Nikolai V. Priezjev

Address: Washington, D.C. 20059 Email: npriezjev@yahoo.com; Research Gate, LinkedIn, YouTube

Expertise: Materials Science, Computational Physics, Data Science, and High Performance Computing.

EDUCATION

Brown University, Providence, RI

Ph. D. in Physics, 1997-2002

Thesis title: *"Simulations of nematic liquid crystals: Confined geometries, phase transitions and topological defects"*, PDF, PPT. Thesis advisor: Prof. Robert A. Pelcovits.

Moscow Institute of Physics and Technology (MFTI, Phystech, JINR)

B. S. in Physics and Applied Mathematics, 1992-1997

PROFESSIONAL EXPERIENCE

ORCID, WWW

Howard University, Department of Civil and Environmental Engineering, 2023-present

Research topics: thermo-mechanical processing of metallic glasses and polymers, thermal treatment of amorphous alloys, mechanics of porous glasses, microfiltration of oil-in-water emulsions, diffusion of Janus nanoparticles, slip boundary conditions for liquid flows over superhydrophobic surfaces, ice adhesion on nanostructured surfaces, and wetting properties of structured interfaces.

The Henry M. Jackson Foundation for the Advancement of Military Medicine, BHSAI, 2020-2022

Research Scientist

Wright State University, Department of Mechanical and Materials Engineering, 2013-present

Assistant Professor, 2013-2020

Michigan State University, Department of Mechanical Engineering, 2005-2013

Adjunct Professor, 2013-2018

Princeton University, Department of Chemical and Biological Engineering, 2002-2005

Postdoctoral Research Associate

Brown University, Physics Department, 1997-2002

Graduate Research Assistant

Theoretical soft condensed matter physics with emphasis on liquid crystals. I used numerical techniques such as Monte Carlo and molecular dynamics simulations to study a variety of problems involving nematic liquid crystals, i.e., the nematic-isotropic phase transition, coarsening dynamics, effects of confined geometries, and topological line and point defects.

Research papers:

1. N. V. Priezjev, "Structural relaxation and delayed yielding in cyclically sheared Cu-Zr metallic glasses", *Metals* **14**, 984 (2024). DOI
2. N. V. Priezjev, "Fatigue behavior of Cu-Zr metallic glasses under cyclic loading", *Metals* **13**, 1606 (2023). Special Issue: *Entropic Alloys and Meta-Metals*. DOI, PDF
3. N. V. Priezjev, "Fatigue failure of amorphous alloys under cyclic shear deformation", *Computational Materials Science* **226**, 112230 (2023). DOI, PDF
4. P. K. Jana and N. V. Priezjev, "Relaxation dynamics in amorphous alloys under asymmetric cyclic shear deformation", *Journal of Non-Crystalline Solids* **600**, 121996 (2023). DOI, PDF
5. J. Reifman, F. G. Vital-Lopez, and N. V. Priezjev, "Sleep tracker: How accurate does it need to be?", *Sleep* **46**, A85 (2023). DOI
6. J. Reifman, N. V. Priezjev, and F. G. Vital-Lopez, "Can we rely on wearable sleep-tracker devices for fatigue management?", *Sleep* **47**, zsad288 (2024). DOI, PDF
7. N. V. Priezjev, F. G. Vital-Lopez, and J. Reifman, "Assessment of the unified model of performance: accuracy of group-average and individualised alertness predictions", *Journal of Sleep Research* **32**, e13626 (2022). DOI, PDF
8. N. V. Priezjev, "Mechanical annealing and yielding transition in cyclically sheared binary glasses", *Journal of Non-Crystalline Solids* **590**, 121697 (2022). DOI, PDF
9. L. Ren, H. Hu, L. Bao, N. V. Priezjev, J. Wen, L. Xie, "Two local slip modes at the liquid-liquid interface over liquid-infused surfaces", *Physics of Fluids* **34**, 082017 (2022). DOI, PDF
10. N. V. Priezjev, "Yielding transition in stable glasses periodically deformed at finite temperature", *Computational Materials Science* **200**, 110831 (2021). DOI, PDF
11. N. V. Priezjev, "Shear band healing in amorphous materials by small-amplitude oscillatory shear deformation", *Journal of Non-Crystalline Solids* **566**, 120874 (2021). DOI, PDF
12. N. V. Priezjev, "Accessing a broader range of energy states in metallic glasses by variable-amplitude oscillatory shear", *Journal of Non-Crystalline Solids* **560**, 120746 (2021). DOI, PDF
13. N. V. Priezjev, "Cooling under applied stress rejuvenates amorphous alloys and enhances their ductility", *Metals* **11**, 67 (2021). Special Issue: *Mechanical and Mechanochemical Synthesis of Alloys*. DOI, PDF
14. N. V. Priezjev, "Accelerated rejuvenation in metallic glasses subjected to elastostatic compression along alternating directions", *Journal of Non-Crystalline Solids* **556**, 120562 (2021). DOI, PDF

[1] Citation reports: Google Scholar, Scopus (data), ScholarGPS

15. N. V. Priezjev, "A delayed yielding transition in mechanically annealed binary glasses at finite temperature", *Journal of Non-Crystalline Solids* **548**, 120324 (2020). DOI, PDF

16. A. Thomas and N. V. Priezjev, "Molecular dynamics simulation study of a polymer droplet transport over an array of spherical nanoparticles", *Computational Materials Science* **184**, 109872 (2020). DOI, PDF, PPT

17. N. V. Priezjev, "Alternating shear orientation during cyclic loading facilitates yielding in amorphous materials", *Journal of Materials Engineering and Performance* **29**, 7328 (2020). DOI, PDF

