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Effect of the Soluble Block Size on Spherical Diblock Polymer Micelles ISAAC LARUE, MIREILLE ADAM, University of North Carolina at Chapel Hill, MARINOS PITSIKALIS, NIKOS HADJICHRISTIDIS, University of Athens, SERGEI SHEIKO, EKATERINA ZHULINA, MICHAEL RUBINSTEIN, University of North Carolina at Chapel Hill — In order to understand the effect that the soluble block has on the equilibrium size and shape of polymer micelles, we have characterized spherical micelles formed from two series of polystyrene-bpolyisoprene in dilute solutions of the selective solvent, heptane. We show that varying the soluble (PI) block from 10-100K when the insoluble (PS) block is kept constant (20K and 40K) changes the CMC by over an order of magnitude for both series and the aggregation number by an order of magnitude for the 20K series and a factor of 3 for the 40K series. We have also studied the effect that temperature has on the CMC of the two series. The results are found to be in good agreement with recently developed theory.

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