

Photoresponsive materials self-assembled from anisotropic nanoparticles (extension)

Initiative: Integration molekularer Komponenten in funktionale makroskopische Systeme (beendet, nur noch

Fortsetzungsanträge)

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Laufzeit: 3 Jahre

The aim of this project is to prepare photoresponsive materials by anisotropic self-assembly of nanoparticles. These materials self-assemble on the basis of photoresponsive supramolecular interactions of cyclodextrin host molecules and guest molecules that can be photoisomerized between a binding and a non-binding isomer, so that ultimately the macroscopic properties of the material are directed by a stimulus responsive molecular component. On the one hand particles with adhesive patches will be prepared using the complementary strategies of microcontact printing, cluster assembly, and surface alignment. A second objective is to improve the efficacy of photoswitching by introducing arylazopyrazoles (AAP) instead of conventional azobenzenes as molecular switches. Furthermore, the photoresponsive self-assembly of Janus particles in solution as well as on surfaces will be investigated. Finally, the directional movement of particles along photoresponsive polymer brushes will be studied.

Projektbeteiligte

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