

Abstract Submitted  
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**Particle networks through aggregation in polymer nanocomposites** MEISHA SHOFNER, Georgia Institute of Technology, JASMEET KAUR, JI HOON LEE — Structure-property research in polymer nanocomposites has often focused on producing systems that are homogeneously dispersed in order to capitalize on the large amount of specific surface area available from nanoparticles. However, inhomogeneous dispersion is often obtained and in some cases has been deliberately sought to enhance functional properties through the formation of particle networks. In this research, we are seeking to understand how particle aggregation impacts network formation in polymer nanocomposites as a function of native particle shape. Specifically, we are characterizing nanocomposites comprised of calcium phosphate particles with different shapes and a polyhydroxybutyrate matrix. Experimental results concerning the effect of particle aggregation and shape on polymer crystalline structure, thermal transitions and mechanical properties are presented to correlate particle aggregation to network formation and understand structure-property relationships in these materials.

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