



Massachusetts
Institute of
Technology

Fission Energy Workshop

Opportunities for Fundamental Research and Breakthrough in Fission

DAY 1 – November 29, 2007

7:45 – 8:15	CONTINENTAL BREAKFAST	
8:15 – 8:45	Welcome and Introduction	
8:15	Introduction and Workshop Purpose	Mujid S. Kazimi <i>CANES – MIT</i>
8:30	Introduction to GCEP	Lynn Orr <i>Global Climate and Energy Project</i>
8:45 – 10:15	Opportunities and Challenges of Fission	Chair: Michael Golay
8:45	The Role of Nuclear in the Future Energy Mix	Andrew White <i>GE-Hitachi Nuclear Energy</i>
9:30	Combining Nuclear, Renewable, and Fossil Fuel Cycles for Sustainability: Implications for Research	Charles W. Forsberg <i>Oak Ridge National Laboratory</i>
10:15 – 10:45	BREAK	
10:45 – 2:45	Design Innovation in Reactor Technology	Chair: M.J. Driscoll, G. Apostolakis
10:45	Application of Nanofluids to Nuclear Reactors	Jacopo Buongiorno <i>Massachusetts Institute of Technology</i>
11:15	High Burnup Fuels	Mitchell Meyer <i>Idaho National Laboratory</i>
11:45	Direct Energy Conversion	Gang Chen <i>Massachusetts Institute of Technology</i>
12:15 – 1:15	LUNCH	
1:15	Avenues in Computational Design and Safety of Nuclear Reactors	Truc-Nam Dinh <i>Royal Institute of Technology - Sweden</i>
1:45	Nuclear Process Heat Desalination	John Goossen <i>Westinghouse Electric Company</i>
2:15 – 2:45	Panel Discussion on Research Opportunities	
2:45 – 5:45	Materials	Chairs: Ronald Ballinger, Sidney Yip
2:45	Advanced Materials for Future Nuclear Plants	Steve Zinkle <i>Oak Ridge National Laboratory</i>
3:15 – 3:45	BREAK	
3:45	Atomistic Simulation for the Development of Advanced Materials	Brian Wirth <i>UC Berkeley</i>
4:15	Advances in Ceramic Materials	Akira Kohyama <i>Kyoto University</i>
4:45	Material Challenges in High Temperature Processes for Hydrogen Production	Bilge Yildiz <i>Massachusetts Institute of Technology</i>
5:15 – 5:45	Panel Discussion on Research Opportunities	
5:45 – 7:00	RECEPTION	
7:00 – 9:00	BANQUET DINNER	



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DAY 2 – November 30, 2007

8:00 – 8:30	CONTINENTAL BREAKFAST	
8:30 – 12:00	Closing the Fuel Cycle	Chair: Bernard Boullis
8:30	Benefits and Challenges of a Closed Fuel Cycle	Phillip Finck <i>Idaho National Laboratory</i>
9:00	Innovative Reprocessing Techniques	Emory Collins <i>Oak Ridge National Laboratory</i>
9:30	Advanced Fuels for Actinide Recycling	Sylvie Pillon <i>CEA - France</i>
10:00 – 10:30	BREAK	
10:30	Reactors: Options and Challenges	Ehud Greenspan <i>UC Berkeley</i>
11:00	Fusion Breeders	Wallace Manheimer <i>Naval Research Laboratory</i>
11:30 – 12:00	Panel Discussion on Research Opportunities	
12:00 – 12:45	LUNCH	
12:45 – 2:45	Waste Management	Chair: Andrew Kadak
12:45	Advanced Waste Forms	Rodney Ewing <i>University of Michigan</i>
1:15	Geoscience Needs for Subsurface Storage	Mark Peters <i>Argonne National Laboratory</i>
1:45	Risk and Performance Analysis of Disposal Options	Robert Budnitz <i>Lawrence Berkeley National Laboratory</i>
2:15 – 2:45	Panel Discussion on Research Opportunities	
2:45	ADJOURN	