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Correlating nanoscale structural changes to macromolecular gel formation in Laponite containing Pluronic F127 photogeling systems K. ANNE JUGGERNAUTH, Macromolecular Sci. & Eng. Research Center, Materials Sci & Eng Dept, University of Michigan, BRIAN LOVE, Materials Sci & Eng Dept, University of Michigan, UNIVERSITY OF MICHIGAN TEAM — Polymer nanocomposites has been a growing scientific field over the last 20 years. Recently, there has been increasing interest on nanocomposite systems with active responses to external stimuli such as heat, magnetic fields and light. The focus of this work is on a reversible thermoresponsive system, Pluronic F127 with added inorganic disk-shaped nanoparticles of Laponite. We further modify this system with the addition of a photoacid generator to enable photogelation. However, the nanoscale particle-particle and polymer-particle interactions within this Laponite/ block copolymer system are not well understood. We report on the photogelation kinetics of this system and further probe the interactions and rearrangement kinetics with heat and light exposure using in-situ synchrotron small angle x-ray scattering.

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