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Dynamics of Polystyrene-Polyisoprene (PS-PI) Micelles in Selective Solvents. DVORA PERAHIA, Chemistry Department Clemson University, Clemson SC 29634-0973, GANG CHENG, Chemistry Department Clemson University, Clemson SC 29634-0973 — We have recently shown that dissociation of isotropic-to-micelles phase transition of PS-PI micelles in decane takes place gradually where the micelles dissociated into smaller ones and eventually into a unimolecular micelles where the polystyrene is surrounded by the polyisprene. In here we report the dynamics of the PS-PI block as studied by neutron spin echo experiments as the dissociation takes place. With increasing temperature the entire system becomes more dynamic as expected. However on the length scale of the size of the micelle, the diffusion is constrained up to temperatures where most of the micelles, have dissociated whereas on the segmental level the dynamics is characteristic of that of a free molecule. The dynamics with in the micelle and the nature of the dissociation transition will be discussed.

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