

Abstract Submitted
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Diffusivity in Simulated Suspensions of Deformable Particles using the Lattice-Boltzmann Method JONATHAN CLAUSEN, ROBERT MACMECCAN, SHEILA REZAK, G. W. Woodruff School of Mechanical Engineering at Georgia Institute of Technology Atlanta, GA, JEFF MORRIS, Levich Institute, City College of New York, New York, NY, CYRUS AIDUN, G. W. Woodruff School of Mechanical Engineering at Georgia Institute of Technology Atlanta, GA — Diffusion of particles and molecules in suspension flow plays a vital role in many biological and industrial processes. In the paper industry, adequate mixing of pigments during the coating process is essential. In blood flow, diffusion of molecules plays an important role in cell response. For example, transport of NO and reactive oxygen species affects endothelial cell function. In the present study, simulations couple elastic finite-element particles to a lattice-Boltzmann fluid model. This study compares the diffusivities found in suspensions of rigid and deformable particles in wall bounded shear flow.

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