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**Surface Modification of Plate-Like Nanoparticles and Their Assembly into Nematic Organogels** BANI CIPRIANO, SRINIVASA RAGHAVAN, Department of Chemical and Biomolecular Engineering, University of Maryland, College Park, MD 20742 — Plate-like clay nanoparticles (e.g., laponite) form gels in water at sufficiently high concentration. A remarkable feature of these gels is the appearance of birefringent textures characteristic of nematic liquid crystals. Here we report the counterpart of this phenomenon in organic solvents, i.e., the formation of nematic textures by adding organically modified clay nanoparticles into non-polar liquids such as toluene and chloroform. We present the phase diagram (isotropic/nematic phases) for these gels. The viscoelastic properties of the resulting gels are characterized by use of rheological methods. The quality of the dispersions and the birefringent textures are evaluated using optical microscopy and x-ray scattering techniques. The finding that organoclays self assemble into a nematic phase in non-polar mediums may well provide a route for in-situ formation of nematic polymer nanocomposites. We also describe preliminary efforts towards achieving nematic ordering of particles in polymers.

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