

## Ting Ge, Ph.D.

Horizon I Building 234, University of South Carolina  
541 Main St, Columbia, SC 29201

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### Education

- September 2007 – September 2013, Baltimore, MD, USA  
Ph.D., Department of Physics and Astronomy, Johns Hopkins University  
Advisor: Prof. Mark O. Robbins  
Dissertation: "Entanglements in Large Deformation and Mechanical Failure of Glassy Polymers"  
<https://jscholarship.library.jhu.edu/handle/1774.2/36947>
  - September 2003 – July 2007, Hefei, Anhui, P. R. China  
B.S., Department of Physics, University of Science and Technology of China
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### Research Interest

*soft materials science, polymer physics, computational physics, molecular simulation*

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### Research Experience

- January 2020 – Present, Columbia, SC, USA  
Assistant Professor,  
Department of Chemistry and Biochemistry, University of South Carolina  
*Computational and Theoretical Research in Soft Materials Science*
- January 2018 – December 2019, Durham, NC, USA  
Postdoctoral Researcher,  
Department of Mechanical Engineering and Materials Science, Duke University  
*Theoretical and Computational Research in Polymer Physics*  
Advisor: Prof. Michael Rubinstein
- October 2013 – December 2017, Chapel Hill, NC, USA  
Postdoctoral Research Associate,  
Department of Chemistry, University of North Carolina at Chapel Hill & Research Triangle MRSEC  
*Theoretical and Computational Research in Polymer Physics*  
Advisor: Prof. Michael Rubinstein
- June 2008 – September 2013, Baltimore, MD, USA  
Graduate Research Assistant,  
Department of Physics and Astronomy, Johns Hopkins University  
*Molecular Simulation in Polymer Physics*
- August 2012 – September 2013, Baltimore, MD, USA  
Graduate Student Researcher,  
Hopkins Extreme Materials Institute  
*Multiscale Modeling of Polymers and Composites*
- July 2006 – June 2007, Hefei, Anhui, P. R. China

## Awards

- 2017 Outstanding Reviewer for *Molecular Systems Design & Engineering*
  - March 2013, Finalist for the 2013 Frank J. Padden Jr. Award, Division of Polymer Physics, APS
  - December 2011, E. J. Rhee Travel Grant, Department of Physics and Astronomy, Johns Hopkins University
  - 2005, Guanghua Scholarship, University of Science and Technology of China
  - 2003, 2004 and 2006, Outstanding Student Scholarship, University of Science and Technology of China
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## Publications in Professional Journals

