

Nikolai V. Priezjev

ASSISTANT PROFESSOR

PERSONAL

7 APRIL 1975

Address: Dept. of Mechanical Engineering
Michigan State University
2465 Engineering Building
East Lansing, MI 48824-1226

Tel: (517) 432-9132
Fax: (517) 353-1750
Email: priezjev@egr.msu.edu
URL: <http://www.egr.msu.edu/~priezjev>

EDUCATION

Brown University, Providence, RI

Ph. D. in Physics, 2002

- Thesis title: "Simulations of nematic liquid crystals: confined geometries, phase transitions and topological defects". Thesis advisor: Prof. Robert A. Pelcovits

M. S. in Physics, 1999

Moscow Institute of Physics and Technology (MFTI, Phystech)

B. S. in Physics and Applied Mathematics, 1997

RESEARCH INTERESTS

Michigan State University, Department of Mechanical Engineering, 2005-present

Assistant Professor

- Molecular simulations of complex fluids, slip boundary conditions, fluid transport in micro- and nanofluidic systems, microfiltration, tribology, hybrid multi-scale methods, liquid crystals, polymers, lipid membranes, and statistical mechanics.

Princeton University, Department of Chemical Engineering, 2002-2005

Postdoctoral Research Associate (with Prof. Sandra M. Troain)

- Transport phenomena in micro- and nanofluidic systems: slippage at liquid-solid interfaces, thermocapillary fluid motion, dynamical and structural properties of confined polymers.

Brown University, Physics Department, 1997-2002

Research Assistant

- Theoretical soft condensed matter physics with emphasis on liquid crystals. Numerical techniques such as Monte Carlo and molecular dynamics simulations were used to study a variety of problems involving nematic liquid crystals: phase transitions, coarsening dynamics, effect of confined geometries, and topological defects.
- Systems with quenched random disorder. Methods from combinatorial optimization were implemented to find exact ground states of the strongly screened vortex glass model.

Research papers:

1. N. V. Priezjev, “Interfacial friction between semiflexible polymers and crystalline surfaces”, *Journal of Chemical Physics* **136** (2012). (Preprint: <http://arxiv.org/abs/1202.3664>).
2. N. V. Priezjev, “Molecular diffusion and slip boundary conditions at smooth surfaces with periodic and random nanoscale textures”, *Journal of Chemical Physics* **135**, 204704 (2011).
3. N. V. Priezjev, “Relationship between induced fluid structure and boundary slip in nanoscale polymer films”, *Physical Review E* **82**, 051603 (2010).
4. A. Niavarani and N. V. Priezjev, “Modeling the combined effect of surface roughness and shear rate on slip flow of simple fluids”, *Physical Review E* **81**, 011606 (2010).
5. N. V. Priezjev, “Shear rate threshold for the boundary slip in dense polymer films”, *Physical Review E* **80**, 031608 (2009).
6. A. Niavarani and N. V. Priezjev, “The effective slip length and vortex formation in laminar flow over a rough surface”, *Physics of Fluids* **21**, 052105 (2009).
7. A. Niavarani and N. V. Priezjev, “Rheological study of polymer flow past rough surfaces with slip boundary conditions”, *Journal of Chemical Physics* **129**, 144902 (2008).
8. A. Niavarani and N. V. Priezjev, “Slip boundary conditions for shear flow of polymer melts past atomically flat surfaces”, *Physical Review E* **77**, 041606 (2008).
9. N. V. Priezjev, “Effect of surface roughness on rate-dependent slip in simple fluids”, *Journal of Chemical Physics* **127**, 144708 (2007).
10. N. V. Priezjev, “Rate-dependent slip boundary conditions for simple fluids”, *Physical Review E* **75**, 051605 (2007).
11. N. V. Priezjev and S. M. Troian, “Influence of periodic wall roughness on the slip behaviour at liquid/solid interfaces: molecular scale simulations versus continuum predictions”, *Journal of Fluid Mechanics* **554**, 25 (2006).
12. N. V. Priezjev, A. A. Darhuber and S. M. Troian, “Slip behavior in liquid films on surfaces of patterned wettability: Comparison between continuum and molecular dynamics simulations”, *Physical Review E* **71**, 041608 (2005).
13. N. V. Priezjev and S. M. Troian, “Molecular origin and dynamic behavior of slip in sheared polymer films”, *Physical Review Letters* **92**, 018302 (2004).
14. N. Akino, C. Giardina, J. M. Kosterlitz, N. V. Priezjev, “Numerical study of random superconductors”, *Physica C* **408**, 484 (2004).
15. N. V. Priezjev, G. Skacej, R. A. Pelcovits, and S. Zumer, “External and intrinsic anchoring in nematic liquid crystals: A Monte Carlo study”, *Physical Review E* **68**, 041709 (2003).
16. I. Amimori, N. V. Priezjev, R. A. Pelcovits, and G. P. Crawford, “Optomechanical properties of stretched polymer dispersed liquid crystal films for scattering polarizer applications”, *Journal of Applied Physics* **93**, 3284 (2003).

