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Understanding Shear Thinning using Brownian Dynamic Simulations¹ MACKENZIE WALL, LUIS SANCHEZ-DIAZ, The University of Tennessee at Chattanooga — In this work, we study the changes in structure during the shear-thinning regime using Brownian Dynamics with a simple steady-state shear flow of binary charged colloidal suspension. Previous research has shown that the decreasing viscosity is the result of layer formation; however, there are fluids whose viscosity does decrease, but lacks the layer formation. With our Brownian Dynamic Simulation, we were able to reproduce the results obtained in a recent rheo-SANS experiment and we also explored at what conditions layer and non-layer formation occurs from at different parameters.

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