

**Schoenborn Presentations, Monday, January 28, 2013**  
**McKimmon Center, NCSU**  
**Western Boulevard and Gorman St., Raleigh, NC**

**8:00** **Continental Breakfast**

**8:30-12:00** **ORAL**

**Biotechnology**

- 8:30 Heath Johnson “Cells let their fingers do the walking: How filopodia point migrating fibroblasts in the right direction”
- 9:00 Andrew Frock “Growth phase transitions in the hyperthermophile *Thermotoga maritima* trigger unannotated Open Reading Frames (ORFs) encoding novel peptides”
- 9:30 Jaspreet Notey “Stationary Phase: Wild-type archaeon *Pyrococcus furiosus* vs a spontaneous mutant”

**10:00** **Coffee Break**

- 10:30 Arpan Mukherjee “Exploring the features of uranium oxidation and resistance in thermoacidophilic archaea”

**Catalysis**

- 11:00 Joshua McClure “Non-Pt group metal electrocatalysts for polymer electrolyte membrane fuel cells”

**Materials**

- 11:30 Mohammad Khan “Engineering the shape of a liquid metal alloy by tuning its surface oxide”

**12:00** **Lunch**

- 12:30 Dr. Timothy Nolen** “**Opportunities in the U. S. Chemical Industry:**  
**Eastman Chemical** **My View from the Inside**”

**1:30-3:00** **ORAL (continued)**

**Materials (continued)**

- 1:30 Rachita Sharma “Principles and Engineering of Self-propelling particles”
- 2:00 Mohammad Hassan “Structure, Property, Process Relationships for Meltblown Fibrous Media”
- 2:30 Alina Higham “Rheological study of crosslinking and gelation in multi-functional thiol and multi-functional acrylate systems involving an *in situ* comonomer catalyst”

**3:00-4:30** **POSTERS**

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**Materials**

1. Sarah Atanasov "Nanoscale Modification of Kevlar via Atomic Layer Deposition for Enhanced Force Protection"
2. Nancy Burns "Chitosan Enhanced Nanofibers for Sublingual Drug Delivery"
3. Stephanie Lam "Functional foams from biopolymers"
4. M. Mohammed "Improving Electrical and Interfacial Properties and Developing New Applications for Eutectic Gallium Indium Liquid Metal Alloy"
5. Rohan Patil "Polymer Brush De-grafting and Analysis of Molecular Weight"
6. Alex Richter "Synthesis and Characterization of Environmentally Benign Nanoparticles"
7. Tian Tian "Synthesis of Nanofibers, Rods, and Other Soft Matter Structures by Shear Spinning Technique"
8. Edwin Walker "Ionic Conductivity as a Means of Monitoring Polymer Network Formation"

**Energy and Catalysis**

9. Ezinne Achinivu "Lignin Extraction from Biomass with Protic Ionic Liquids"
10. Martin Dufficy "Composite Nanofibers for Increased Lithium-Ion Anode Performance"
11. Patrick Fahey "GCxGC-TOFMS Analysis for Hydrolysis Oils"
12. Nathan Galinsky "Oxygen carrier with facilitated O<sub>2</sub>- conduction for effective carbonaceous fuel conversion and CO<sub>2</sub> capture"
13. Feng He "Effect of Oxygen Carrier on Particulate Emissions from Chemical Looping"
14. Ying Liu "Origami Inspired Self-Folding of Polymer Sheets via Light Absorption"
15. Dennis McOwen "Toward High-Voltage Li-Ion Batteries: Concentrated Electrolytes"
16. Arya Shafie-Farhood "Partial Oxidation of Methane Using Surface Modified Oxygen Carriers"
17. Keyi Sun "Catalytic Deoxygenation of Octanoic Acid over Supported Pd Catalysts"
18. Junjie Zhao "ZnO 3D Hierarchical Nanostructures for Photocatalysis Application"

3:00-4:30

## POSTERS

### Biotechnology

19. Taliman Afroz “Sugar Utilization in *E. coli* at the Single-cell Level”
20. Oskar Bernal “Highly reactive microbial non-woven bio-photocomposites for CO<sub>2</sub> recycling and H<sub>2</sub> production”
21. Sophia Carrell “Novel Interactions between the NF-κB and BMP signaling pathways in the *Drosophila melanogaster* embryo”
22. Aaron Hawkins “Systems Level Diagnostics of Metabolically Engineered *Pyrococcus furiosus* With Hybrid Oligonucleotide Microarray”
23. Ashley Jermusyk “Constructing a synthetic gene network to model and understand signaling interactions”
24. William Kish “Peptide-Based Affinity Adsorbents with High Binding Capacity for the Purification of Monoclonal Antibodies”
25. Astor Liu “Morphodynamics of T lymphocyte migration”
26. Lauren Ridge “Predicting the Nature of the Protein Corona Surrounding Nanoparticles”
27. Mark Schulte “Process Intensification (PI) of CO Adsorption Using Non-Growing High Intensity *Clostridium ljungdahlii* Biocoatings”