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Interfacial Slip in Polymer Blends with Nanoparticles JOSEPH ORTIZ, Department of Materials Science & Engineering, Stony Brook University, EIHAB JABER, Department of Chemistry, Worcester State College, DILIP GERSAPPE, Department of Materials Science & Engineering, Stony Brook University — 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 nanoparticle fillers 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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