Degradation versus Self-Assembly of Block Co-polymer Micelles

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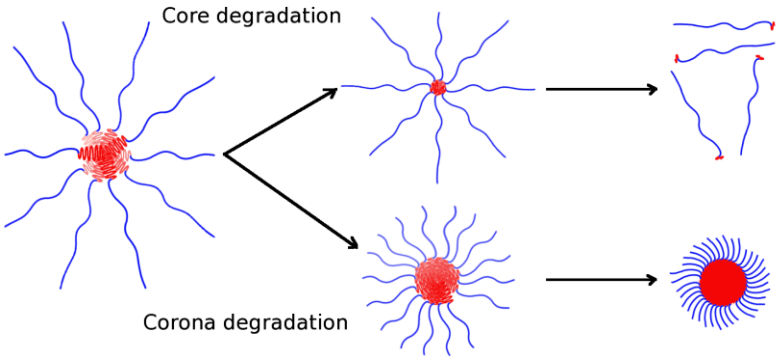
Abstract

The stability of micelles self-assembled from block co-polymers can be altered by the degradation of the blocks. Slow degradation shifts the equilibrium size distribution of block co-polymer micelles and changes their properties. The quasi-equilibrium scaling theory shows that the degradation of hydrophobic blocks in the core of micelles destabilizes the micelles, reducing their size, while the degradation of hydrophilic blocks forming coronas of micelles favors larger micelles and may, at certain conditions, induce the formation of micelles from individual chains[1].



[1]A. Muratov and V.A. Baulin, "Degradation versus self-assembly of block copolymer micelles", Langmuir, 28, 3071-3076 (2012)