17. P. A. Kossyrev, J. Qi, N. V. Priezjev, R. A. Pelcovits, and G. P. Crawford, "Virtual surfaces, director domains and the Fréedericksz transition in polymer stabilized nematic liquid crystals", *Applied Physics Letters* **81**, 2986 (2002).
18. N. V. Priezjev and R. A. Pelcovits, "Coarsening dynamics of biaxial nematic liquid crystals", *Physical Review E* **66**, 051705 (2002).
19. N. V. Priezjev and R. A. Pelcovits, "Disclination loop behavior near the nematic-isotropic phase transition", *Physical Review E* **64**, 031710 (2001).
20. N. V. Priezjev and R. A. Pelcovits, "Cluster Monte Carlo simulations of the nematic-isotropic phase transition", *Physical Review E* **63**, 062702 (2001).
21. N. V. Priezjev and R. A. Pelcovits, "Surface extrapolation length and director structures in confined nematics", *Physical Review E* **62**, 6734 (2000).

Proceedings:

1. P. A. Kossyrev, J. Qi, N. V. Priezjev, R. A. Pelcovits, and G. P. Crawford, "Modeling electro-optic performance in polymer stabilized nematic liquid crystal display configurations", *Asian Symposium on Information Display 2002 Proceedings* **7**, 371-374 (2002).
2. P. A. Kossyrev, J. Qi, N. V. Priezjev, R. A. Pelcovits, and G. P. Crawford, "Model of Fréedericksz transition and hysteresis effect in polymer stabilized nematic liquid crystal configurations for display applications", *Society for Information Display Digest* **32**, 506-509 (2002).
3. I. Amimori, J. N. Eakin, N. V. Priezjev, R. A. Pelcovits, and G. P. Crawford, "Optical and mechanical properties of stretched PDLC films for scattering polarizers", *Society for Information Display Digest* **33**, 834-837 (2002).

Unpublished manuscripts:

1. C. Giardina, N. V. Priezjev and J. M. Kosterlitz, "Strongly screened vortex lattice model with disorder" (2003). (Preprint is available online at <http://arxiv.org/abs/cond-mat/0202487>).
2. N. V. Priezjev and S. M. Troian, "Nanodroplet migration by thermal tuning of the liquid-solid interfacial tension", to be submitted to *Physical Review E* (2012).
3. N. V. Priezjev, "Fluid structure and boundary slippage in nanoscale liquid films", to appear in a book "Detection of pathogens using micro- and nano-technology", IWA Publishing (2012). (Preprint: http://www.egr.msu.edu/~priezjev/papers/slip_structure_book_chapter.pdf).
4. N. V. Priezjev, "Molecular dynamics simulations of oscillatory Couette flows with slip boundary conditions", submitted to *Microfluidics and Nanofluidics* (2012).

