

PC 56

SELF-ASSEMBLY OF STAR COPOLYMER WITH FOUR POLY(ϵ -CAPROLACTONE)-*block*-POLY(OXYETHYLENE) ARMS IN AQUEOUS SOLUTION

M. Štěpánek, M. Šrámková, P. Matějčíček, K. Procházka

*Department of Physical and Macromolecular Chemistry, Faculty of Science,
Charles University, Hlavova 2030, CZ-128 40 Prague 2, Czech Republic
(stepanek@natur.cuni.cz)*

Self assembly of a star copolymer consisting of four poly(ϵ -caprolactone)-*block*-poly(oxyethylene) arms, (PCL-PEO)₄, with PEO blocks in the center of the star, has been studied by a combination of light scattering, atomic force microscopy and fluorescence and ¹H-NMR spectroscopies. The behavior of the star copolymer was compared with that of the corresponding diblock copolymer, PCL-PEO.

Results suggest that in aqueous solutions, (PCL-PEO)₄ forms micellar aggregates in which cores of individual micelles are formed by hydrophobic PCL ends of the star arms, while PEO hydrophilic centers of the stars form joint coronas of the micelles and stabilize the aggregates.