

Abstract Submitted
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Lattice-Boltzmann-based Simulations of Diffusiophoresis JOSHUA CASTIGLIEGO, JENNIFER KREFT PEARCE, Roger Williams University — We present results from a lattice-Boltzmann-base Brownian Dynamics simulation on diffusiophoresis and the separation of particles within the system. A gradient in viscosity that simulates a concentration gradient in a dissolved polymer allows us to separate various types of particles by their deformability. As seen in previous experiments, simulated particles that have a higher deformability react differently to the polymer matrix than those with a lower deformability. Therefore, the particles can be separated from each other. This simulation, in particular, was intended to model an oceanic system where the particles of interest were zooplankton, phytoplankton and microplastics. The separation of plankton from the microplastics was achieved.

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