Robert C. Brewster

MC 114-96
1200 East California Blvd.
Pasadena, CA 91125

975 San Pasqual St. # 213
Pasadena, CA 91106
(626) 379-0481

work: 972-8-934-4400
fax: 972-8-934-4138
e-mail: Brewster@caltech.edu

Education

2005–2007 ..... University of California, Los Angeles. Department of Chemistry, **Doctorate in Chemistry** (Ph.D.)

2002–2005..... University of Massachusetts, Amherst. Graduate Department of Physics.

1998–2002..... University of Massachusetts, Amherst. **Bachelor of Science in Physics.**

Employment

2009 – ..... California Institute of Science, **Postdoctoral Fellow**, Advisor: Rob Phillips
Research focused on: Transcriptional regulation

2007–2009 ..... Weizmann Institute of Science, **Postdoctoral Fellow**, Advisor: Sam Safran
Research focused on: Finite sized domains in soft and biological matter

Awards

2008–2009 ..... Fulbright Foundation post-doctoral fellowship to the Weizmann Institute.

Refereed Publication List

Submitted

1. Robert C. Brewster and Sam A. Safran *Line active hybrid lipids determine domain size in phase separation of saturated and unsaturated lipids*

Published

2. Robert C. Brewster, Phil A. Pincus and Sam A. Safran *Hybrid Lipid as Biological Surfactants*, Biophysical Journal **97**, 1087-194 (2009)

3. Robert C. Brewster, Gary S. Grest, and Alex J. Levine *Effects of Cohesion on the Surface Angle and Velocity Profiles of Granular Material in a Rotating Drum*, Physical Review E **79**, 011305 (2009)

4. Robert C. Brewster, Philip A. Pincus, and Sam A. Safran *Self Assembly Modulated by Interactions of Two Heterogeneously Charged Surfaces*, Physical Review Letters **101**, 128101 (2008).

5. Robert C. Brewster, Leonardo Silbert, Gary S. Grest, and Alex J. Levine *Two particle contact lifetimes and rheology in gravity driven granular flows*, Physical Review E **77**, 061302 (2008).

6. Leonardo Silbert, Gary S. Grest, Robert C. Brewster and Alex J. Levine *Contact lifetimes in dense granular flows*, Physical Review Letters **99**, 068002 (2007).

7. Robert C. Brewster, James Landry, Gary S. Grest, and Alex J. Levine *Breakdown of Bagnold scaling in cohesive granular flows*, Physical Review E **72**, 061301 (2005).

Presentations

Invited

Interactions and Self Assembly of Heterogeneously Charged Surfaces, Biological and Soft Matter Seminar at Tel-Aviv University, Tel-Aviv, Israel. March 2008.

Contributed

Self Assembly Modulated by Interactions of Two Heterogeneously Charged Surfaces, Poster presented at Jülich Soft Matter Days, Bonn, Germany. November 2008.

Self Assembly Modulated by Interactions of Two Heterogeneously Charged Surfaces, Poster presented at 3$^{\text{rd}}$ Curie-Wiezmann Symposium, Rehovot, Israel. September 2008.

Interactions and self assembly of two heterogeneously charged surfaces, Meeting of the American Physical Society, New Orleans, LA. March 2008.

Velocity Profiles in a Rotating Drum: The Effects of Cohesion, Meeting of the American Physical Society, Denver, CO. March 2007.

Two Particle Contact Lifetime Distribution in Gravity Driven Granular Flow, Meeting of the American Physical Society, Baltimore, MD. March 2006.

Breakdown of Bagnold Scaling in Cohesive Granular Flows, Meeting of the American Physical Society, Los Angeles, CA. March 2005.

Failure and Flow of Cohesive Granular Piles, Meeting of the American Physical Society, Montreal, QC. March 2004.

Rheology of Cohesive Granular Materials: Flow Down an Incline, 75$^{\text{th}}$ Annual Meeting of the Society of Rheology, Pittsburgh, PA. October 2003.

Teaching and Research Assistantships

- UCLA: Upper level Chemical Thermodynamics, Fall 2006 and Winter 2007.
  - Assisted with lectures and taunt a discussion section in an advanced physical chemistry course on thermodynamics.
- UCLA: General and Organic Chemistry Laboratory I, Spring 2006.
  - Taught two lab sections in an introductory chemistry laboratory.
- UCLA: Chemical Energetics and Change, Winter 2006.
  - Taught two discussion sections in an introductory course covering phase behavior, chemical equilibrium and chemical kinetics.
- UCLA: Chemical Structure, Fall 2005.
  - Taught four discussion sections in an introductory course on the structure of molecules with an introduction to quantum mechanics.
- UMASS: Research Assistantship, Summer 2003 - Summer 2005.
  - Research on granular flow through large-scale granular dynamics simulations.
- UMASS: General Physics Laboratory I, Spring 2003.
  - Taught four general physics laboratory sections designed for Engineers and other science majors
- UMASS: Tutor for high school physics and calculus, Fall 2001 - Spring 2002
  - Tutored two high school students in honors physics and calculus
- UMASS: Society of Physics Students outreach program, Fall 1999 - Spring 2002
  - Visited local elementary schools to teach physics through heavy use of hands on demonstrations

Professional Association Memberships

- American Physical Society
- Society of Rheology

References

Professor Samuel A. Safran
Professor
Department of Materials and Interfaces
phone: +972-8-934-3362
Weizmann Institute of Science
fax +972-8-934-4138
Rehovot, Israel 76100
e-mail: sam.safran@weizmann.ac.il

Professor Alexander J. Levine — Professor
Department of Chemistry and Biochemistry & California Nanosystems Institute
University of California, Los Angeles
607 Charles E. Young Drive., East
Los Angeles, CA 90095
phone: (310) 794-4436
fax (310) 206-4038
e-mail: alevine@chem.ucla.edu

Dr. Gary S. Grest — Senior Staff Physicist
Sandia National Laboratories
PO Box 5800
Albuquerque, NM 87123-1411
phone: (505) 844-3261
fax: (505) 844-9781
e-mail: gsgrest@sandia.gov

Professor Philip A. Pincus — Professor
Department of Physics,
University of California
Santa Barbara, CA 93106-9530
phone: (805) 893-4685
fax: (805) 893-8797
e-mail: fyl@physics.ucsb.edu

Professor Leo Silbert — Assistant Professor
Department of Physics,
Southern Illinois University Carbondale
Neckars 483A
Carbondale, IL 62901-4401
phone: (618) 453-1062
fax: (618) 453-1056
e-mail: lsilbert@physics.siu.edu