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Micellization behavior of A-*b*-(B-*alt*-C)$_n$ multiblock terpolymers in a selective solvent for one terminal A-block YU-CHIEH HSU, CHING-I HUANG, Institute of Polymer Science and Engineering, National Taiwan University, Taiwan, WEIHUA LI, FENG QIU, Department of Macromolecular Science, Fudan University, China, AN-CHANG SHI, Department of Physics and Astronomy, McMaster University, Canada — We used self-consistent field theory to investigate the micellization behavior of A-*b*-(B-*alt*-C)$_n$ multiblock terpolymers in the presence of a solvent that is selective to the terminal A-block. In particular, we focused on the effects of χ_{BC}, and f_A, on the formation of micelles from ABC triblock and A(BC)$_3$ multiblock terpolymers, respectively. We observed a general trend that a segmented packing of B- and C-layers along the axial direction of the micelles is favored than the coaxial packing with the increasing of χ_{BC} or decreasing of f_A. The separation of B and C blocks within a micelle leads to the formation of a variety of multicompartment micelle morphologies, such as core-shell-corona spherical micelles, hamburgers, and bump-surface micelles, in the ABC triblock copolymers. In the A(BC)$_3$ multiblock terpolymers, we discovered more fascinating micelles by implementing the SCFT simulation than by the DPD simulation. Besides the BC-segmented worm-like micelles, which have been found in the DPD simulation work, concentric multilayer spheres and vesicles can be formed by the solvent-induced effect when the solvophilic A-block is a majority component.

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