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**Structure and Dynamics of Microemulsions/Micelles in the Presence of a Monolayer Interface in the Ternary Amphiphilic Systems: A Computer Simulation Study** HONGXIA GUO, Department of Material Sciences and Engineering, Northwestern University, MONICA OLVERA DE LA CRUZ, DEPARTMENT OF MATERIAL SCIENCES AND ENGINEERING, NORTHWESTERN UNIVERSITY TEAM — Ternary amphiphilic systems such as amphiphilic block copolymers in selective homopolymer blends and surfactants in oil and water solutions are of great importance in many physical and biological systems. The amphiphilic molecules segregate into the interface of the corresponding immiscible (or incompatible) majority components. The amphiphilic molecules may also solubilize the homopolymers or water and/or oil into a microemulsion/micelle phase. We analyzed microemulsification of block copolymers at an interface by a computer model consisting of A homopolymer, B homopolymer and A-C copolymer in which the C segments have strong favorable interaction with the B homopolymer. By tuning the interaction between B and C components and adjusting the A-C concentration above the critical micelle concentration, we find segregation of A-C copolymers into the interface between A and B homopolymers, the stable polymer microemulsion consist of the B homopolymer in the core and A-C copolymer in the corona suspended in the A homopolymer matrix. The phase behavior and structure is examined as a function of concentrations and intermolecular interactions of the components.

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