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Effect of Nanoparticle Shape and Size on Shear Rheology MATT K. PETERSEN, J. MATTHEW D. LANE, GARY S. GREST, Sandia National Laboratories, Albuquerque NM — The effect of nanoparticle shape and size on the shear rheology of nanoparticle suspensions was explored through non-equilibrium molecular dynamics simulations. Composite nanoparticles consisting of rigid Lennard-Jones particles in a Lennard-Jones explicit solvent were modeled using the Müller-Plathe "reverse" perturbation method. A series of suspensions were modeled wherein the nanoparticle volume fraction was held constant while the shape and size of the nanoparticles were varied. Specifically, results for the shear viscosity of spherical, plate, and rod-like nanoparticles of size varying from tens to hundreds of interaction sites will be presented. Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under Contract DE-AC04-94AL85000.

Matt K. Petersen

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