18. P. K. Jana and N. V. Priezjev, "Structural relaxation in amorphous materials under cyclic tension-compression loading", *Journal of Non-Crystalline Solids* **540**, 120098 (2020). DOI, PDF

19. N. V. Priezjev, "Shear band formation in amorphous materials under oscillatory shear deformation", *Metals* **10**, 300 (2020). DOI, PDF

20. N. V. Priezjev, "Spatiotemporal analysis of nonaffine displacements in disordered solids sheared across the yielding point", *Metallurgical and Materials Transactions A* **51**, 3713-3720 (2020). DOI, PDF

21. N. V. Priezjev, "The effect of thermal history on the atomic structure and mechanical properties of amorphous alloys", *Computational Materials Science* **174**, 109477 (2020). DOI, PDF

22. X. Geng, X. Yu, L. Bao, N. V. Priezjev, Y. Lu, "Directed transport of liquid droplets on vibrating substrates with asymmetric corrugations and patterned wettability: A dissipative particle dynamics study", *Molecular Simulation* **46**, 33-40 (2020). DOI, PDF

23. L. Bao, N. V. Priezjev, H. Hu, "The local slip length and flow fields over nanostructured superhydrophobic surfaces", *International Journal of Multiphase Flow* **126**, 103258 (2020). DOI, PDF

24. N. V. Priezjev, "Accelerated relaxation in disordered solids under cyclic loading with alternating shear orientation", *Journal of Non-Crystalline Solids* **525**, 119683 (2019). DOI, PDF

25. N. V. Priezjev, "Aging and rejuvenation during elastostatic loading of amorphous alloys: A molecular dynamics simulation study", *Computational Materials Science* **168**, 125 (2019). DOI, PDF, PPT

26. N. V. Priezjev, "Atomistic modeling of heat treatment processes for tuning the mechanical properties of disordered solids", *Journal of Non-Crystalline Solids* **518**, 128 (2019). DOI, PDF

27. Q.-L. Liu and N. V. Priezjev, "The influence of complex thermal treatment on mechanical properties of amorphous materials", *Computational Materials Science* **161**, 93-98 (2019). DOI, PDF

28. N. V. Priezjev, "The potential energy states and mechanical properties of thermally cycled binary glasses", *Journal of Materials Research* **34**, 2664 (2019). DOI, PDF

29. N. V. Priezjev and M. A. Makeev, "Structural transformations during periodic deformation of low-porosity amorphous materials", *Modelling and Simulation in Materials Science and Engineering* **27**, 025004 (2019). DOI, PDF

30. N. V. Priezjev and M. A. Makeev, "The influence of periodic shear on structural relaxation and pore redistribution in binary glasses", *Journal of Non-Crystalline Solids* **506**, 14-20 (2019). DOI, PDF

31. N. V. Priezjev, "The effect of cryogenic thermal cycling on aging, rejuvenation, and mechanical properties of metallic glasses", *Journal of Non-Crystalline Solids* **503**, 131 (2019). DOI, PDF, PPT

32. N. V. Priezjev and M. A. Makeev, "Structural relaxation of porous glasses due to internal stresses and deformation under tensile loading at constant pressure", *Computational Materials Science* **156**, 376-384 (2019). DOI, PDF

33. T. Darvishzadeh, B. Bhattarai, N. V. Priezjev, "The critical pressure for microfiltration of oil-in-water emulsions using slotted-pore membranes", *Journal of Membrane Science* **563**, 610-616 (2018). DOI, PDF

34. N. V. Priezjev, "Slow relaxation dynamics in binary glasses during stress-controlled, tension-compression cycling loading", *Computational Materials Science* **153**, 235-240 (2018). DOI, PDF

35. N. V. Priezjev, "The yielding transition in periodically sheared binary glasses at finite temperature", *Computational Materials Science* **150**, 162-168 (2018). DOI, PDF

36. N. V. Priezjev and M. A. Makeev, "Structural transformations and mechanical properties of porous glasses under compressive loading", *Journal of Non-Crystalline Solids* **500**, 1-10 (2018). DOI, PDF

37. H. Hu, D. Wang, F. Ren, L. Bao, N. V. Priezjev, J. Wen, "A comparative analysis of the effective and local slip lengths for liquid flows over a trapped nanobubble", *International Journal of Multiphase Flow* **104**, 166-173 (2018). DOI, PDF

38. N. V. Priezjev and M. A. Makeev, "Strain-induced deformation of the porous structure in binary glasses under tensile loading", *Computational Materials Science* **150**, 134 (2018). DOI, PDF

39. B. Bhattarai and N. V. Priezjev, "Wetting properties of structured interfaces composed of surface-attached spherical nanoparticles", *Computational Materials Science* **143**, 497 (2018). DOI, PDF, PPT

40. L. Bao, Z. Huang, N. V. Priezjev, S. Chen, K. Luo, H. Hu, "A significant reduction of ice adhesion on nanostructured surfaces that consist of an array of single-walled carbon nanotubes: A molecular dynamics simulation study", *Applied Surface Science* **437**, 202 (2018). DOI, PDF

41. M. A. Makeev and N. V. Priezjev, "Distributions of pore sizes and atomic densities in binary mixtures revealed by molecular dynamics simulations", *Physical Review E* **97**, 023002 (2018). DOI, PDF

42. N. V. Priezjev, "Molecular dynamics simulations of the mechanical annealing process in metallic glasses: Effects of strain amplitude and temperature", *Journal of Non-Crystalline Solids* **479**, 42 (2018). DOI, PDF

