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Viscoelastic behavior of PDMS thin films with POSS nanofillers

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— Blends of amphiphilic poly(dimethylsiloxane) (PDMS) and a model polyhedral oligomeric silsesquioxane (POSS) nanofiller, trisilanolisobutyl-POSS, have been studied via the Wilhelm plate technique and surface light scattering (SLS). The surface pressure – surface concentration isotherms indicate that as the weight percentage of POSS increases in the blend systems, the collapse pressure of PDMS. SLS results reveal that increasing film's POSS content increases the dilational modulus of the PDMS thin films. This system is ideal for studying how nanofillers affect the viscoelastic behavior of polymer thin films at an attractive surface.

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