Talks at conferences and seminars:

1. N. V. Priezjev, “*Atomistic modeling of the structure and shear response in nanoscale polymer films*”, colloquium “Materials Modeling – Hierarchies on the Atomic Scale”, RWTH Aachen University, Aachen, Germany, April 16, 2012.
2. N. V. Priezjev, “*Molecular diffusion and tensorial slip at surfaces with periodic and random nanoscale textures*”, APS March Meeting, Session X50: Focus Session: Micro and Nano Fluidics II: Structured or Active Surfaces and Electrotransport, Boston, MA, March 1, 2012.
3. A. Kharazmi and N. V. Priezjev, “*Investigation of flow boundary conditions and diffusion in nanochannels using molecular dynamics simulations*”, APS 64th DFD Meeting, Session D2: Nanofluids I, Baltimore, MD, November 20, 2011.
4. N. V. Priezjev, “*Molecular diffusion and tensorial slip at surfaces with periodic and random nanoscale textures*”, APS 64th DFD Meeting, Session D2: Nanofluids I, Baltimore, MD, November 20, 2011. (Chair of the Session D2: Nanofluids I).
5. T. Darvishzadeh and N. V. Priezjev, “*Strategies for efficient microfiltration of oil-in-water emulsions*”, APS 64th DFD Meeting, Session A4: Drops I: Numerical Methods, Baltimore, MD, November 20, 2011.
6. N. V. Priezjev, “*Slip flow regimes and induced fluid structure in nanoscale polymer films: recent results from molecular dynamics simulations*”, seminar in the Liquid Crystal Institute, Kent State University, Kent, OH, September, 28, 2011.
7. N. V. Priezjev, “*Slip flow regimes and induced structure in nanoscale liquid films: Recent results from molecular dynamics simulations*”, NNIN/C Symposium "Advanced Modeling and Simulation of NEMS/MEMS and Nano/Micro-fluidic Devices", University of Michigan, Ann Arbor, MI, April 20, 2011. (Website: <http://www.lnf.umich.edu/nnin-at-michigan>).
8. N. V. Priezjev, “*Molecular dynamics simulation study of slip flows over surfaces with periodic and random anisotropic textures*”, APS March Meeting, Session Q44: Focus Session: Dynamics of Polymers – Phenomena due to Confinement, Dallas, TX, March 23, 2011.
9. N. V. Priezjev, “*The relationship between induced fluid structure and boundary slip in nanoscale polymer films*”, APS 63nd DFD Meeting, Session AP: Nanofluids I, Long Beach, CA, November 21, 2010.
10. N. V. Priezjev, “*The relationship between induced fluid structure and boundary slip in nanoscale polymer films*”, seminar in the Department of Mechanical Engineering, Michigan State University, East Lansing, MI, October 5, 2010.
11. N. V. Priezjev, “*The relationship between induced fluid structure and boundary slip in nanoscale polymer films*”, seminar in the Applied Physics Department, California Institute of Technology, Pasadena, CA, August 16, 2010.

