

**Workshop on Supercritical Carbon Dioxide and Material Interactions**  
**March 21-23, 2011**  
**Brookhaven National Laboratory**

**SPEAKER LIST & AGENDA**

**SESSION 1: Applications of sc-CO<sub>2</sub> to Energy Systems**

**Session Chair: Martin Schoonen, Stony Brook University**

**Organizer: Lynne Ecker, Brookhaven National Laboratory**

- Michael Z. Podowski, Rensselaer Polytechnic Institute
- Catherine Peters, Princeton University
- Daniel Bour, Alta Rock Inc.
- Satish Myneni, Princeton University

**SESSION 2: Characterization Methods in sc-CO<sub>2</sub> Properties and Material Interactions**

**Session Chair: Toni Lanzirotti, University of Chicago**

**Organizer: Lars Ehm, Stony Brook University**

- Tetsu Tokunaga, Lawrence Berkeley National Lab
- Qun Shen, Brookhaven National Lab
- Pamela Whitfield, National Research Council Canada
- Hoydoo You, Argonne National Lab

**SESSION 3: sc-CO<sub>2</sub> Properties and Material Interactions**

**Session Chair: Don Weidner, Stony Brook University**

**Organizer: Simerjeet K Gill, Brookhaven National Laboratory**

- Peter Kelemen, Columbia University
- Teng-fong Wong, Stony Brook University
- Daniel Strongin, Temple University

**SESSION 4: Multi-scale Issues in sc-CO<sub>2</sub> Properties and Material Interactions**

**Session Chair: Catherine Peters, Princeton University**

**Organizer: Jeff Fitts, Brookhaven National Laboratory**

- Gerry Stokes, Brookhaven National Lab
- Matthew Ginder-Vogel, Calera Corporation
- Jeff Fitts, Brookhaven National Lab
- Brent Lindquist, Stony Brook University

<b>Monday, March 21, 2011</b>			
<b>Starts</b>	<b>Ends</b>	<b>Events</b>	<b>Location</b>
5:00 PM	6:00PM	Registration	Brookhaven Center Bldg. 30
6:00 PM	6:15PM	<b>Welcoming Remarks and Introduction:</b> Gerry Stokes, BNL Assistant Laboratory Director for Global and Regional Solutions Directorate (GARS)	Brookhaven Center Bldg. 30
6:15PM	8:00PM	<b>Reception</b>	Brookhaven Center Bldg. 30

<b>Tuesday, March 22, 2011</b>			
<b>Starts</b>	<b>Ends</b>	<b>Events</b>	<b>Location</b>
8:00 AM	8:30AM	Registration	Berkner Hall Lobby
8:00 AM	8:30 AM	Breakfast	Berkner Hall
8:30 AM	8:45 AM	<b>Opening Remarks:</b> Tom Butcher, Brookhaven National Laboratory	Berkner Hall Room B
8:45 AM	11:30 AM	<b>Topic 1: Applications of sc-CO<sub>2</sub> to Energy Systems</b>	Berkner Hall Room B
		<b>Session Chair:</b> Martin Schoonen, Stony Brook University <b>Organizer:</b> Lynne Ecker, Brookhaven National Laboratory	
8:45 AM	9:10 AM	Michael Z. Podowski, Rensselaer Polytechnic Institute <i>“Application of Supercritical CO<sub>2</sub> in Nuclear Energy Systems”</i>	
9:10 AM	9:35 AM	Catherine Peters, Princeton University <i>“CO<sub>2</sub>-Acidified Brines and their Reactions with Caprock Minerals”</i>	
9:35 AM	10:00 AM	Daniel Bour, Alta Rock Inc. <i>“Practical Issues Related to sc-CO<sub>2</sub> Well Construction for CO<sub>2</sub> Sequestration Projects”</i>	
10:00 AM	10:25 AM	Satish Myneni, Princeton University <i>“The Role of Elevated Levels of CO<sub>2</sub> on Mineral Weathering in Soils, Plant Growth, and Metal Accumulation in Plants”</i>	
10:25 AM	10:45 AM	Photo (first) and Coffee Break	Berkner Lobby
10:45 AM	11:30 AM	<b>Topic 1 Panel Discussion: Research Priorities and Funding Opportunities</b>	Berkner Hall Room B
11:35 AM	2:15 PM	<b>Topic 2: Characterization Methods in sc-CO<sub>2</sub> Properties and Material Interactions</b>	Berkner Hall Room B
		<b>Session Chair:</b> Toni Lanzirotti, University of Chicago <b>Organizer:</b> Lars Ehm, Stony Brook University	
11:35 AM	12:00 AM	Tetsu Tokunaga, Lawrence Berkeley National Laboratory <i>“Brine Films in Pores during Geologic CO<sub>2</sub> Sequestration: Hypothesized Hydraulic Behavior and Experimental Testing”</i>	
12:00 PM	1:00 PM	<b>Lunch</b>	
1:00 PM	1:25 PM	Qun Shen, Brookhaven National Laboratory <i>“Science Opportunities at NSLS-II”</i>	