17. “Nonlinear Shear Rheology of Entangled Polymer Rings”, D. Parisi, S. Costanzo, Y. Jeong, J. Ahn, T. Chang, D. Vlassopoulos, J. D. Halverson, K. Kremer, T. Ge, M. Rubinstein, G. S. Grest, W. Srinin, and A. Y. Grosberg (In preparation)
16. “Effects of Tethered Polymers on Dynamics of Nanoparticles in Unentangled Polymer Melts”, T. Ge, M. Rubinstein, and G. S. Grest (Submitted)
15. “Mobility of Polymer-Tethered Nanoparticles in Unentangled Polymer Melts”, T. Ge and M. Rubinstein, *Macromolecules*, 52, 1536 (2019)
14. “Effect of Chain Length Dispersity on the Mobility of Entangled Polymers”, B. L. Peters, K. M. Salerno, T. Ge, D. Perahia, and G. S. Grest, *Phys. Rev. Lett.* 121, 057802 (2018)
13. “Resolving Properties of Entangled Polymer Melts Through Atomistic Derived Coarse-Grained Models”, G. S. Grest, K. M. Salerno, B. L. Peters, T. Ge, and D. Perahia, *Handbook of Materials Modeling*, Springer, Cham, edited by W. Andreoni and S. Yip (2018)
12. “Nanorheology of Entangled Polymer melts”, T. Ge, G. S. Grest, and M. Rubinstein, *Phys. Rev. Lett.* 120, 057801 (2018)
11. “Nanoparticle Motion in Entangled Melts of Linear and Non-Concatenated Ring Polymers”, T. Ge, J. T. Kalathi, J. D. Halverson, G. S. Grest, and M. Rubinstein, *Macromolecules*, 50, 1749 (2017)
10. “Entanglements in glassy polymer crazing: crosslinks or tubes?”, T. Ge, S. Anogiannakis, C. Tzoumanekas, R. S. Hoy, and M. O. Robbins, *Macromolecules* 50, 459 (2017)
9. “Crazing of Nanocomposites with Polymer-Tethered Nanoparticles”, D. Meng, S. K. Kumar, T. Ge, M. O. Robbins, and G. S. Grest, *J. Chem. Phys.* 145, 094902 (2016)
8. “Self-Similar Conformations and Dynamics in Entangled Melts and Solutions of Nonconcatenated Ring Polymers”, T. Ge, S. Panyukov, and M. Rubinstein, *Macromolecules* 49, 708 (2016)
7. “Strong Selective Adsorption of Polymers”, T. Ge and M. Rubinstein, *Macromolecules* 48, 3788 (2015)
6. “Tensile Fracture of Welded Polymer Interfaces: Miscibility, Entanglements and Crazing”, T. Ge, M. O. Robbins, and G. S. Grest, *Macromolecules* 47, 6982 (2014)
5. “Healing of polymer interfaces: Interfacial dynamics, entanglements, and strength”, T. Ge, M. O. Robbins, D. Perahia, and G. S. Grest, *Phys. Rev. E* 90, 012602 (2014)
4. “Coarse-Graining Atactic Polystyrene and Its Analogues”, A. Agrawal, D. Aryal, D. Perahia, T. Ge, and G. S. Grest, *Macromolecules* 47, 3210 (2014)
3. “Structure and Strength at Immiscible Polymer Interfaces”, T. Ge, G. S. Grest, and M. O. Robbins, *ACS Macro Lett.* 2, 882 (2013)

2. “Molecular Dynamics Simulation of Polymer Welding: Strength From Entanglements”, T. Ge, F. Pierce, D. Perahia, G. S. Grest, and M. O. Robbins, *Phys. Rev. Lett.* 110, 098301 (2013) (Editor’s Suggestion)
  1. “Anisotropic plasticity and chain orientation in polymer glasses”, T. Ge and M. O. Robbins, *J. Polymer Sci. B: Polymer Physics* 48, 1473 (2010)
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## Conferences and Seminars

### Invited Talks

- September 2019, Santa Fe, NM, 2019 CINT Annual Meeting,  
*“Effects of Tethered Polymers on Dynamics of Nanoparticles in Unentangled Polymer Melts”*
- January 2019, Blacksburg, VA, Department of Physics, Virginia Polytechnic Institute and State University,  
*“Rheology and Nanorheology of Entangled Melts of Non-Concatenated Ring Polymers”*
- January 2019, Champaign, IL, Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign,  
*“Rheology and Nanorheology of Entangled Melts of Non-Concatenated Ring Polymers”*
- January 2019, Columbia, SC, Department of Chemistry and Biochemistry, University of South Carolina,  
*“Rheology and Nanorheology of Entangled Melts of Non-Concatenated Ring Polymers”*
- September 2018, Clinton, NJ, ExxonMobil Corporate Strategic Research Laboratories,  
*“Welding of Polymer Interfaces: Connecting Dynamics, Structure and Mechanical Strength”*
- March 2018, Los Angeles, CA, 2018 APS March Meeting,  
Division of Polymer Physics Short Course: The Gel, Elastomers, and Network Experience  
*“Methods of Molecular Simulations as Applied to Rheology and Mechanics of Polymers”*
- August 2016, Blacksburg, VA, Department of Physics, Virginia Polytechnic Institute and State University,  
Center for Soft Matter and Biological Physics / Condensed Matter Seminar,  
*“Nanoparticle Motion in Entangled Melts of Linear and Non-Concatenated Ring Polymers”*
- April 2016, San Marcos, TX, PREM Center on Interfaces in Materials, Texas State University,  
*“Self-Similar Conformations and Dynamics of Non-Concatenated Ring Polymers”*
- March 2016, Baltimore, MD, 2016 APS March Meeting,  
*“Self-Similar Conformations and Dynamics of Non-Concatenated Ring Polymers”*,  
<https://absuploads.aps.org/presentation.cfm?pid=11630>
- June 2012, Santa Barbara, CA, Kavli Institute for Theoretical Physics,  
*“Entanglements and Mechanical Failure of Amorphous Polymers”*,  
<http://online.kitp.ucsb.edu/online/multiscale12/ge/>