43. N. V. Priezjev and M. A. Makeev, "Evolution of the pore size distribution in sheared binary glasses", *Physical Review E* **96**, 053004 (2017). DOI, PDF

44. L. Bao, N. V. Priezjev, H. Hu, K. Luo, "The effects of viscous heating and wall-fluid interaction energy on rate-dependent slip behavior of simple fluids", *Physical Review E* **96**, 033110 (2017). DOI, PDF

45. A. Kharazmi and N. V. Priezjev, "Molecular dynamics simulations of the rotational and translational diffusion of a Janus rod-shaped nanoparticle", *Journal of Physical Chemistry B* **121**, 7133 (2017). DOI, PDF, WWW

46. N. V. Priezjev, "Collective nonaffine displacements in amorphous materials during large-amplitude oscillatory shear", *Physical Review E* **95**, 023002 (2017). DOI, PDF, PPT

47. H. Hu, L. Bao, N. V. Priezjev, K. Luo, "Identifying two regimes of slip of simple fluids over smooth surfaces with weak and strong wall-fluid interaction energies", *Journal of Chemical Physics* **146**, 034701 (2017). DOI, PDF

48. N. V. Priezjev, "Nonaffine rearrangements of atoms in deformed and quiescent binary glasses", *Physical Review E* **94**, 023004 (2016). DOI, PDF

49. N. V. Priezjev, "Reversible plastic events during oscillatory deformation of amorphous solids", *Physical Review E* **93**, 013001 (2016). DOI, PDF

50. N. V. Priezjev, "The effect of a reversible shear transformation on plastic deformation of an amorphous solid", *Journal of Physics: Condensed Matter* **27**, 435002 (2015). DOI, PDF, PPT

51. A. Kharazmi and N. V. Priezjev, "Diffusion of a Janus nanoparticle in an explicit solvent: A molecular dynamics simulation study", *Journal of Chemical Physics* **142**, 234503 (2015). DOI, PDF

52. N. V. Priezjev, "Plastic deformation of a model glass induced by a local shear transformation", *Physical Review E* **91**, 032412 (2015). DOI, PDF

53. N. V. Priezjev, "Dynamical heterogeneity in periodically deformed polymer glasses", *Physical Review E* **89**, 012601 (2014). DOI, PDF, PPT

54. T. Darvishzadeh, V. V. Tarabara, and N. V. Priezjev, "Oil droplet behavior at a pore entrance in the presence of crossflow: Implications for microfiltration of oil-water dispersions", *Journal of Membrane Science* **447**, 442-451 (2013). DOI, PDF, PPT

55. N. V. Priezjev, "Heterogeneous relaxation dynamics in amorphous materials under cyclic loading", *Physical Review E* **87**, 052302 (2013). DOI, PDF

56. N. V. Priezjev, "Molecular dynamics simulations of oscillatory Couette flows with slip boundary conditions", *Microfluidics and Nanofluidics* **14**, 225-233 (2013). DOI, PDF, PPT

57. T. Darvishzadeh and N. V. Priezjev, "Effects of crossflow velocity and transmembrane pressure on microfiltration of oil-in-water emulsions", *Journal of Membrane Science* **423–424**, 468–476 (2012). DOI, PDF

58. N. V. Priezjev, "Interfacial friction between semiflexible polymers and crystalline surfaces", *Journal of Chemical Physics* **136**, 224702 (2012). DOI, PDF, PPT

59. 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). DOI, PDF, PPT

60. N. V. Priezjev, "Relationship between induced fluid structure and boundary slip in nanoscale polymer films", *Physical Review E* **82**, 051603 (2010). DOI, PDF, PPT

61. 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). DOI, PDF

62. N. V. Priezjev, "Shear rate threshold for the boundary slip in dense polymer films", *Physical Review E* **80**, 031608 (2009). DOI, PDF

63. 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). DOI, PDF, PPT

64. 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). DOI, PDF

65. 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). DOI, PDF

66. N. V. Priezjev, "Effect of surface roughness on rate-dependent slip in simple fluids", *Journal of Chemical Physics* **127**, 144708 (2007). DOI, PDF

67. N. V. Priezjev, "Rate-dependent slip boundary conditions for simple fluids", *Physical Review E* **75**, 051605 (2007). DOI, PDF

68. 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). DOI, PDF

69. N. V. Priezjev, A. A. Darhuber, 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). DOI, PDF, WWW

70. N. V. Priezjev and S. M. Troian, "Molecular origin and dynamic behavior of slip in sheared polymer films", *Physical Review Letters* **92**, 018302 (2004). DOI, PDF

71. N. Akino, C. Giardina, J. M. Kosterlitz, N. V. Priezjev, "Numerical study of random superconductors", *Physica C: Superconductivity and its Applications* **408**, 484 (2004). DOI

72. 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). DOI, PDF

73. 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). DOI, PDF

74. 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). DOI, PDF

75. N. V. Priezjev and R. A. Pelcovits, "Coarsening dynamics of biaxial nematic liquid crystals", *Physical Review E* **66**, 051705 (2002). DOI, PDF, WWW

76. N. V. Priezjev and R. A. Pelcovits, "Disclination loop behavior near the nematic-isotropic phase transition", *Physical Review E* **64**, 031710 (2001). DOI, PDF, PPT

77. N. V. Priezjev and R. A. Pelcovits, "Cluster Monte Carlo simulations of the nematic-isotropic phase transition", *Physical Review E* **63**, 062702 (2001). DOI, PDF

78. N. V. Priezjev and R. A. Pelcovits, "Surface extrapolation length and director structures in confined nematics", *Physical Review E* **62**, 6734 (2000). DOI, PDF

Conference proceedings:

1. P. A. Kossyrev, J. Qi, N. V. Priezjev, R. A. Pelcovits, 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). DOI

2. P. A. Kossyrev, J. Qi, N. V. Priezjev, R. A. Pelcovits, G. P. Crawford, "Modeling electro-optic performance in polymer stabilized nematic liquid crystal display configurations", *Proceedings of the 7th Asian Symposium on Information Display* **7**, 371-374 (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). DOI

Book chapters:

1. N. V. Priezjev, "Fluid structure and boundary slippage in nanoscale liquid films", Chapter 16 in "Detection of Pathogens in Water Using Micro and Nano-Technology", IWA (International Water Association) Publishing (2012). ISBN: 9781780401089. PDF, PPT presentation slides.

