Seminar

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Crystalline-Core Micelles (CCMs): A Toolbox for Complex Surface-Compartmentalized Nanostructures

Nanoparticles with defined surface anisotropies (Janus-type or patchy surface compartmentalization) are currently of increasing interest due to their promising properties like hierarchical self-assembly into complex superstructures or their outstanding surface activity. Crystallization induced self-assembly of ABC triblock terpolymers with crystalline polyethylene (PE) middle blocks in solution can be used to produce patchy particles in a comparatively easy manner. Depending on the quality of the solvent used for PE, either spherical or worm-like crystalline core micelles (CCMs) with a patchy corona can be generated in a highly selective fashion from the same triblock terpolymer. This approach allows also the production of more complex nanostructure like block co-micelles. First results on the interfacial activity of the produced patchy particles indicate that their properties are comparable to that of Janus-type particles.

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