

**NICHOLAS B. TITO, PH. D**

RESEARCH ASSOCIATE • WALTER H. STOCKMAYER FELLOW  
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**Education**

- 2013 – Pres. Research Associate, University of Cambridge (beginning October 2013)  
*Research Advisor: Daan Frenkel*
- 2008 – 2013 Ph. D. in Chemistry (Physical), Dartmouth College  
*Research Advisor: Jane E. G. Lipson*
- 2004 – 2008 B. Sc. in Chemistry, *Summa Cum Laude*, University of New England (4.0/4.0 GPA)  
*Research Advisor: John Stubbs*
- 2001 – 2004 Valedictorian, Kennebunk High School

**Research Experience**

- 2008 – 2013 *Graduate Research* • Theoretical models for thermodynamic behaviour of bulk and thin film polymeric materials
- 2007 – 2008 *Undergraduate Research* • Monte Carlo molecular model of DNA melting on microarray surfaces
- 2007 *University of New England Summer Research Fellowship* • Limits for Szego polynomials in frequency analysis
- 2006 – 2008 *Independent Research* • Mechanics of standing fluid vortices
- 2005 – 2006 *Independent Research Funded by NASA Maine Space Grant Consortium* • Model for snowfall prediction in northeastern United States snowstorms

**Skills:** Analytical theory, self-consistent field theory, simulation, Monte Carlo, Linux operation and scripting, programming (Mathematica, C, Fortran, C#), computer cluster construction/management

**Committees & Leadership Roles**

- 2012 – Pres. Northeast Section Younger Chemists Committee Web Master
- 2012 – 2013 Representative for Graduate Students on Dartmouth Council on Computing
- 2012 – 2013 Chair, Graduate Student Council Web Team (member of team since 2011)
- 2012 (Aug) American Chemical Society Publications Summer Institute (1 of 15 graduate students selected from applications across U.S.)
- 2011 – 2012 Department Representative, Graduate Student Council
- 2010 – 2012 Co-Chair, 2012 Polymer Physics Gordon Research Seminar
- 2006 – 2008 Peer tutor for chemistry, mathematics, and physics at University of New England

**Honours and Awards**

- 2013 (May) Dartmouth Graduate Teaching Award
- 2013 (Mar) Walter H. Stockmayer Fellowship Award
- 2012 (Sep) John H. Wolfenden Teaching Award
- 2012 (Mar) Germany Exchange Program for the 2012 *Jungchemikerforum* chemistry conference (1 of 12 students selected from northeastern U.S. universities).
- 2011 – Pres. Graduate Assistance in Areas of National Need (GAANN) Fellow
- 2010 (Apr) Dartmouth Graduate Student Research Presentation Award
- 2008 (Apr) Jacques Downs Award for Academic Excellence. Top member of senior class in academic achievement and school service.
- 2008 (Apr) American Institute of Chemists Student Award

- 2007 (Apr) University of New England Summer Research Fellowship  
2007 (Apr) Junior Year Award for Academic Excellence  
2007 (Mar) Barry M. Goldwater Honourable Mention (National)  
2005 (Jan) NASA Maine Space Grant Consortium Research Grant

## Affiliations

Alpha Chi National Honor Society

## Publications

### Peer-Reviewed

- Tito, N. B.; Lipson, J. E. G.; Milner, S. T. Predicting mobility in fluids near kinetic arrest with a simple lattice model of free volume. In preparation.
- 2013 Tito, N. B.; Lipson, J. E. G.; Milner, S. T. Lattice model of mobility at interfaces: free surfaces, substrates, and bilayers. *Soft Matter*, **9**, 9403-9413.
- 2013 Tito, N. B.; Lipson, J. E. G.; Milner, S. T. Lattice model of dynamic heterogeneity and kinetic arrest in glass-forming liquids. *Soft Matter*, **9**, 3173-3180.
- 2012 Tito, N. B.; Milner, S. T.; Lipson, J. E. G. Ball-of-yarn conformation of a linear gradient copolymer in a homopolymer melt. *Macromolecules*, **45**, 7607-7620.
- 2010 Tito, N. B.; Milner, S. T.; Lipson, J. E. G. Self-assembly of lamellar microphases in linear gradient copolymer melts. *Macromolecules*, **43**, 10612-10620.
- 2010 Tito, N. B.; Stubbs, J. M. Application of a coarse-grained model for DNA to homo- and heterogeneous melting equilibria. *Chemical Physics Letters*, **485**, 354-359.

### General

- 2012 Tito, N. B.; Molecules Drawn on a Cave Wall. *The Nucleus*, **91** (3), 4.

## Presentation Experience (2008 – Present)

- 2013 (Mar) **American Physical Society March Meeting (National)**  
Talk • *Lattice Model of Enhanced Mobility at a Free Surface*
- 2012 (Jul) **Polymer Physics Gordon Research Conference (National)**  
Poster • *Free Volume Model of Enhanced Mobility at a Free Surface*
- 2012 (Mar) **Jungchemikerforum (Germany)**  
Poster • *Lattice Model of Free Volume Transport in Glass-Forming Liquids*
- 2012 (Feb) **American Physical Society March Meeting (National)**  
Talk • *Lattice Model of Dynamic Heterogeneity in Glassy Systems*
- 2011 (Mar) **American Physical Society March Meeting (National)**  
Talk • *Self-Assembly of Lamellar Microphases in Linear Gradient Copolymer Melts*
- 2010 (Jun) **Polymer Physics Gordon Research Conference (National)**  
Poster • *Self-Assembly of Lamellar Microphases in Linear Gradient Copolymer Melts*.
- 2010 (Apr) **Dartmouth College Graduate Student Poster Symposium**  
Poster • *Tailoring the Properties of Polymers using Theoretical Models of Local Molecular Structure*.
- 2010 (Mar) **“Second-Year Seminar”**  
Oral Presentation • *Quantum Computing: Nitrogen-Vacancy Centres in Diamond*

## Teaching Experience

- 2008 – 2011 Teaching assistant for five undergraduate physical chemistry courses at Dartmouth

- 2007 – 2008 Teaching assistant for Analytical Chemistry at University of New England  
2006 – 2008 Peer tutor for general/organic/analytical chemistry, calculus, and physics; hosted weekly organic chemistry and physics review seminars (10-20 students per session)