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**Examination of the Structure of Molten Hydrogen-Bonded Supramolecular Diblock Copolymers** KATHLEEN FELDMAN, MATTHEW KADE, CRAIG HAWKER, EDWARD KRAMER, UCSB — A new strategy for synthesizing low polydispersity polymers containing multiple hydrogen bonding (MHB) groups at one chain end capable of heterodimerization in both solution and the melt has been developed. Two well-known MHB systems were chosen for initial studies—2-ureido-4[1H]-pyrimidinone (UPy) and 1,8-diamidonaphthyridine (Napy), and ATRP initiators containing either UPy or Napy were synthesized. These initiators were shown to produce well-defined (meth)acrylic polymers with the desired MHB functionality present at the chain end. To characterize the effectiveness of the MHB interaction in the melt, blends were cast into films, annealed at various temperatures above  $T_g$ , then quenched and their structure analyzed by transmission electron microscopy (TEM) and differential scanning calorimetry (DSC). It was shown that the nature of the hydrogen bonding group(s) present in the blend has a significant effect on structure and thermal behavior, and in particular blends of UPy- and Napy-functional chains contain a significant fraction of “supramolecular diblock copolymers.”

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