow Fiber Membrane Technology for Air Separation (FE0031473)**
Chris Xue, University of South Carolina

1:30 PM **Pressure Driven Oxygen Separation (FWP-73130)**
David Reed, Pacific Northwest National Laboratory

Driving Innovation & Delivering Solutions



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- 2:00 PM** **High Selectivity and High Throughput Carbon Molecular Sieve Hollow Fiber Membrane Based Modular Air Separation Unit for Producing High Purity O₂ (FWP-FE-1049-18-FY19)**
Rajinder Singh, Los Alamos National Laboratory
- 2:30 PM** **Oxygen Production for Gasification (FWP-1022405-Task5)**
Jonathan Lekse, National Energy Technology Laboratory
- 3:00 PM** **Magnetocaloric Cryogenic System for High Efficiency Air Separations (FWP-73143)**
John Barclay, Pacific Northwest National Laboratory

Process Intensification for Syngas & Hydrogen

Moderator: Andrew (Drew) O'Connell

- 3:30 PM** **Experimental Validation of Coal Gasification with Neutron Imaging (FWP-FEAB325)**
James Parks II, Oak Ridge National Laboratory
- 4:00 PM** **Advanced Gasifier Design (FWP-1022405-Task3)**
William Rogers, National Energy Technology Laboratory



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Wednesday, May 5, 2021

Process Intensification for Syngas & Hydrogen

Moderator: Steve Markovich

- 10:00 AM** **Making Coal Relevant for Small Scale Applications: Modular Gasification for Syngas/Engine CHP Applications in Challenging Environments (FE0031601)**
Brent Sheets, University of Alaska - Fairbanks
- 10:30 AM** **Advanced Manufacturing and Materials Technologies for Gasification (FWP-1022405-Task4)**
Jinichiro Nakano & Omer Dogan, National Energy Technology Laboratory
- 11:00 AM** **Small-Scale Engineered High Flexibility Gasifier (FE0031531)**
Mikhail Granovskiy, Southern Research Institute
- 11:30 AM** **Staged Opposed Multi Burner (OMB) for Modular Gasifier/Burner (FE0031506)**
Kunlei Liu, University of Kentucky Research Foundation
- 12:00 PM** **BREAK**

Process Intensification for Syngas & Hydrogen

Moderator: Steve Markovich

- 1:00 PM** **Conversion of Coal Wastes and Municipal Solids Mixtures by Pyrolysis Torrefaction and Entrained Flow Gasification (SC0018580)**
Nicholas Schwartz, Mainstream Engineering Corporation
- 1:30 PM** **Microwave Reactions for Gasification (FWP-1022405-Task6)**
Mark Smith, National Energy Technology Laboratory



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Blue Hydrogen & Negative CO₂ Emissions

Moderator: Diane Revay Madden

2:00 PM **Integrated Water-Gas-Shift (WGS) / Pre-Combustion Carbon Capture Process (FE0023684)**
Gokhan Alptekin, TDA Research, Inc.

2:30 PM **Comparison of Commercial, State-of-the-Art, Fossil-based, Hydrogen Production Technologies (FWP-1022405-Task 13)**
Bob Stevens, National Energy Technology Laboratory