Unpublished manuscripts:

1. C. Giardina, N. V. Priezjev, and J. M. Kosterlitz, "Strongly screened vortex lattice model with disorder". [Preprint is available online cond-mat/0202487].

2. N. V. Priezjev and S. M. Troian, "Nanodroplet migration by thermal tuning of the liquid-solid interfacial tension", preprint.

Research publications by topic (DOI, PDF, PPT slides): disordered and glassy systems, mechanics of porous glasses, microfiltration of oil-water emulsions, nanofluidics (liquid/solid interfaces), ice adhesion, spin glasses, liquid crystals.

GRANTS AND AWARDS

- Michigan State University, Intramural Research Grants Program (IRGP) Award (PI: N.V. Priezjev). Budget: $50,000 (2005-2007).
- American Chemical Society, Petroleum Research Fund (PRF) Grant, *"Numerical Modeling of Fluid Droplet Spreading and Contact Angle Hysteresis"* (PI: N.V. Priezjev). Budget: $50,000 (2008-2010).
- National Science Foundation (NSF), 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, M. Feig). Budget: $1,272,629 (2009-2013).
- Michigan State University, Strategic Partnership Grant (SPG) *"Advanced Membrane Technologies for a Sustainable Future"* (PI: V. Tarabara). Budget: $400,000 (2010-2013).
- National Science Foundation (NSF), Division of Chemical, Bioengineering, Environmental and Transport Systems (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.V. Priezjev, co-PI: M.M. Koochesfahani). Budget: $360,000 (2010-2014).
- Wright State University, *"Initiative to Develop a Peer-Network Based Computational Center for Scientific Research"* (PI: Sharma, co-PIs: Priezjev, Sulman). Budget: $5,000 (2014-2016).
- National Science Foundation, Computer and Network Systems (CNS) Program, *"MRI: Acquisition of High Performance Computer Cluster for Multidisciplinary Computational Research and Education"* (PI: Sharma, co-PIs: Priezjev, Paliy, Sulman). Budget: $150,000 (2015-2018).
- The Ohio Supercomputer Center (OSC), Columbus, OH, *"Developing Thermomechanical Processing Routes to Improve the Performance of Amorphous Alloys"* (PI: N.V. Priezjev). Award: 200,000 resource units (RUs).
- National Research University Higher School of Economics, *"International Laboratory for Supercomputer Atomistic Modelling and Multiscale Analysis"* (V. Stegailov, A. Kalinichev, N. Priezjev, G. Norman). Budget: $150,000 (2016-2019).

- American Chemical Society - Petroleum Research Fund (PRF) Grant, PRF# 60092-ND9, *"Modeling of the Contact Angle Hysteresis and Wetting Properties of Oil Droplets on Textured Surfaces"* (PI: N.V. Priezjev). Budget: $110,000 (2019-2022).

PH.D. STUDENTS

(web links for PhD theses)

- Tohid Darvishzadeh. Thesis title: *"Numerical Simulation of Microfiltration of Oil-in-Water Emulsions"*. PPT thesis presentation. Ph.D. Spring 2014, Michigan State University. Now at Blue Origin.
- Ali Kharazmi. *Diffusion of spherical and rod-shaped Janus nanoparticles*. Publications: *J. Chem. Phys.* **142**, 234503 (2015) and *J. Phys. Chem. B* **121**, 7133 (2017). (NSF CBET-1033662) Michigan State University (2010-2017).
- Anoosheh Niavarani. Thesis title: *"Molecular Dynamics and Continuum Simulations of Fluid Flows with Slip Boundary Conditions"*. Ph.D. Spring 2011. Michigan State University − College of Engineering - Fitch Beach Outstanding Graduate Research Award 2010. Facebook.

MS STUDENTS

- Bishal Bhattarai. Thesis title: *"Wetting properties of structured interfaces composed of surface-attached spherical nanoparticles"*. PPT thesis presentation. M.S. Fall 2018, Wright State University. Now Asst. Prof. at University of Mary in Bismarck, ND.
- Qing-Long Liu. Thesis title: *"The influence of complex thermal treatments on mechanical properties of amorphous materials"*. M.S. Summer 2019, HSE Tikhonov Moscow Institute of Electronics and Mathematics. Now Ph.D. student at the University of Basel, Switzerland.
- Anish Thomas. Thesis title: *"Molecular dynamics simulation study of a polymer droplet motion over an array of spherical nanoparticles*". PPT presentation slides. M.S. Spring 2022. Wright State University, Dayton, OH.

PRESENTATIONS

(underline indicates presenter; see PPT slides for selected talks)

Talks at conferences and seminars:

1. N. V. Priezjev, *"Fatigue failure of metallic glasses under cyclic shear deformation"*, Howard University's Research Symposium 2024 (April 26, 2024).
2. N. V. Priezjev, *"Atomistic modeling of heat treatment processes for tuning the mechanical properties of amorphous alloys"*, Izmir Institute of Technology (October 19, 2022).