### Contributed Talks

#### Keywords: Nanoparticle Dynamics, Polymer Rheology, and Polymer Dynamics

- October 2019, Raleigh, NC, 91<sup>st</sup> Annual Meeting of the Society of Rheology,  
*“Mobility of Polymer Tethered Nanoparticles in Entangled Polymer Melts”*

- May 2019, Durham, NC, 11<sup>th</sup> Triangle Soft Matter Workshop, *“Mobility of Polymer Tethered Nanoparticles in Polymer Melts”*
- October 2018, Houston, TX, 90<sup>th</sup> Annual Meeting of the Society of Rheology, *“Mobility of Polymer Tethered Nanoparticles in Polymer Melts”*
- March 2018, Los Angeles, CA, 2018 APS March Meeting *“Mobility of Polymer Tethered Nanoparticles in Polymer Melts”*
- October 2017, Denver, CO, 89<sup>th</sup> Annual Meeting of the Society of Rheology, *“Rheology and Nanorheology of Non-Concatenated Ring Polymers”*
- August 2017, Washington, DC, Symposium on Simulations of Polymeric Materials: Molecular- to Macro-Scale, 254<sup>th</sup> ACS National Meeting *“Nanorheology of Entangled Polymer Melts”*
- May 2017, Chapel Hill, NC, 9<sup>th</sup> Annual Triangle Soft Matter Workshop, *“Nanorheology of Entangled Polymer Melts”*
- March 2017, New Orleans, LA, 2017 APS March Meeting *“Molecular Dynamics Simulations of Nanoparticle-Based Rheology”*
- March 2017, New Orleans, LA, 2017 APS March Meeting *“Nanoparticle Motion in Entangled Melts of Linear and Non-Concatenated Ring Polymers”*
- May 2015, Raleigh, NC, 7<sup>th</sup> Annual Triangle Soft Matter Workshop, *“Nanoparticle Dynamics in Ring Polymers”*

**Keywords: Coarse-grained Simulations, Multi-scale Modeling**

- November 2017, Minneapolis, MN, 2017 AIChE Annual Meeting *“Effects of Coarse-Graining on Simulations of Mechanical Properties of Polymers”*
- August 2017, Washington, DC, Symposium on Simulations of Polymeric Materials: Molecular- to Macro-Scale, 254<sup>th</sup> ACS National Meeting *“Effects of Coarse-Graining on Simulations of Mechanical Properties of Polymers”*
- April 2017, Annapolis MD, 2017 Mach Conference for Multiscale Research in Materials, *“Effects of Coarse-Graining on Simulations of Mechanical Properties of Polymers”*
- April 2013, Annapolis, MD, 2013 Mach Conference for Multiscale Research in Materials, *“Molecular Simulations of Polymer Mechanics Using Coarse-Graining Techniques”*

**Keywords: Polymer Adsorption, Scaling Theory**

- March 2015, San Antonio, TX, 2015 APS March Meeting, *“Strong Selective Adsorption of Polymers”*
- October 2014, Blacksburg, VA, 2<sup>nd</sup> Virginia Soft Matter Workshop, *“Strong Selective Adsorption of Polymers”*
- May 2014, Chapel Hill, NC, 6<sup>th</sup> Annual Triangle Soft Matter Workshop, *“Strong Selective Adsorption of Polymers”*

**Keywords: Polymer Conformation and Dynamics, Ring Polymer**

- May 2016, Durham, NC, 8<sup>th</sup> Annual Triangle Soft Matter Workshop, *“Self-Similar Conformations and Dynamics of Non-Concatenated Ring Polymers”*