12. N. V. Priezjev, “*The relationship between induced fluid structure and boundary slip in nanoscale polymer films*”, Workshop on Nano-Bio Mathematics and Mechanics, Department of Mathematics, Michigan State University, East Lansing, MI, August 5, 2010.
13. N. V. Priezjev, “*The relationship between induced fluid structure and boundary slip in nanoscale polymer films*”, seminar in the Department of Chemical and Biomolecular Engineering, Johns Hopkins University, Baltimore, MD, July 8, 2010.
14. N. V. Priezjev, “*Inverse problem for slip boundary conditions in nanoscale polymer films: A molecular dynamics simulation approach*”, Inverse Problems Symposium, Michigan State University, East Lansing, MI, June 8, 2010.
15. N. V. Priezjev, “*Influence of shear rate and fluid density on slip boundary conditions in nanoscale polymer films confined between smooth surfaces: A molecular dynamics study*”, Applied Mathematics Colloquium, the University of Western Ontario, London, Canada, May 11, 2010.
16. A. Niavarani and N. V. Priezjev, “*Slip boundary conditions for the moving contact line in molecular dynamics and continuum simulations*”, APS March Meeting, Session X12: General Fluid Mechanics: Surface and Thermal Effects, Portland, OR, March 18, 2010.
17. N. V. Priezjev, “*Unified description of the slip phenomena in sheared polymer films: A molecular dynamics study*”, APS March Meeting, Focus Session Q17: Glass Transition in Thin Films, Portland, OR, March 17, 2010.
18. N. V. Priezjev, “*Effect of shear rate and surface energy on slip boundary conditions in thin polymer films confined between atomically smooth surfaces: A molecular dynamics study*”, Polymer Division Seminar at the National Institute of Standards and Technology (NIST), Gaithersburg, MD, March 8, 2010.
19. N. V. Priezjev, “*Effect of shear rate and surface energy on slip boundary conditions in thin polymer films confined between atomically smooth surfaces: A molecular dynamics study*”, Oakland University, Colloquium at the Department of Physics, Rochester, MI, February 11, 2010.
20. N. V. Priezjev, “*Shear rate threshold for the boundary slip in dense polymer films*”, Materials Research Society (MRS) Fall Meeting, Session JJ9: Friction and Nanotribology, Boston, MA, December 3, 2009.
21. N. V. Priezjev, “*Shear rate threshold for the boundary slip in dense polymer films*”, APS 62nd DFD Meeting, Session MG: Nano-Fluids, Minneapolis, MN, November 24, 2009.
22. A. Niavarani and N. V. Priezjev, “*Modeling the combined effect of surface roughness and shear rate on slip flow of simple fluids*”, APS 62nd DFD Meeting, Session PF: Microfluidics: Slip and Experimental Methods, Minneapolis, MN, November 24, 2009.
23. N. V. Priezjev, “*Shear rate threshold for the boundary slip in dense polymer films*”, Midwest Thermodynamics and Statistical Mechanics Conference, Wayne State University, Detroit, MI, May 19, 2009.
24. N. V. Priezjev, “*Shear rate threshold for the onset of boundary slip in dense polymer films*”, APS March Meeting, Session W20: Theory and Simulation, Pittsburgh, PA, March 19, 2009.

