

Abstract Submitted
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Static and Dynamic Neutron Scattering Studies of Polystyrene-Silica Nanocomposites.¹ SUDEEPTO SEN, YUPING XIE, SANAT KUMAR, Rensselaer Polytechnic Institute, DEREK HO, VICTORIA GARCIA-SAKAI, National Institute of Standards and Technology, RPI/NIST COLLABORATION — Studies of polymer chain conformation and dynamics in the presence of nanofillers are critical in the context of the mechanical properties of polymer nanocomposites. We will present the results from recent and ongoing SANS experiments on polystyrene-silica nanocomposites containing polystyrene matrices of different molecular weights and silica nanofillers (10 – 15 nm in diameter) over a range of weight fractions. Preliminary neutron backscattering fixed-window scans of these nanocomposites indicate a similarity between the dynamics of the nanocomposites and thin polystyrene films in the sub-glass region. These results and results from ongoing backscattering experiments will also be discussed.

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