<b>Tuesday, March 22, 2011 (cont'd)</b>			
1:25 PM	1:50 PM	Pamela Whitfield, National Research Council Canada <i>"Development of Gas Pressure Cells for Diffraction Experiments: Hurdles, Headaches and Practical Considerations"</i>	
1:50 PM	2:15 PM	Hoydoo You, Argonne National Laboratory <i>"In situ X-ray Scattering Studies from Interfaces of Solid and Supercritical CO<sub>2</sub> and Water"</i>	
2:20 PM	3:35 PM	<b>Topic 3: sc-CO<sub>2</sub> Properties and Material Interactions</b>	Berkner Hall Room B
		<b>Session Chair:</b> Don Weidner, Stony Brook University <b>Organizer:</b> Simerjeet K Gill, Brookhaven National Laboratory	
2:20 PM	2:45 PM	Peter Kelemen, Columbia University <i>"In situ Mineral Carbonation in Peridotite for CO<sub>2</sub> Capture and Storage"</i>	
2:45 PM	3:10 PM	Teng-fong Wong, Stony Brook University <i>"Characterization of Pore Geometry of Reservoir Rocks in Relation to their Interactions with Supercritical Carbon Dioxide"</i>	
3:10 PM	3:35 PM	Daniel Strongin, Temple University <i>"Reactivity of Iron-bearing Minerals and CO<sub>2</sub> Sequestration"</i>	
3:35 PM	3:50 PM	Afternoon Break	
3:50 PM	5:00 PM	<b>Breakout Sessions for Topics 2 &amp; 3</b> <b>Leaders: Session Chairs &amp; Organizers</b>	Berkner Hall Rooms A and B
5:00 PM	5:30 PM	<b>Breakout Summaries and Discussion with all Workshop Participants</b>	Berkner Hall Room B
6:00 PM	8:00PM	Dinner	Berkner Hall Cafeteria

<b>Wednesday, March 23, 2011</b>			
<b>Starts</b>	<b>Ends</b>	<b>Events</b>	<b>Location</b>
8:30 AM	8:45AM	Check-in, Coffee	Berkner Hall Lobby
8:45 AM	10:15AM	<b>Topic 4: Multi-scale Issues in sc-CO<sub>2</sub> Properties and Material Interactions</b>	Berkner Hall
		<b>Session Chair:</b> Catherine Peters, Princeton University <b>Organizer:</b> Jeff Fitts, Brookhaven National Laboratory	
8:45 AM	9:10 AM	Gerry Stokes, Brookhaven National Laboratory <i>"Balancing Global and Regional Energy Needs and CO<sub>2</sub> Emissions"</i>	
9:10 AM	9:35 AM	Matthew Ginder-Vogel, Calera Corporation <i>"Sequestering CO<sub>2</sub> in the Built Environment"</i>	
9:35 AM	10:00 AM	Jeff Fitts, Brookhaven National Lab <i>"Statistical Challenges Facing Pore-Scale X-ray Imaging Results"</i>	
10:00 AM	10:25 AM	Brent Lindquist, Stony Brook University <i>"Up-Scaling Reaction Rates from Pore to Core Scale"</i>	
10:25AM	11:25AM	<b>Topic 4 Breakout Session</b> <b>Leaders: Catherine Peters and Jeff Fitts</b>	Berkner Hall Room A
11:25AM	12:10PM	<b>Reports on Breakout Sessions by Session Coordinator</b>	Berkner Hall Room B
12:10PM	12:30 PM	Closing Remarks: Adjourn	Berkner Hall