25. A. Niavarani and N. V. Priezjev, “*Modeling the combined effect of surface roughness and shear rate on slip flow of simple fluids*”, APS March Meeting, Session A13: Metropolis Thesis Prize and Multiscale Modeling, Pittsburgh, PA, March 16, 2009.
26. A. Niavarani and N. V. Priezjev, “*The effective slip length and vortex formation in laminar flow over a rough surface*”, APS 61st DFD Meeting, Session AN: Micro Fluids, San Antonio, TX, November 23, 2008.
27. N. V. Priezjev and A. Niavarani, “*Velocity-dependent friction at the interface between a polymer melt and a solid substrate: A molecular dynamics study*”, AIChE Meeting, Session # 562: Solid-Liquid Interfaces, Philadelphia, PA, November 19, 2008.
28. N. V. Priezjev, “*Slip boundary conditions for shear flow of simple fluids and polymer melts past atomically smooth surfaces: A molecular dynamics study*”, Complex Fluids Seminar, Department of Chemical Engineering, University of Michigan, Ann Arbor, MI, April 18, 2008.
29. N. V. Priezjev and A. Niavarani, “*Velocity-dependent friction coefficient at the interface between a polymer melt and a solid substrate*”, APS March Meeting, Session J9: Fluid Structure and Properties, New Orleans, LA, March 11, 2008. (Chair of the Session J9).
30. A. Niavarani and N. V. Priezjev, “*Slip behavior of the confined polymer melt near periodically roughened surface: comparison between molecular dynamics and continuum simulations*”, APS March Meeting, Session D18: Polymers at Surfaces, New Orleans, LA, March 10, 2008.
31. N. V. Priezjev and A. Niavarani, “*Molecular dynamics simulations of the shear-rate-dependent slip length in thin liquid films*”, APS 60th DFD Meeting, Session EN: Nano-Fluids, Salt Lake City, Utah, November 18, 2007.
32. A. Niavarani and N. V. Priezjev, “*Slip behavior of the confined polymer melt near periodically roughened surface: comparison between molecular dynamics and continuum simulations*”, APS 60th DFD Meeting, Session KA: Micro- Fluids, Salt Lake City, Utah, November 20, 2007.
33. N. V. Priezjev, “*To slip or not to slip?*”, College of Science Seminar, Department of Mathematics, George Mason University, Fairfax, VA, April 12, 2007.
34. N. V. Priezjev, “*Slip behavior at liquid/solid interfaces: Comparison between continuum and molecular dynamics simulations*”, Department of Mechanical Engineering, University of Michigan-Dearborn, MI, March 30, 2007.
35. N. V. Priezjev, “*Effect of surface roughness on shear-rate-dependent slip flow of simple fluids*”, APS March Meeting, Session U29: Suspensions and Fluid Dynamics, Denver, CO, March 8, 2007.
36. N. V. Priezjev, “*Effect of surface roughness on shear-rate-dependent slip flow of simple fluids*”, APS 59th DFD Meeting, Session KC: Microfluidics, Tampa, FL, November 20, 2006.
37. N. V. Priezjev, “*Influence of surface conditions on the slip behavior at liquid/solid interfaces: Comparison between continuum and molecular dynamics simulations*”, Applied and

Interdisciplinary Mathematics Seminar, Michigan State University, East Lansing, MI, November 14, 2006.

38. N. V. Priezjev, “*Influence of surface conditions on the slip behavior at liquid/solid interfaces: Comparison between continuum and molecular dynamics simulations*”, Condensed Matter Physics Seminar, Physics Department, Michigan State University, East Lansing, MI, October 9, 2006.
39. A. A. Darhuber, N. V. Priezjev, and S. M. Troian, “*Slip behavior at liquid/solid interfaces: hydrodynamic predictions versus molecular dynamics simulations*”, 5th International Symposium on Contact Angle, Wettability and Adhesion, Session on Colloids, Powders and Droplets: Fractal and Wetting Aspects, Toronto, Canada, June 21, 2006.
40. N. V. Priezjev and S. M. Troian, “*Source of shear-dependent slip at liquid/solid interfaces*”, APS March Meeting, Session P21: Microfluidic Physics, Baltimore, MD, March 15, 2006.
41. N. V. Priezjev and S. M. Troian, “*Dynamic response of the slip length at liquid/solid interfaces*”, Materials Research Society (MRS) Fall Meeting, Session N1: Dynamics in Small Confined Systems, Boston, MA, November 28, 2005.
42. N. V. Priezjev and S. M. Troian, “*Source of shear-dependent slip at liquid/solid interfaces*”, APS 58th DFD Meeting, Session FC, Microfluidics: Slip Flow, Chicago, IL, November 21, 2005.
43. N. V. Priezjev, “*Slip behavior in liquid nanoscale films: influence of molecular ordering, wall roughness, and patterned surface energy*”, Department of Chemical Engineering and Materials Science, Michigan State University, East Lansing, MI, October 13, 2005.
44. N. V. Priezjev, “*Slip behavior in liquid nanoscale films: influence of molecular ordering, wall roughness and patterned surface energy*”, Department of Engineering Sciences and Applied Mathematics, Northwestern University, Evanston, IL, September 30, 2005.
45. N. V. Priezjev, “*Slip behavior in liquid nanoscale films: influence of molecular ordering, wall roughness and patterned surface energy*”, Department of Chemical Engineering, Complex Fluids Seminar, University of Michigan, Ann Arbor, MI, September 21, 2005.
46. N. V. Priezjev, “*Slip behavior in liquid nanoscale films: influence of molecular ordering, wall roughness and patterned surface energy*”, Department of Mechanical Engineering, Michigan State University, East Lansing, MI, May 6, 2005.
47. N. V. Priezjev, “*Slip behavior in liquid nanoscale films: influence of molecular ordering, wall roughness and patterned surface energy*”, APS March Meeting, Invited Session U6: Physics of Slip Phenomena at Liquid/Solid Interfaces, Los Angeles, CA, March 24, 2005.
48. N. V. Priezjev, “*Slip behavior in liquid nanoscale films: influence of molecular ordering, wall roughness and patterned surface energy*”, Physics Department seminar, Brown University, Providence, RI, April 21, 2005.
49. N. V. Priezjev and S. M. Troian, “*Droplet migration by modulation of the liquid-solid interfacial energy*”, APS 57th DFD Meeting, Session KP: Surface Tension, Seattle, WA, November 23, 2004.

