

Abstract Submitted
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Using colloids to model worm-like micelles¹ KAZEM V. EDMOND, TESS W.P. JACOBSON, Department of Physics, STEFANO SACANNA, Department of Chemistry, ANDREW D. HOLLINGSWORTH, Department of Physics, DAVID J. PINE, Department of Physics, New York University, New York, NY — We measure the viscosity of self-assembling chains of colloidal particles using a Zimm viscometer, a custom built Couette apparatus. Our microscopic particles are shaped like contact lenses or bowls, specially fabricated to fit inside one another so that they readily form chains in the presence of a depletant. Careful tuning of the interaction strength in a suspension of particles induces the formation of long chains. Shearing this material can twist, stretch, and break the chains, causing the material to exhibit unique rheological properties. We anticipate that these colloidal chains will model the behavior of worm-like micelles.

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Kazem Edmond
Center for Soft Matter Research, New York University

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