**Keywords: Polymer Interfaces, Polymer Entanglements**

- June 2015, Durham, NC, 5<sup>th</sup> International Conference on Self-Healing Materials, *“Welding and Healing of Polymer Interfaces: Connecting Structure, Dynamics and Strength”*
- March 2013, Baltimore, MD, 2013 APS March Meeting, *“Polymer Welding: Strength From Interfacial Entanglements”*
- January 2013, Washington, D.C., 10<sup>th</sup> Mid-Atlantic Soft Matter Workshop, *“Entanglements and Mechanical Failure of Glassy Polymers”*

- September 2012, Baltimore, MD, 22<sup>nd</sup> International Workshop on Computational Mechanics of Materials, “*Development of Interfacial Strength and Entanglements During Welding of Polymers*”
- March 2012, Boston, MA, 2012 APS March Meeting, “*Development of Interfacial Strength and Entanglements During Welding of Polymers*”
- August 2011, Albuquerque, NM, LAMMPS Users’ workshop, “*Shear Failure of Polymer Welds and Entanglements*”

**Keywords: Polymer Glasses, Polymer Mechanics**

- July 2011, Minneapolis, MN, 11<sup>th</sup> US National Congress on Computational Mechanics, “*Entanglements and Mechanical Failure of Polymer Glasses*”
- March 2011, Dallas, TX, 2011 APS March Meeting, “*Evolution of Entanglements During Crazing of Glassy Polymers*”
- March 2010, Portland, OR, 2010 APS March Meeting, “*Anisotropic Plasticity and Chain Orientation in Polymer Glasses*”
- November 2009, Baltimore, MD, 5<sup>th</sup> Mid-Atlantic Soft Matter Workshop, “*Bauschinger Effect in Polymer Glasses*”
- March 2009, Pittsburgh, PA, 2009 APS March Meeting, “*Evolution of Entanglements During Craze Formation*”

**Contributed Posters**

**Keywords: Nanoparticle Dynamics, Polymer Rheology, and Polymer Dynamics**

- July 2018, South Hadley, MA, Gordon Research Conference on Polymer Physics, “*Mobility of Polymer-Tethered Nanoparticles in Unentangled Polymer Melts*”
- October 2017, Minneapolis, MN, 2017 AIChE Annual Meeting “*Nanorheology of Entangled Polymer Melts*”
- October 2017, Denver, CO, 89<sup>th</sup> Annual Meeting of the Society of Rheology, “*Nanorheology of Entangled Polymer Melts*”
- August 2017, New London, NH, Gordon Research Conference on Soft Condensed Matter Physics, “*Nanorheology of Entangled Polymer Melts*”
- May 2017, Raleigh, NC, Symposium on Molecular Theory and Modeling: In Honor of the 80<sup>th</sup> Birthday of Professor Keith E. Gubbins “*Nanoparticle Motion in Entangled Melts of Linear and Non-Concatenated Ring Polymers*”
- July 2016, South Hadley, MA, Gordon Research Conference on Polymer Physics, “*Nanoparticle Motion in Entangled Melts of Linear and Non-Concatenated Ring Polymers*”

**Keywords: Polymer Adsorption, Scaling Theory**

- February 2016, Ventura, CA, Gordon Research Conference on Colloidal, Macromolecular & Polyelectrolyte Solutions, “*Scaling Theory for Strong Selective Adsorption of Polymers*”
- July 2014, South Hadley, MA, Gordon Research Conference on Polymer Physics, “*Scaling Theory for Strong Selective Adsorption of Polymers*”
- May 2014, Chapel Hill, NC, 6<sup>th</sup> Annual Triangle Soft Matter Workshop, “*Scaling Theory for Strong Selective Adsorption of Polymers*”