50. N. V. Priezjev, A. A. Darhuber, and S. M. Troian, “*Slip flow on surfaces of mixed wettability: comparison between continuum and molecular dynamics simulations*”, APS 57th DFD Meeting, Session AC: Microfluid Dynamics: Micropatterned Surfaces and Wettability, Seattle, WA, November 21, 2004.
51. A. A. Darhuber, N. V. Priezjev, and S. M. Troian, “*Microfluidic drag reduction mediated by superhydrophobic surfaces*”, SPIE Optics East Symposium, Philadelphia, PA, October 25-28, 2004.
52. N. V. Priezjev and S. M. Troian, “*Origin of slip phenomena in sheared nanoscale films*”, 8th Complex Fluids Symposium, Princeton University, Princeton Materials Institute, May 1, 2004.
53. N. V. Priezjev and S. M. Troian, “*Droplet propulsion by thermal modulation of the liquid-solid interfacial energy*”, APS March Meeting, Session V22: Complex Fluids, Montreal, Canada, March 25, 2004.
54. N. V. Priezjev, A. A. Darhuber, and S. M. Troian, “*Effect of hydrophobically patterned substrates on the slip behavior of liquids subject to planar shear*”, APS March Meeting, Session W34: Multiscale Phenomena for Fluids and Solids, Montreal, Canada, March 25, 2004.
55. N. V. Priezjev and S. M. Troian, “*Influence of surface corrugation on the slip length in sheared liquid films*”, APS March Meeting, Session S22: Fluid Dynamics and Properties, Montreal, Canada, March 24, 2004.
56. N. V. Priezjev and S. M. Troian, “*Molecular origin and dynamic behavior of slip in short polymer films*”, APS 56th DFD Meeting, Session on Computational Fluid Dynamics, Meadowlands, NJ, November 25, 2003.
57. N. V. Priezjev and S. M. Troian, “*Influence of surface boundary curvature on local slip in sheared fluid flow*”, APS 56th DFD Meeting, Session on Computational Fluid Dynamics, Meadowlands, NJ, November 25, 2003.
58. N. V. Priezjev and S. M. Troian, “*Equilibrium and dynamical behavior of slip in polymer films*”, ASME, Session on Tribology: Surface Friction, paper TRIB-1, Washington, D.C., November 16, 2003.
59. N. V. Priezjev and S. M. Troian, “*Equilibrium and dynamical behavior of slip in polymer films*”, ASME, Session on Modeling and Simulation of Micro-/Nano- Scale Fluid Dynamics, paper AMD.1C, Washington, D.C., November 19, 2003.
60. N. V. Priezjev, “*Molecular origin and dynamic behavior of slip in sheared polymer films*”, Princeton University, Physics Department, Brown Bag Seminar, October 7, 2003.
61. N. V. Priezjev and S. M. Troian, “*Molecular origin and dynamic behavior of slip in short polymer films*”, 14th Complex Fluid Workshop, University of Massachusetts, Boston, MA, March 21, 2003.
62. N. V. Priezjev and S. M. Troian, “*Slip behavior of short chain polymers in nano-couette flow*”, APS March Meeting, Focus Session P13: Micro/Nano- Fluidics, Austin, TX, March 5, 2003.