3. A. Thomas and N. V. Priezjev, *"Molecular dynamics simulation study of a polymer droplet motion over an array of spherical nanoparticles"*, APS March Meeting; Session J25: Computational Fluid Dynamics (March 16, 2021). **PPT**,

4. N. V. Priezjev, *"Accelerated relaxation in amorphous materials under cyclic loading with alternating shear orientation",* APS March Meeting; Session B45: Understanding glasses and disordered systems through computational models (Denver, CO; March 2, 2020).

5. N. V. Priezjev, *"Atomistic modeling of cyclic loading and heat treatment processes for tuning the mechanical properties of amorphous alloys",* seminar in the Department of Mechanical and Materials Engineering at Florida International University (Miami, FL; February 7, 2020).

6. N. V. Priezjev, *"Atomistic modeling of cyclic loading and heat treatment processes for tuning the mechanical properties of amorphous alloys"*, Materials Research Society (MRS) Fall Meeting, Symposium MS01: Extreme Mechanics (Boston, MA; December 3, 2019). **PPT**

7. N. V. Priezjev, *"Molecular origin of surface tension at liquid-vapor interfaces",* seminar at National Research University Higher School of Economics (HSE), Tikhonov Moscow Institute of Electronics and Mathematics (June 28, 2019). **PPT**

8. N. V. Priezjev, *"The effect of cryogenic thermal cycling on potential energy states and mechanical properties of metallic glasses",* APS March Meeting; Session V49: Mechanics of Materials Processing (Boston, MA; March 7, 2019).

9. N. V. Priezjev, *"Wetting properties of structured interfaces composed of surface-attached spherical nanoparticles"*, seminar in the International Laboratory for Supercomputer Atomistic Modelling and Multiscale Analysis, National Research University Higher School of Economics (Moscow, Russia; June 8, 2018). **PPT**

10. N. V. Priezjev, *"Mechanical annealing of binary glasses: Effects of strain amplitude and temperature"*, APS March Meeting; Session C47: Disordered and Glassy Systems (Los Angeles, CA; March 5, 2018).

11. N. V. Priezjev, *"Slip behavior in liquid films: Influence of patterned surface energy, flow orientation, and deformable gas-liquid interface"*, seminar in the International Laboratory for Supercomputer Atomistic Modelling and Multiscale Analysis, National Research University Higher School of Economics (July 3, 2017). **PPT**

12. N. V. Priezjev, *"Collective nonaffine displacements of atoms in periodically deformed and quiescent binary glasses"*, seminar in the International Laboratory for Supercomputer Atomistic Modelling and Multiscale Analysis, National Research University Higher School of Economics (Moscow, Russia; June 28, 2017).

13. N. V. Priezjev, *"Atomistic modeling of the structure and boundary slippage in nanoscale polymer films"*, The Institute of Physical Chemistry and Electrochemistry, Russian Academy of Sciences (June 22, 2017).

14. N. V. Priezjev, *"Collective nonaffine rearrangements in binary glasses during large-amplitude oscillatory shear"*, APS March Meeting; Session R16: Friction, Deformation and Fracture (New Orleans, LA; March 16, 2017). **PPT**

15. A. Kharazmi and N. V. Priezjev, *"Molecular dynamics simulation study of the diffusion of a Janus nano-particle in an explicit solvent"*, Society for Industrial and Applied Mathematics (SIAM) Conference on Computational Science and Engineering; Session MS83: Small-Scale Flows with Industrial Applications: Modeling and Simulations (Atlanta, GA; February 27, 2017). **WWW**

16. N. V. Priezjev, *"Nonaffine displacements of atoms in periodically deformed and quiescent binary glasses"*, Materials Research Society (MRS) Fall Meeting, Symposium MB6: Cyclic Deformation and Fracture at the Nanoscale (Boston, MA; November 30, 2016).

17. A. Kharazmi and N. V. Priezjev, *"Molecular dynamics simulations of the rotational and translational diffusion of a Janus rod-shaped nanoparticle"*, APS 69th DFD Meeting; Session D22: Nano Flows: Computations and Modeling (Portland, OR; November 20, 2016).

18. N. V. Priezjev, *"Plastic deformation of a model glass induced by a local shear transformation"*, APS March Meeting; Session J43: Manipulating Glasses: Mechanics (San Antonio, TX; March 3, 2015). **PPT**

19. A. Kharazmi and N. V. Priezjev, *"Translational and rotational diffusion of a single Janus nanoparticle in an explicit solvent"*, APS 67th DFD Meeting; Session M36: Nano Flows II (San Francisco, CA; November 25, 2014).

20. N. V. Priezjev, *"Dynamical heterogeneity and structural relaxation in periodically deformed polymer glasses"*, APS March Meeting; Session Z19: Supercooled Polymer Liquids and Glasses (Denver, CO; March 7, 2014). **PPT**

21. A. Kharazmi and N. V. Priezjev, *"Correlation between rotational and translational diffusion of a Janus nanoparticle in explicit solvent: A molecular dynamics simulation study"*, APS March Meeting; Session B20: Focus Session: Microfluidics and Nanofluidics II - Colloidal Hydrodynamics and Active Particles (Denver, CO; March 3, 2014).

22. T. Darvishzadeh, V.V. Tarabara, N. V. Priezjev, *"Oil droplet dynamics at a porous surface in the presence of crossflow: Implications for microfiltration of oil-water dispersions"*, APS March Meeting; Session B15: Bubbles, Interfaces and Porous Media (Denver, CO; March 3, 2014).