**Keywords: Polymer Interfaces, Polymer Entanglements**

- July 2013, South Hadley, MA, Gordon Research Conference on the Science of Adhesion, “*Molecular Simulation Study of Structure and Strength at Polymer Interfaces*”
- June 2012, Santa Barbara, CA, Conference on Modeling Soft Matter: Linking Multiple Length and Time Scales, “*Entanglements and Mechanical Failure of Polymer Glasses*”
- July 2011, Minneapolis, MN, 11<sup>th</sup> US National Congress on Computational Mechanics, “*Entanglements and Mechanical Failure of Polymer Glasses*”

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## Teaching Experience

- Fall 2019, Department of Mechanical Engineering and Materials Science, Duke University  
Undergraduate Research Mentor
- Fall 2018, Department of Mechanical Engineering and Materials Science, Duke University  
*Polymer Physics* Substitute Lecturer
- Fall 2017, Department of Chemistry, UNC-Chapel Hill  
*Statistical Thermodynamics* Teaching Assistant and Substitute Lecturer
- Spring 2015, Spring 2016, and Spring 2017, Department of Chemistry, UNC-Chapel Hill,  
*Graduate Cumulative Exam on Rubber Elasticity* Writer and Grader
- Spring 2014, Department of Chemistry, UNC-Chapel Hill,  
*Polymer Physics* Teaching Assistant
- Fall 2010, Department of Applied Math, JHU,  
*Advanced Parameterization* Grader
- Fall 2007, Spring 2008 and Spring 2010, Department of Physics and Astronomy, JHU,  
*General Physics* Teaching Assistant

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## Outreach

- October 2019, Raleigh, NC, Volunteer at 91<sup>st</sup> Annual Meeting of the Society of Rheology
- April 2016, Raleigh, NC, Volunteer at 2016 North Carolina Science Festival
- April 2014, Durham, NC, Volunteer at 2014 North Carolina Science Festival
- November 2011, Baltimore, MD, Volunteer at 64<sup>th</sup> Annual Meeting of the APS Division of Fluid Dynamics
- 2009, 2010, 2011, 2012 and 2013, Volunteer at Physics Fair, Department of Physics and Astronomy, JHU

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## Professional Service

- March 2018, Los Angeles, CA, 2018 APS March Meeting,  
Chair of the session “*Polyelectrolyte Complexation III: Biology and Applications*”
- March 2015, San Antonio, TX, 2015 APS March Meeting,  
Chair of the session “*Theory and Modeling of Polymer Nanocomposites, Interfaces and Surfaces*”
- March 2014, Denver, Colorado, 2014 APS March Meeting,  
Chair of the session “*Theory and Simulations of Macromolecules VII – Chain Conformation*”
- July 2014, South Hadley, MA, Gordon Research Seminar on Polymer Physics,  
Discussion leader of the session “*Mechanical Properties of Polymers*”
- 2013-2019, External proposal reviewer for the Center for Integrated Nanotechnologies at Sandia National Laboratories, Albuquerque, NM
- Referee for *Phys. Rev. Lett.*, *Phys. Rev. E*, *Phys. Rev. B*, *ACS Macro Lett.*, *Macromolecules*, *Soft Matter*, *Phys. Chem. Chem. Phys.*, *J. Phys. Chem.*, *Molecular Systems Design & Engineering*, *Polymers*, *Science Advances*

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## Other Academic Experience

- October 2018, Albuquerque, NM, visited the Center for Integrated Nanotechnologies at Sandia National Laboratories
- March 2017, Beverly, MA, participated in the spring school organized by Technical University of Berlin on *Self-Assembly in Soft Matter Systems*
- July 2012, Boulder, CO, participated in Boulder Summer School for Condensed Matter and Material Physics *Polymers in Soft and Biological Matter*
- May 2012 – June 2012, Santa Barbara, CA, visited the Kavli Institute for Theoretical Physics and participated in the program on *Physical Principles of Multiscale Modeling, Analysis, and Simulation in Soft Condensed Matter*

- July 2009, Boulder, CO, participated in Boulder Summer School for Condensed Matter and Material Physics  
*Nonequilibrium Statistical Mechanics: Fundamental Problems and Applications*
  - September 2008 – May 2009, Baltimore, MD, Integrative Graduate Education & Research Traineeship (IGERT)  
Associate in the program *Modeling Complex Systems*
-