63. N. V. Priezjev and R. A. Pelcovits, “*Coarsening dynamics of biaxial nematics*”, APS March Meeting, Session Q26: Liquid Crystals, Indianapolis, IN, March 20, 2002.
64. N. V. Priezjev, “*Disclination loop behavior near the nematic-isotropic phase transition*”, Boston University, Physics Department, Boston, MA, January 20, 2002.
65. N. V. Priezjev and R. A. Pelcovits, “*Coarsening dynamics of biaxial nematic liquid crystals*”, 9th Complex Fluid Workshop, Harvard University, Cambridge, MA, December 7, 2001.
66. N. V. Priezjev and R. A. Pelcovits, “*Coarsening dynamics of biaxial nematics*”, 86th Statistical Mechanics Meeting, Rutgers University, NJ, December 18, 2001.
67. N. V. Priezjev and R. A. Pelcovits, “*Disclination loop behavior near the nematic-isotropic phase transition*”, DCOMP 2001, Session H4: Phase Transitions and Computational Methods, MIT, Cambridge, MA, June 26, 2001.
68. N. V. Priezjev and R. A. Pelcovits, “*Surface extrapolation length and director structures in confined nematics*”, APS March Meeting, Session W19: Liquid Crystals: Surfaces and Confined Geometry, Seattle, WA, March 15, 2001.
69. N. V. Priezjev and R. A. Pelcovits, “*Surface extrapolation length and director structures in confined nematics*”, seminar at the University of Colorado, Boulder, CO, July 16, 2000.
70. N. V. Priezjev and R. A. Pelcovits, “*Surface extrapolation length and director structures in confined nematics*”, 2nd Complex Fluid Workshop, University of Massachusetts Amherst, MA, June 15, 2000.
71. N. V. Priezjev and R. A. Pelcovits, “*Surface extrapolation length in confined nematic liquid crystals*”, University of Ljubljana, Physics Department, Slovenia, February 26, 2000.

Poster presentations:

(underline indicates presenter)

1. N. V. Priezjev, “*The relationship between induced fluid structure and boundary slip in nanoscale polymer films*”, Materials Research Society (MRS) Fall Meeting, Session JJ5, Boston, MA, December 1, 2010.
2. A. Niavarani and N. V. Priezjev, “*Effect of surface roughness on slip flows in nano-scale polymer films*”, Poster Session, APS 60th DFD Meeting, Salt Lake City, UT, November 19, 2007.
3. N. V. Priezjev and S. M. Troian, “*Effect of boundary curvature and local slip in nanofluidic shear flow*”, APS March Meeting, Poster Session R1, Austin, TX, March 5, 2003.
4. N. V. Priezjev and R. A. Pelcovits, “*Disclination loop behavior near the nematic-isotropic phase transition*”, APS March Meeting, Poster Session P33, Indianapolis, IN, March 20, 2002.
5. N. V. Priezjev and R. A. Pelcovits, “*Disclination loop behavior near the nematic-isotropic phase transition*”, STATPHYS 21, Cancun, Mexico, July 19, 2001.

SHORT COURSES AND WORKSHOPS ATTENDANCE

- Participant at the Boulder Summer School for Condensed Matter and Materials Physics “*Introduction to Superconductivity: Fundamentals and Applications*”, July 2-29, 2000.
- Grants 101: Professional Grant Proposal Writing Workshop at the University of Michigan, Ann Arbor, MI, August 21-23, 2006.
- Workshop on the Graduate Assistance in Areas of National Need (GAANN), U.S. Department of Education, Washington, DC, September 28-29, 2006.
- National Effective Teaching Institute (NETI) Workshop and the ASEE Conference, Honolulu, Hawaii, June 21-27, 2007.
- Spring Institute on College Teaching and Learning Program C: Creativity and Innovation: Enhancing Performance and Effectiveness, Michigan State University, May 19-20, 2011.

