Abstract Submitted
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Polypeptide Liquid Crystal Assisted Assembly of Cylindrically Symmetric Silica-Polypeptide Hybrid Microparticles[1] PAUL RUSSO, CORNELIA ROSU, SHANE JACOBEEN, Georgia Inst of Tech, KATHERINE PARK, Molecular Vista, PETER YUNKER, ELSA REICHMANIS, Georgia Inst of Tech — Liquid crystals can organize dispersed particles into exotic structures. Matching the particle surface coating to the chemistry of the mesogenic phase permits a tight focus on factors such as extended particle shape. The colloidal particles developed for this work consist of a magnetic and fluorescent cylinder-like silica core. One end of the silica is rounded, almost hemispherical, giving the particles a bullet-like shape. These particles are functionalized with helical poly(γ-stearyl-L-glutamate) and dispersed, at different concentrations in cholesteric liquid crystals (ChLC) of the same polymer in tetrahydrofuran. Defects introduced by the particles to the director field of the bulk PSLG/THF host led to a variety of phases, including a quasi-hexagonal alignment of the particles.

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