Kinetics of Transition between HEX and Lamellar Phases in a triblock copolymer solution in a selective solvent. YONGSHENG LIU, RAMA BANSIL, Boston University, MILOS STEINHART, Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic — Synchrotron based time-resolved small angle x-ray scattering (SAXS), was used to study the kinetics of ordering transition (OOT) between cylindrical micelles in HEX phase and lamellar (LAM) phase in a 0.4 (w/v) solution of a triblock of polystyrene (PS) and poly(ethylene-co-butylene) (PEB), SEBS (PS-PEB-PS) copolymer in Dibutyl Phthalate (DBP), a selective solvent for the PS block. From a temperature ramp experiment the OOT was identified at about 137°C and an ODT above 160°C. Several temperature jump experiments from HEX to LAM and the reverse were performed over the temperature range of 110-155°C. Detailed analysis of the time evolution of the intensities of the Bragg peaks to follow the kinetics of the transition between HEX and LAM phases will be presented. A model to explain the transition mechanism will be discussed. This research was supported by NSF-DMR.

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