23. A. Kharazmi and N. V. Priezjev, *"Correlation between translational and rotational diffusion of a Janus nanoparticle in explicit solvent: A molecular dynamics simulation study"*, APS 66th DFD Meeting; Session M7: Nanofluids II (Pittsburgh, PA; November 26, 2013).

24. T. Darvishzadeh, V.V. Tarabara, N. V. Priezjev, *"Oil droplet behavior at a pore entrance in the presence of crossflow: Implications for microfiltration of oil-water dispersions"*, APS 66th DFD Meeting; Session M34: Drops XIV: Shape Dynamics and Confinement (Pittsburgh, PA; November 26, 2013). **PPT**

25. N. V. Priezjev, *"Effect of chain stiffness on interfacial slip in nanoscale polymer films"*, APS 66th DFD Meeting; Session L19: Nanofluidics I (Pittsburgh, PA; November 25, 2013). **PPT**

26. N. V. Priezjev, *"Structural relaxation in periodically deformed polymer glasses and shear response of thin polymer films: Recent results from molecular dynamics simulations"*, Functional Materials Branch, AFRL (Dayton, OH; November 4, 2013).

27. N. V. Priezjev, *"Atomistic modeling of the structure and boundary slippage in nanoscale polymer films",* seminar in the Department of Mechanical and Materials Engineering at Wright State University (Dayton, OH; May 13, 2013).

28. N. V. Priezjev, *"Heterogeneous relaxation dynamics in amorphous materials under cyclic loading",* APS March Meeting; Session Y30: Jamming and Shearing (Baltimore, MD, March 22, 2013). **PPT**

29. N. V. Priezjev, *"Slip flow regimes and induced fluid structure in nanoscale polymer films: Recent results from molecular dynamics simulations"*, seminar in the School of Mathematical Sciences at the Rochester Institute of Technology (Rochester, NY; March 28, 2013).

30. N. V. Priezjev, *"Slip flow regimes and induced fluid structure in nanoscale polymer films: Recent results from molecular dynamics simulations"*, seminar in the Mechanical Engineering Department at the Catholic University of America (Washington, DC; December 6, 2012).

31. T. Darvishzadeh, N. V. Priezjev, V.V. Tarabara, *"Numerical study of crossflow-enhanced microfiltration of oil-in-water emulsions",* APS 65th DFD Meeting; Session R3: Multiphase General II (San Diego, CA; November 20, 2012). **PPT**

32. A. Kharazmi and N. V. Priezjev, *"Influence of slip boundary conditions and confinement on molecular diffusion in nanochannels: A molecular dynamics simulation study",* APS 65th DFD Meeting; Session D30: Nanofluids: Computations (San Diego, CA; November 18, 2012).

33. N. V. Priezjev, *"Molecular dynamics simulations of oscillatory Couette flows with slip boundary conditions",* APS 65th DFD Meeting; Session D30: Nanofluids: Computations I (San Diego, CA; November 18, 2012). **PPT** (Chair of the Session D30: Nanofluids).

34. 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).

35. 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).

36. 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).

37. 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). **PPT** (Chair of the Session D2: Nanofluids I).

38. 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).

39. 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).

40. 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).

41. 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).

42. 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).

43. N. V. Priezjev, *"The relationship between induced fluid structure and boundary slip in nanoscale polymer films"*, seminar in the Department of Mechanical Engineering at Michigan State University (East Lansing, MI; October 5, 2010). **PPT**

44. N. V. Priezjev, *"The relationship between induced fluid structure and boundary slip in nanoscale polymer films"*, seminar in the Applied Physics Department at California Institute of Technology (Pasadena, CA; August 16, 2010).

45. 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 at Michigan State University (East Lansing, MI; August 5, 2010).

46. 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 at Johns Hopkins University (Baltimore, MD; July 8, 2010).

47. 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).

48. N. V. Priezjev, *"Influence of shear rate and fluid density on slip boundary conditions in nano-scale polymer films confined between smooth surfaces: A molecular dynamics study"*, Applied Mathematics Colloquium, University of Western Ontario (London, Canada; May 11, 2010).

49. 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). **PPT**

50. 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).

51. 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).

52. 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"*, colloquium in the Department of Physics at Oakland University (Rochester, MI; February 11, 2010).

53. 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).

54. 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).

55. 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). **PPT**

56. 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).

57. 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).

58. 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).

59. 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). **PPT**

60. 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).

61. N. V. Priezjev, *"Slip boundary conditions for shear flow of simple fluids and polymer melts past atomically smooth surfaces: A molecular dynamics study"*, the Complex Fluids Seminar in the Department of Chemical Engineering at the University of Michigan (Ann Arbor, MI; April 18, 2008).

62. 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).

63. 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).

64. 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, UT; November 18, 2007).

65. 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, UT; November 20, 2007). **PPT**

66. N. V. Priezjev, *"To slip or not to slip?"*, the College of Science Seminar in the Department of Computational and Data Sciences at George Mason University (Fairfax, VA; April 12, 2007).

67. N. V. Priezjev, *"Slip behavior at liquid/solid interfaces: Comparison between continuum and molecular dynamics simulations"*, seminar in the Department of Mechanical Engineering at the University of Michigan-Dearborn (Detroit, MI; March 30, 2007).

68. 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).

69. 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).

70. 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).

71. 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).

72. 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).

73. 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).

74. N. V. Priezjev and S. M. Troian, *"Dynamic response of the slip length at liquid/solid inter-faces"*, Materials Research Society (MRS) Fall Meeting; Session N1: Dynamics in Small Confined Systems (Boston, MA; November 28, 2005).

75. 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).

