

AGING OF AQUEOUS LAPONITE
DISPERSIONS IN THE PRESENCE
OF SODIUM POLYSTYRENE SULFONATE

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S u m m a r y

Aqueous suspensions of Laponite with discotic particles are well-studied and find a wide range of applications in industry. A new direction of their implementation is polymer composites that can exhibit improved physical properties. We have studied the aging of aqueous suspensions of Laponite and sodium polystyrene sulfonate (PSS–Na) and both their microscopic (small-angle X-ray scattering, SAXS) and macroscopic (small amplitude oscillatory shear (SAOS) rheometry) properties. The concentration of Laponite, C_L , was fixed at 2.5% wt and concentration of PSS–Na, C_p , was varied within 0–0.5% wt (0–24.2 mM). It is shown that the adding of PSS–Na significantly accelerates the aging. Nevertheless, the systems were stable against the sedimentation, and the flocculation didn't occur. Polyelectrolyte induced the appearance of large-scale fractal heterogeneities, which became more compact in the course of the aging.