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**Rod-to-Coil Transition in Polypeptide/ $\pi$ -Conjugated Polymer/Polypeptide Triblock Copolymers** RAFFAELE MEZZENGA, LAURENT RUBATAT, Fribourg University, Physics Department, Switzerland, XIANGXING KONG, SAMSON JENEKHE, University of Washington, Seattle, USA, JANNE RUOKOLAINEN, Helsinki University of Technology, Finland, MOHAMAD HOJEIJ, EPFL, Switzerland — Self-assembly in the bulk of a series of hybrid triblock copolymers formed by a poly(9,9-dihexylfluorene-2,7-diyl) (PHF) internal block and two poly( $\gamma$ -benzyl-L-glutamate) (PBLG) external blocks has been studied. Since the  $\alpha$ -helical secondary structure of the PBLG block may be either maintained or suppressed depending on the solvent casting history, the PBLG-PHF-PBLG copolymers exhibit two different conformations: a rod-rod-rod or coil-rod-coil configuration, respectively. To provide insight on the influence of molecular architecture on self-aggregation of these systems, three copolymers with different block ratio were investigated in both conformations using small- and wide-angle scattering techniques and transmission electron microscopy. Time-resolve photoluminescence measurements were performed on the same samples to explore the effect of morphology on photophysical properties. The observed photoluminescence spectra and dominant excited lifetimes of the poly(9,9-dihexylfluorene-2,7-diyl) block were found to differ markedly in rod-rod-rod and coil-rod-coil configurations and were correlated to the morphology of the self-assembled triblock copolymers.

Raffaele Mezzenga  
Fribourg University, Physics Department, Switzerland

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