

Abstract Submitted
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Phase behavior of silica-polypeptide colloidal particles immersed in liquid crystal forming mesogens MELISSA COLLINS, ERICK SOTOCANTU, PAUL RUSSO, Louisiana State University — Silica-polypeptide composite particles (Silica-PCPs) are core-shell colloids. The size and function of the silica core are easily controlled. Established synthesis methods ensure uniformly sized cores and provide the ability to have magnetic or fluorescent inclusions within them. The interactions of the polypeptides in the shell with those unbound in solution can be explored by small/wide angle x-ray scattering (SAXS/WAXS) and polarized optical microscopy (POM) to identify the concentration at which the solution changes from isotropic to ordered. Silica-PCPs/untethered polymer/solvent systems are studied to determine the phase behavior in a non-aqueous environment, free from complications arising from electrostatic effects. The tendency of poly(γ -benzyl-L-glutamate) to form liquid crystalline phases on its own is affected by the presence of Silica-PCPs.

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