

Controlling Supramolecular Assemblies with Peptidic Scaffolds

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Self-assembly and selective recognition events involving proteins are critical in nature for the function of numerous different processes, for example, catalysis, signal transduction or the controlled formation of structural components such as bones. My group is intrigued by the question whether also peptides with significantly lower molecular weights compared to proteins can fulfill functions for which nature evolved large macromolecules. Specifically we ask whether peptides can serve as effective asymmetric catalysts, templates for the controlled formation of metal nanoparticles, hierarchical supramolecular assemblies, synthetic collagen based materials, or tumor targeting vectors.