

Gary S. Grest
Sandia National Laboratories

Nanoscience Related Publications

(Selected journal publications)

- *Shear Viscosity of Extended Nanoparticles*, Matt K. Petersen, J. Matthew D. Lane, and Gary S. Grest, submitted to Phys. Rev. E (2009).
- *Large Scale Molecular Dynamics Simulations of Vapor Phase Lubrication for MEMS*, Christian D. Lorenz, Michael Chandross, and Gary S. Grest, submitted to J. Adhesion Sci. Tech. (2009).
- *Simulation Study of the Silicon Oxide and Water Interface*, Christian D. Lorenz, Mesfin Tsige, Susan B. Rempe, Michael Chandross, Mark J. Stevens and Gary S. Grest, submitted to J. Comp. Theor. Nanoscience (2009).
- *Interdiffusion of Short Chain Oligomers into an Entangled Polymer Film*, Flint Pierce, Dvora Perahia, and Gary S. Grest, Macromolecules **42** (2009), in press.
- *Spreading of Liquid Polymer Droplets on a Permeable Polymer Liquid*, Flint Pierce, Dvora Perahia, and Gary S. Grest, EPL **86**, 64004 (2009).
- *Forces between Functionalized Silica Nanoparticles in Solution*, J. Matthew D. Lane, Ahmed E. Ismail, Michael Chandross, Christian D. Lorenz, and Gary S. Grest, Phys. Rev. E **79**, 050501 (2009).
- *Interfacial Structure and Dynamics of Siloxane Polymers: PDMS-vapor and PDMS-Water*, Ahmed E. Ismail, Gary S. Grest, David R. Heine, Mark J. Stevens, and Mesfin Tsige, Macromolecules **42**, 3186 (2009).
- *Molecular Dynamics Simulations of Water Confined Between Matched Pairs of Hydrophobic and Hydrophilic Alkylsilane Self-Assembled Monolayers*, Christian D. Lorenz, J. Matthew D. Lane, Michael Chandross, Mark J. Stevens, and Gary S. Grest, Langmuir **25**, 4535 (2009).
- *Shearing Thinning of Nanoparticle Suspensions*, Pieter J. in 't Veld, Matt K. Petersen, and Gary S. Grest, Phys. Rev. E **79**, 021401 (2009).
- *Liquid Crystal Nanodroplets in Solution*, W. Michael Brown, Matt K. Petersen, Stephen J. Plimpton, and Gary S. Grest, J. Chem. Phys. **130**, 044901 (2009).
- *Liquid Vapor Coexistence for Nanoparticles of Various Size*, Pieter J. in 't Veld, Mark A. Horsch, Jeremy B. Lechman, and Gary S. Grest, J. Chem. Phys. **129**, 164504 (2008).
- *Simulations of Water at the Interface with Hydrophilic Self-Assembled Monolayers*, Mark J. Stevens, and Gary S. Grest, Biointerphases **3**, FC13 (2008).

- *Liquid-Liquid Interfaces of Semifluorinated Alkane Diblock Copolymers with Water, Alkanes, and Perfluoroalkanes*, Flint Pierce, Mesfin Tsige, Dvora Perahia, and Gary S. Grest, J. Phys. Chem. B **112**, 16012 (2008).
- *Accurate and Efficient Methods for Modeling Colloidal Mixtures in an Explicit Solvent using Molecular Dynamics*, Pieter J. in 't Veld, Steven J. Plimpton, and Gary S. Grest, Comp. Phys. Comm. **179**, 320 (2008).
- *Interfacial Properties of Semifluorinated Alkane Diblock Copolymers*, Flint Pierce, Mesfin Tsige, Oleg Borodin, Dvora Perahia, and Gary S. Grest, J. Chem. Phys. **128**, 214903 (2008).
- *Water Penetration of Damaged Self-Assembled Monolayers*, J. Matthew D. Lane, Michael Chandross, Mark J. Stevens, Gary S. Grest, and Christian D. Lorenz, Langmuir **24**, 5734 (2008).
- *Water in Nano-Confinement between Hydrophilic Self-Assembled Monolayers*, J. Matthew D. Lane, Michael Chandross, Mark J. Stevens, and Gary S. Grest, Langmuir **24**, 5209 (2008).
- *Surface Tension and Surface Orientation of Perfluorinated Alkanes*, Mesfin Tsige and Gary S. Grest, J. Phys. Chem. C **112**, 5029 (2008).
- *Simulations of Nanotribology with Realistic Probe Tip Models*, Michael Chandross, Christian D. Lorenz, Mark J. Stevens, and Gary S. Grest, Langmuir **24**, 1240 (2008).
- *Surface Tension of Normal and Branched Alkanes*, Ahmed E. Ismail, Mesfin Tsige, Pieter in 't Veld and Gary S. Grest, Mol. Phys. **105**, 3155 (2007).
- *Entanglements of an End-Grafted Polymer Brush in a Polymer Melt*, Robert S. Hoy and Gary S. Grest, Macromolecules **40**, 8389 (2007).
- *Application of Ewald Summations to Long Range Dispersion Forces*, Pieter J. in 't Veld, Ahmed E. Ismail, and Gary S. Grest, J. Chem. Phys. **127**, 144711 (2007).
- *Structure and Dynamics of Water near the Interface with Oligo(ethylene oxide) Self-Assembled Monolayers*, Ahmed E. Ismail, Gary S. Grest, and Mark J. Stevens, Langmuir **23**, 8508 (2007).
- *Capillary Waves at the Liquid-Vapor Interface and the Surface Tension of Water*, Ahmed E. Ismail, Gary S. Grest, and Mark J. Stevens, J. Chem. Phys. **125**, 014702 (2006).
- *Liquid Nanodroplets Spreading on Chemically Patterned Surfaces*, Gary S. Grest, David R. Heine, and Edmund B. Webb III, Langmuir **22**, 4745 (2006).
- *High Temperature Wetting: Insights from Atomistic Simulations*, Edmund B. Webb, J. J. Hoyt, and Gary S. Grest, Current Opinion Solid State Mat. Sci. **9**, 174 (2005).
- *Nanotribology of Anti-Friction Coatings in MEMS*, Michael Chandross, Christian D. Lorenz, Gary S. Grest, Mark J. Stevens, and Edmund B. Webb III, JOM **57**, 55 (2005).
- Tribological Properties of Alkylsilane Self-Assembled Monolayers, Christian D. Lorenz, Michael Chandross, Gary S. Grest, Mark J. Stevens, and Edmund B. Webb III, Langmuir **21**, 11744 (2005).

- *Surface Wetting of Liquid Nanodroplets: Droplet Size Effects*, David R. Heine, Gary S. Grest, and Edmund B. Webb III, Phys. Rev. Lett. **95**, 107801 (2005).