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Silica Polypeptide Composite Particles as Responsive Materials for Jamming Transition Studies[1] ALYSSA BLAKE, PAUL RUSSO, None — Silica polypeptide composite particles consisting of an inorganic, colloidal silica core and an organic polypeptide shell can be used as model systems for studying biological and physical particle interactions. The polypeptide shell can undergo secondary conformational transitions between an alpha helix and random coil conformation, which results in a stimuli responsive material. Jamming of responsive materials has mainly used stimuli responsive polymers such as PNIPAM but these particles can undergo similar changes by switching the polypeptide conformation. Preliminary jamming studies of the polypeptide composite particles, using fluorescence photobleaching recovery, can be conducted to determine how responsive polymers effect the jamming phase transition of soft colloidal materials.

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