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**Pressure effects on Solutions of Diblock Copolymers: Small Angle Neutron Study** DVORA PERAHIA, Clemson University, GANG CHENG, Clemson University — The effects of pressure on the shape of the micelles of Polystyrene-b-Polyisoprene (PS-PI) in decane were studied as a function of temperature and concentration using small angle neutron scattering (SANS). Decane is a preferential solvent for the PI block, thus driving the association of the polystyrene groups. These diblocks self-assemble in decane to form star-like spherical micelles with a swollen polystyrene core and a diffuse polyisoprene corona. All the solutions studied exhibit a critical micelle temperature, i.e. temperatures under which most of the polymer molecules are within the aggregates. In solutions consisting of none-interacting micelles, with increasing pressure, increasing the pressure up to 2000 PSI, results in changes of the shape of the micelles from spherical to elongated objects. At higher concentrations, the inter-micellar interactions increase significantly. Changing the pressure affects the miscibility of the different components and as such the structure of the basic aggregates.

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