76. N. V. Priezjev, *"Slip behavior in liquid nanoscale films: Influence of molecular ordering, wall roughness, and patterned surface energy"*, seminar in the Department of Chemical Engineering and Materials Science at Michigan State University (East Lansing, MI; October 13, 2005).

77. N. V. Priezjev, *"Slip behavior in liquid nanoscale films: Influence of molecular ordering, wall roughness and patterned surface energy"*, seminar in the Department of Engineering Sciences and Applied Mathematics at Northwestern University (Evanston, IL; September 30, 2005).

78. N. V. Priezjev, *"Slip behavior in liquid nanoscale films: Influence of molecular ordering, wall roughness and patterned surface energy"*, Complex Fluids Seminar in the Department of Chemical Engineering at the University of Michigan (Ann Arbor, MI; September 21, 2005).

79. N. V. Priezjev, *"Slip behavior in liquid nanoscale films: Influence of molecular ordering, wall roughness and patterned surface energy"*, seminar in the Department of Mechanical Engineering at Michigan State University (East Lansing, MI; May 6, 2005).

80. 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).

81. N. V. Priezjev, *"Slip behavior in liquid nanoscale films: Influence of molecular ordering, wall roughness and patterned surface energy"*, seminar in the Physics Department at Brown University (Providence, RI; April 21, 2005).

82. 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).

83. 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). **WWW**

84. 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).

85. N. V. Priezjev and S. M. Troian, *"Origin of slip phenomena in sheared nanoscale films"*, 8th Complex Fluids Symposium, Princeton Materials Institute, Princeton University (Princeton, NJ; May 1, 2004).

86. 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). **PPT**

87. 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).

88. 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).

89. 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).

90. 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).

91. N. V. Priezjev and S. M. Troian, *"Equilibrium and dynamical behavior of slip in polymer films"*, ASME Annual Meeting; Session on Tribology: Surface Friction, paper TRIB-1 (Washington, DC; November 16, 2003).

92. N. V. Priezjev and S. M. Troian, *"Equilibrium and dynamical behavior of slip in polymer films"*, ASME Annual Meeting; Session on Modeling and Simulation of Micro-/Nano- Scale Fluid Dynamics, paper AMD.1C (Washington, DC; November 19, 2003).

93. N. V. Priezjev, *"Molecular origin and dynamic behavior of slip in sheared polymer films"*, Brown Bag Seminar in the Physics Department at Princeton University (Princeton, NJ; October 7, 2003).

94. N. V. Priezjev and S. M. Troian, *"Molecular origin and dynamic behavior of slip in short polymer films"*, 14th Complex Fluid Workshop at the University of Massachusetts (Boston, MA; March 21, 2003).

95. 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).

96. N. V. Priezjev and R. A. Pelcovits, *"Coarsening dynamics of biaxial nematics"*, APS March Meeting; Session Q26: Liquid Crystals (Indianapolis, IN; March 20, 2002). **WWW**

97. N. V. Priezjev, *"Disclination loop behavior near the nematic-isotropic phase transition"*, seminar in the Physics Department at Boston University (Boston, MA; January 20, 2002). **PPT**

98. 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).

99. N. V. Priezjev and R. A. Pelcovits, *"Coarsening dynamics of biaxial nematics"*, 86th Statistical Mechanics Meeting, Rutgers University (New Brunswick, NJ; December 18, 2001).

100. N. V. Priezjev and R. A. Pelcovits, *"Disclination loop behavior near the nematic-isotropic phase transition"*, Division of Computational Physics (DCOMP 2001) Annual Meeting;

Session H4: Phase Transitions and Computational Methods, MIT (Cambridge, MA; June 26, 2001).

101. 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). **PPT**

102. N. V. Priezjev and R. A. Pelcovits, *"Surface extrapolation length and director structures in confined nematics"*, seminar in the Liquid Crystal Physics Group at the University of Colorado (Boulder, CO; July 16, 2000).

103. N. V. Priezjev and R. A. Pelcovits, *"Surface extrapolation length and director structures in confined nematics"*, 2nd Complex Fluid Workshop, University of Massachusetts Amherst (Amherst, MA; June15, 2000).

104. N. V. Priezjev and R. A. Pelcovits, *"Surface extrapolation length in confined nematic liquid crystals"*, seminar in the Physics Department at the University of Ljubliana (Ljubliana, Slovenia; February 26, 2000).

Poster presentations: *(underline indicates presenter)*

1. N. V. Priezjev and M. A. Makeev, *"Distributions of pore sizes and atomic densities in binary LJ glasses revealed by molecular dynamics simulations"*, APS March Meeting; Session L60: Poster Session II (Los Angeles, CA; March 7, 2018). YouTube: Examples of porous structure.

2. N. V. Priezjev, *"Dynamical heterogeneity and structural relaxation in periodically deformed polymer glasses"*, Materials Research Society (MRS) Fall Meeting; Session UU10 (Boston, MA; December 4, 2014). **PPT**

3. 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). **PPT**

4. A. Niavarani and N. V. Priezjev, *"Effect of surface roughness on slip flows in nano-scale polymer films"*, APS 60th DFD Meeting, Poster Session (Salt Lake City, UT; November 19, 2007). **PPT**

5. 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).

6. N. V. Priezjev and R. A. Pelcovits, *"Disclination loop behavior near the nematic-isotropic phase transition"*, APS March Meeting, Poster Session (Indianapolis, IN; March 20, 2002). **PPT**

7. N. V. Priezjev and R. A. Pelcovits, *"Disclination loop behavior near the nematic-isotropic phase transition"*, 21st IUPAP International Conference on Statistical Physics, STATPHYS 21 (Cancun, Mexico; July 19, 2001).

