

Peter N. Yaron, Ph.D.

Department of Chemical Engineering, Carnegie Mellon University
5000 Forbes Ave. Pittsburgh, PA 15213, USA
Office: 6315 Wean Hall **Phone:** (412) 268-2729 **E-mail:** pny@andrew.cmu.edu

Education and Academic Distinctions

- 2007 Ph.D. Chemistry.** Concentration in Chemical Physics, University of Tennessee, Knoxville. *Advisor:* John Z. Larese.
"Adsorption of Small Molecules on MgO and Graphite: The Role of Molecular and Substrate Symmetry on Adsorption"
- **James D. Bloor Award for Outstanding Physical Chemistry Research.** University of Tennessee, Knoxville, 2007.
 - **1st Prize Research Poster.** Los Alamos National Laboratory LANSCE User Group (LUG) annual meeting, LANL, 2004.
 - **Chemical Physics Fellowship.** University of Tennessee, Knoxville, 2002.

Three semesters of classes in physics and mathematics, within 2 courses of obtaining a B.S. in Physics. State University of New York at Stony Brook, 2000–2002.

- **Undergraduate Research Award.** State University of New York at Stony Brook, 2001.

2000 B.S. Natural Resource Management. Concentration in Biological Resource Engineering and Geography. University of Maryland, College Park.

- **Year 2000 Fellowship.** University of Maryland, College Park, 1999.
- **Presidential Scholarship.** University of Maryland, College Park, 1995.

Academic and Professional Employment

- 05/2010 – Present *Post-Doctoral Fellowship.* Department of Chemical Engineering, Carnegie Mellon University, Pittsburgh, PA. Supervisors: Kris Noel Dahl, Mathias Lösche, Los Alamos National Laboratory.
- Quantification of progerin recruitment to membranes: The role of farnesylation and local electrostatic interactions in Hutchinson-Gilford Progeria Syndrome
 - cellular uptake mechanisms of single-walled carbon nanotubes
- 04/2008 – 04/2010 *Post-Doctoral Fellowship.* Research School of Chemistry, Australian National University, Canberra, Australia. Supervisor: John W. White.
- nano- and micro-structure of high-internal phase emulsions under shear
 - structure and dynamics of proteins at nanoparticle interfaces
- 05/2003 – 08/2003 *Summer Fellowship.* Lujan Neutron Scattering Center. Los Alamos, NM. Supervisor: Luke Daemen.
- neutron spectroscopy and simulations of chloromethane(s) adsorbed on Magnesium Oxide (100) surfaces
 - development of synthesis methods to produce isotopically substituted Boron Nitride
 - assisted instrument scientist on Filter Difference Spectrometer
- 08/2001 – 06/2002 *Undergraduate Researcher.* Department of Physics, State University of New York at Stony Brook / Brookhaven National Laboratory. Supervisor: Michael Rijssenbeek.
- calculated dimensions in engineering schematics and tested scintillator detectors used in roman pot detectors for pp2pp experiments at RHIC.

- helped construct UHV feed through to Argon calorimeter for ATLAS detector at Large Hadron Collider at CERN, Geneva.

05/2000 – 06/2001 *Civil Engineer*. Canard Engineering, Philadelphia, PA. Supervisor: Joseph Mulvihill.

- drainage calculations for Long Island Expressway – Cross island Expressway interchange, Long Island, New York.

Publications

10. Rheological and Microstructural Changes in High-Internal Phase Emulsions Under Shear: The role of co-surfactancy on droplet deformation and stability.

Yaron, P.N., Reynolds, P.A., Mata, J.P., White, J.W. (*In Preparation*)

9. Dynamics of Human Serum Albumin-Nanoparticle complex formation in solution and air-water interface.

Ang, J.-C., Yaron, P.N., White, J.W. (*Submitted to Soft Matter*)

8. The stability of high internal phase emulsions at low surfactant concentration studied by small angle neutron scattering.

Reynolds, P.A., McGillivray, D.J., Mata, J.P., Yaron, P.N., White, J.W. *Journal of Colloid and Interface Science* (2010), 349, 544-553.

7. Nano- and Microstructure of High-Internal Phase Emulsions Under Shear.

Yaron, P.N., Reynolds, P.A., McGillivray, D.J., Mata, J.P., White, J.W. (2010). *Journal of Physical Chemistry B* (2010), 14, 3500-3509 (ASAP).

6. Mechanism of Protein-Nanoparticle Complex Formation at the Air-Water Interface. Ang, J.-C., Lin, J.-M., Yaron, P.N., White, J.W. *Soft Matter* (2010), 6, 383-390.

5. Melting of thin films of alkanes on magnesium oxide.

Arnold, T., Barbour, A., Chanaa, S., Cook, R.E., Fernandez-Canato, D., Landry, P., Seydel, T., Yaron, P.N., Larese, J.Z. *European Physical Journal - Special Topics* (2009), 167, 143-150.

