

Workshop on Emerging Research in Ceramics, Carbon, Glasses and Composites
Westin Arlington Gateway Hotel
801 North Glebe Road
Arlington, Virginia, 22203

March 19-21

Workshop Meetings: F. Scott Fitzgerald B room
Workshop Dinners: F. Scott Fitzgerald A room

Agenda version 3/16/12

March 19

- 7:00 to 8:00 Continental Breakfast
- 7:45 to 8:00 Welcome and Charge to the Workshop Participants (Rohrer/Madsen)
- 8:00-9:40 Presentations of Challenges for Glasses (20 min. each)
Jonathan Stebbins: The challenge of disorder: Glasses, liquids, and imperfect crystals
Liping Huang: Tapping the Intrinsic Strength of Glass
Carlo Pantano: glass surface chemistry for strength and adhesion
Louis Mattos: Organic - Inorganic Composites
- 9:40-10:00 Brief presentations: (10 min each)
Mario Affatigato
Monika Backhaus: Evolution of interfaces during operation of functional devices
- 10:00-10:10 Break
- 10:10-10:45 Panel discussion on glasses (led by Liping Huang)
- 10:45-12:30 Presentations of Challenges for non-oxide ceramics (20 min. each)
Alexandra Navrotsky: New Ceramic Materials- Nanostructured, Heterogeneous, Composite
Nina Orlovskaya: Boron Rich Solids
Yury Gogotsi: Two-Dimensional Non-Oxide Ceramics
Stefano Curtarolo: Identifying compounds with novel properties using High-Throughput ab-Initio Calculations
- 12:30-12:45 Brief presentations: (10 min)
T.S. Sudarshan: Additives usage in sintering optimized through Genetic Algorithm
- 12:45-1:45 Lunch
- 1:45-2:20 Panel discussion on non-oxide ceramics (led by A. Navrotsky)
- 2:20-2:30 Break
- 2:30-4:10 Presentations of Challenges for composites (20 min. each)
Raj Bordia: Microstructural Control in Ceramic Composites
Katherine Faber: Imaging Random Events
Helen Chan: Atomic transport along and across grain boundaries
Carlos Levi: Critical Issues for Composites in Extreme Environments
- 4:10-4:30 Brief presentations: (10 min each)

Javier Garay

Linda Jones: Carbons and Carbides for Nuclear Applications

- 4:30-4:45 Break
4:45-5:20 Panel discussion on composites (led by Raj Bordia)
5:20-5:30 Review and Assignments
6:00 Dinner (F. Scott Fitzgerald A)

March 20

- 7:00 to 8:00 Continental Breakfast
8:00-8:50 Presentations of Challenges for oxide ceramics (20 min. each)
Sergei Kalinin: Ceramic Science on a Single Defect Level
Jeremy Levy: The Challenge of Oxide Nanoelectronics
8:50 -9:30 Brief presentations (10 min each)
Jim Eckstein: New Phenomena in Complex Oxide Heterostructures
Jon Paul Maria: Defect Equilibria in Electronic Ceramics
9:30-9:45 Break
9:45-10:35 Presentations of Challenges for oxide ceramics (20 min. each)
K. Scott Weil: Functional Ceramic Membranes
Robert J. Lad: High Temperature Stability of Multicomponent Ceramic Coatings
10:35-11:15 Brief presentations (10 min each)
Toshihiko Tani: Design of properties and processing for Nano/Meso/Micro-Structure
Veena Tikari
Alex Demkov: Monolithic integration of ceramics with semiconductors
11:15-12:00 Panel discussion on oxide ceramics (Led by S. Kalinin)
12:00-1:00 Lunch
1:00-3:00 Session A, NSF Mechanisms
1:00-2:30 presentations, discussion
2:30-3:00 Group discussions and summary reports
3:00-3:15 Break
3:15-5:00 Session B, International Context
3:15-4:35 Presentations (20 min each)
Linda Jones: International Leadership in ceramic education
Alexandra Navrotsky: Perspectives on International Collaborations
Raj Bordia: Perspectives on International Collaborations
Toshihiko Tani: Perspectives on Ceramics Research in Japan
4:35-5:00 Panel Discussion
5:00-5:15 break
5:15-5:30 Leader of Session A and B make draft report summaries to the entire group.
5:30-5:45 Review and Assignments for tomorrow
6:00 Dinner (F. Scott Fitzgerald A)

March 21

7:00 -8:00 Continental Breakfast

8:00-11:00 The four committees (glasses, non-oxide ceramics, composites, and oxide ceramics) work separately on report drafts.

Room Assignments:

oxide ceramics: Ernest Hemingway

glasses: Salon 1

non-oxide ceramics: Salon 2

composites: Salon 3

11:00-12:00 Committee chairs make draft reports (15 min. each) to the entire group.

12:00 adjourn