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Interfacial slip in polymer blends with nanoparticles JOSEPH ORTIZ, Dept of Materials Science and Engineering, Stony Brook University, Stony Brook, NY 11794, EIHAB JABER, Dept. of Chemistry, Worcester State College, Worcester, MA 01602, DILIP GERSAPPE, Dept of Materials Science and Engineering, Stony Brook University, Stony Brook, NY 11794 — The interfacial region in polymer blends has been identified as a low viscosity region in which considerable slip can occur when the blend is subjected to shear forces. Here, we use Molecular Dynamics simulations to establish the role that added nanofiller particles play in modifying the interfacial rheology. By choosing conditions under which the fillers are localized either in the two phases, or at the interface we can look at the interplay between the strengthening capability of nanoparticles, and the change in the interfacial slip behavior. We examine particle size, attraction between the particle and the polymer component and the amount of filler in the material. Our studies are performed both above and below the point at which the filler particles form a transient network in the blend.

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