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Function in block copolymer assembly

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Spontaneous mesophase and colloidal organization of linear blockcopolymers in bulk and in thin films yields a wealth of well defined metastable and equilibrium structures with intriguing perspectives of new materials functionalities. Besides length, composition, and the type and number of the constituent blocks, branching and chemical transformation provides a further parameter for controlling the molecular conformation and structure. Here we will report on thermal and photo induced single molecule collapse and micellar assembly switching.for comb, palmtree blockcoplymers, as well as for amphiphilic polymer complexes as a means to introduce novel and responsive functionalities, such as motility and hydrophilic/hydrophobic switching.