COURSES TAUGHT AT MICHIGAN STATE

- ME 361: [Engineering Mechanics: Dynamics](#) (Fall 2006, Spring 2008, Spring 2009, Fall 2009, Spring 2010, Fall 2010, Fall 2011, Spring 2012).
- ME 891: [Molecular Modeling in Engineering: Methods and Applications](#) (Fall 2008, Spring 2011).
- ME 481: [Mechanical Engineering Design](#) (Whirlpool - Spring 2006; DeVilbiss Automotive Refinishing - Fall 2007; Dow Chemical - Spring 2010; Heartwood School - Fall 2011; Special Needs Bicycle - Fall 2011; Heartwood School - Spring 2012).
- ME 391: [Advanced Engineering Mathematics](#) (Spring 2006).

GRANTS AND AWARDS

- Michigan State University, Intramural Research Grants Program (IRGP) Award, (PI: N. Priezjev) \$50,000 (2005-2007).
- American Chemical Society, Petroleum Research Fund (PRF) Grant, “*Numerical Modeling of Fluid Droplet Spreading and Contact Angle Hysteresis*” (PI: N. Priezjev) \$50,000 (2008-2010).
- NSF, CBET, Cyber-Enabled Discovery and Innovation (CDI) Grant, “*CDI-Type II: Discovery of Biophysical Mechanisms Inducing Signaling and Cytotoxicity: An Experimental Approach Enabled by Cyber Tools*” (PI: C. Chan) \$1,272,629 (2009-2013).
- Michigan State University, Strategic Partnership Grant (SPG) “*Advanced Membrane Technologies for a Sustainable Future*” (PI: V. Tarabara) \$400,000 (2010-2013).
- NSF, CBET, Fluid Dynamics Program, “*Influence of Confinement on Flow, Diffusion, and Boundary Conditions in Nano Channels: A Combined Quantum Dot Imaging and Molecular*

Dynamics Simulations Approach” (PI: N. Priezjev, co-PI: M. Koochesfahani) \$360,000 (2010-2013).

CURRENT PH.D. STUDENTS

- Vahid Mirjalili. Project title: “Multiscale Modeling of Lipid Membranes and Proteins”.
- Tohid Darvishzadeh. Project title: “Numerical Modeling of the Effective Microfiltration of Oil-in-Water Emulsions”.
- Ali Kharazmi. Project title: “Modeling Flows and Nanoparticle Transport and Diffusion in Nanochannels”.

FORMER PH.D. STUDENTS

- Anooosheh Niavarani. Thesis title: “Molecular Dynamics and Continuum Simulations of Fluid Flows with Slip Boundary Conditions”. Ph.D. Spring 2011. College of Engineering Fitch Beach Outstanding Graduate Research Award 2010. (Now postdoc in Caltech).

PROFESSIONAL ACTIVITIES

- *Referee for Physical Review E, Physical Review Letters, Europhysics Letters, Journal of Computational Physics, Journal of Chemical Physics, Journal of Physical Chemistry, Microfluidics and Nanofluidics, Journal of Colloid and Interface Science, Physics of Fluids, Journal of Fluid Mechanics, Langmuir, Journal of Applied Physics, Applied Physics Letters, Mathematical Modeling of Natural Phenomena, Scientia Iranica, ASME Journal of Fluids Engineering, Heat Transfer Engineering, Structural and Multidisciplinary Optimization.*
- *Reviewer of proposals for the NSF and ACS Petroleum Research Fund.*
- Member of the American Physical Society (APS), Material Research Society (MRS), American Society of Engineering Education (ASEE).