

Abstract Submitted  
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**The Influence of Electric Fields on the Order-Disorder Transition Temperature of Block Copolymer Systems**<sup>1</sup> HEIKO SCHOBERTH, Lehrstuhl fuer Physikalische Chemie II, Universitaet Bayreuth, D-95440 Bayreuth, Germany, KRISTIN SCHMIDT, Materials Research Laboratory, University of California, Santa Barbara, CA 93106, USA, KERSTIN SCHINDLER, ALEXANDER BÖKER, Lehrstuhl fuer Physikalische Chemie II, Universitaet Bayreuth, D-95440 Bayreuth, Germany — We investigate the influence of electric fields on the phase behavior of diblock copolymers in concentrated solutions using synchrotron small-angle X-ray scattering (synchrotron SAXS). When heating the solutions through the order-disorder transition temperature  $T_{\text{ODT}}$ , we find a significant decrease in  $T_{\text{ODT}}$  with increasing electric-field strength. In addition we found a temperature regime in which it is possible to switch between the mixed and phase separated state at constant temperature upon application of a moderate electric field.

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