Selected research seminars: *(from slideshare.net)*

1. N. V. Priezjev, *"Atomistic modeling of cyclic loading and heat treatment processes for tuning the mechanical properties of amorphous alloys"*, MRS, Fall 2019.

2. B. Bhattarai, *"Wetting properties of structured interfaces composed of surface-attached spherical nanoparticles"*, M.S. thesis, Wright State University, 2018.

3. N. V. Priezjev, *"Slip behavior in liquid films: Influence of patterned surface energy, flow orientation, and deformable gas-liquid interface"*, HSE University, 2017.

4. T. Darvishzadeh, *"Numerical simulation of micro-filtration of oil-in-water emulsions"*, Ph.D. thesis, Michigan State University, 2014.

5. N. V. Priezjev, *"Atomistic modeling of the structure and boundary slippage in nanoscale polymer films"*, Michigan State University, 2012.

6. N. V. Priezjev, *"Disclination loop critical behavior in nematic liquid crystals"*, Brown University, 2002.

SHORT COURSES AND WORKSHOPS

1. Participant at the Boulder Summer School for Condensed Matter and Materials Physics *"Introduction to Superconductivity: Fundamentals and Applications"*, Boulder, CO, July 2-29, 2000.

2. Grants 101: Professional Grant Proposal Writing Workshop at the University of Michigan, Ann Arbor, MI, August 21-23, 2006.

3. Workshop on the Graduate Assistance in Areas of National Need (GAANN), U.S. Dept. of Education, Washington, DC, September 28-29, 2006.

4. National Effective Teaching Institute (NETI) Workshop lead by Prof. Felder, and the ASEE Annual Conference (American Society for Engineering Education), Honolulu, Hawaii, June 21-27, 2007. NETI teaching certificate.

5. 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 HOWARD UNIVERSITY

1. CIEG 202: Engineering Mechanics: Statics.

2. CIEG 301: Mechanics of Materials [lecture slides for pure bending, beam deflection].

3. CIEG 302: Engineering Mechanics: Dynamics.

COURSES TAUGHT AT WRIGHT STATE *(web links for syllabi and lectures)*

1. ME 4720/6720: Engineering Polymers [lecture slides for molecular structure, polymerization, microstructures, mechanical properties, processing methods].

2. ME 4010/6010: Computational Methods for Mechanical Engineering [solution of system of equations, curve fitting and interpolation].

3. ME 3760: Diffusion and Kinetics [binary solutions, diffusion, crystal interfaces, solidification].

4. ME 2210: Engineering Mechanics: Dynamics [curvilinear motion, instantaneous center of zero velocity].

5. ME 2120: Engineering Mechanics: Statics [moments of forces, analysis of trusses].

6. ME 4910/4920: Capstone Design Projects in Mechanical Engineering.

COURSES TAUGHT AT MICHIGAN STATE *(web links for syllabi)*

1. ME 361: Engineering Mechanics: Dynamics (2006-2013).

   Kinematics of particles, rigid bodies, and mass moments of inertia. Kinetics of particles and rigid bodies. Energy and momentum principles.

2. ME 891: Molecular Modeling in Engineering: Methods and Applications (2008, 2011).

   The course is an introduction to the theory and methods of classical molecular modeling as applied to contemporary research in engineering, physics and materials science. Topics include elementary statistical mechanics, Monte Carlo and molecular dynamics methods, techniques for generating different ensembles and calculating free energies and transport coefficients.

3. ME 481: Mechanical Engineering Design Projects (2006-2012).

   Application of design concepts in mechanical engineering. Problem definition, design specifications. Modeling and analysis methods. Design optimization, economics, reliability. Manufacturing considerations in design. Capstone design projects: Whirlpool - Spring 2006; DeVilbiss Automotive Refinishing Safe Paint Dryer Device - Fall 2007; Dow Chemical Brine Seal - Spring 2010; Heartwood School Drum Mounts - Fall 2011; Special Needs Bicycle - Fall 2011; Heartwood School - Spring 2012; Whirlpool and GM - Fall 2012.

4. ME 391: Advanced Engineering Mathematics (Spring 2006).

   Analytical and numerical methods for the modeling and analysis of mechanical engineering systems. Applications to vibrating elements, heat transfer, linear springs, and coupled spring-mass systems. YouTube **teaching presentation** on eigenvalues and eigenvectors.

PROFESSIONAL ACTIVITIES

- Referee for scientific journals: *Physical Review E, Physical Review Letters, Europhysics Letters, Journal of Computational Physics, Journal of Chemical Physics, Journal of Physical Chemistry, Microfluidics and Nanofluidics, Nature, Science, Journal of Colloid and Interface Science, Journal of Membrane Science, Journal of Non-Crystalline Solids, Journal of Polymer Science Part B: Polymer Physics, Physics of Fluids, Journal of Fluid Mechanics, Langmuir, Journal of Applied Physics, Applied Physics Letters, Applied Surface Science, Mathematical Modeling of Natural Phenomena, Journal of Algorithms and Computational Technology, Scientia Iranica, ASME Journal of Fluids Engineering, Physical Review Fluids, Theoretical and Computational Fluid Dynamics, Heat Transfer Engineering, Journal of Membrane Science, Structural and Multidisciplinary Optimization, Computational Materials Science, Molecular Simulation, and other journals.*
- Reviewer of proposals for the funding agencies: the National Science Foundation (NSF), U.S. Army Research, and American Chemical Society - Petroleum Research Fund (PRF).
- Member of the American Physical Society (APS), Material Research Society (MRS), and American Society of Engineering Education (ASEE).