4. Waxy Molecules Exhibit a Special Shine For Metal Oxide Nanocubes.

Yaron, P.N., Cook, R.E., Clarke, S.A., Arnold, T., Telling, M.T.F. and Larese, J.Z. *ISIS Research Highlights*, 2006.

3. Neutron scattering and thermodynamic investigations of thin films of n-alkanes adsorbed on MgO(100) surfaces.

Arnold, T., Cook, R.E., Chanaa, S., Clarke, S., Farinelli, M., Yaron, P.N., Larese, J.Z. *Physica B: Condensed Matter* (2006), 385-386(1), 205-207.

2. Thermodynamic Investigation of n-Hexane on MgO.

Yaron, P.N., Telling M.T.F., Larese, J.Z. *Langmuir* (2006), 22, 7203-7207.

1. Design and Construction of a Floating Living Machine.

Yaron, P.N., Walsh, M., Sazama, C., Bozek, R., Burdette, C., Farrand, A., King, C. Vignola, J., Kangas, P. *Proceedings of the Twenty-Seventh Annual Conference on Ecosystems Restoration and Creation*. (2000) 92-101.

Invited Reviews and Book Chapters

- 1. X-ray and neutron scattering for nanoscale characterization of cell surface interactions.**

Nanoresearch and Sustainability: Applications of Nanoscience to the United Nations Millennium Development Goals.

Yaron, P.N. (*in Preparation*)

Teaching and Education Experience

2008 – Present *Consultant*. Green Energy Research Inc. Centereach, NY.

- consulting on the development of interactive lab modules designed for various age groups based on the alternative energy kits

2004 – 2007 *Teaching Assistant*. Upper-level Physical Chemistry I Laboratory. University of Tennessee, Knoxville.

- designed, implemented and delivered all-new lab modules and experiments based on modern physical chemistry techniques

2003 – 2004 *Teaching Assistant*. General Chemistry II for scientists and engineers. University of Tennessee, Knoxville.

2002 – 2003 *Teaching Assistant*. General Chemistry I for scientists and engineers. University of Tennessee, Knoxville.

Oral and Poster Presentations

10. **Surfactant Distribution in a Co-Surfactant High-Internal Phase Emulsion Under Shear.** AINSE/ANBUG Neutron Scattering Symposium. ANSTO, Lucas Heights, Australia, 2009. (*Talk*)

9. **Small-Angle Neutron Scattering and *in-situ* Rheology Measurements to Quantify the Physical Behavior of a High-Internal Phase Emulsion at all Relevant Length Scales.** 9th International Conference on Small-Angle Scattering. Oxford, UK, 2009. (*Talk*)

8. **Rheological Properties of a High-Internal Phase Emulsion and the Role of the Continuous phase on Stability.** European Colloid and Interface Science annual meeting. Antalya, 2009. (*Talk*)

7. **Novel Synthesis Method and Characterization of Nanoscale ZnO and MgO** Materials Research Society national meeting. San Francisco, 2007. (*Talk*)

6. **Thermodynamic Investigation of *n*-Hexane and Cyclohexane on MgO (100) Surfaces.** American Physical Society national meeting. Baltimore, 2006. (*Talk*)

5. **The Study of Thin Film Alkanes on MgO Surfaces.** American Conference on Neutron Scattering annual meeting. Chicago, 2006. (*Poster*)

4. **Neutron Diffraction Studies of Alkanes on Magnesium Oxide Surfaces.** American Conference on Neutron Scattering annual meeting. College Park, 2005. (*Poster*)

3. **Thermodynamic Studies of Alkanes adsorbed to MgO (100) Surfaces.** American Physical Society annual meeting. Los Angeles, 2005. (*Poster*)

2. **Using Neutron Spectroscopy to Study Thin Films of Ethane on Magnesium Oxide (100) Surfaces.** Los Alamos National Lab LANSCE User Group (LUG) meeting. Los Alamos, 2004. (*Poster*)

1. **Summary: Total and Differential Cross-Sections, and Polarization Effects in pp Elastic Scattering at RHIC.** State University at Stony Brook Undergraduate Research Showcase. Stony Brook, 2001. (*Poster*)

Contacts

John W. White (Supervisor)

Professor
Research School of Chemistry, Building 35
Australian National University
Acton, ACT 2601
Australia
jww@rsc.anu.edu.au
+61 02 6125 3578

John Z. Larese (Ph.D. Advisor)

Professor
University of Tennessee / Oak Ridge National Laboratory, Joint Faculty
Buehler Hall
Knoxville, TN 37996
jzl@utk.edu
(865) 974-3429

Luke Daemen

Senior Scientist
LANSCÉ
Lujan Center
Los Alamos National Laboratory
Los Alamos, NM 87544
lld@lanl.gov
(505) 667-9695