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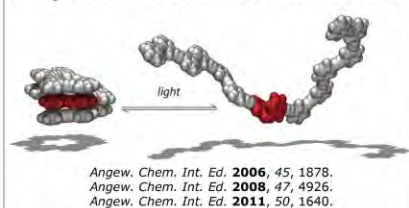
Designing Functional Molecular Nanostructures

Tuesday April 9th, 2013 1:00pm
Otto Maass room 10

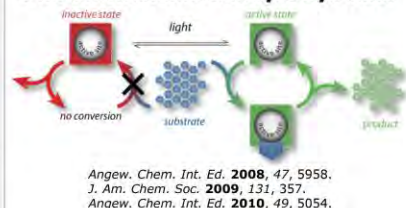
Organic synthesis enables the precise generation of functional molecular building blocks and constitutes the basis of chemical approaches that our group is developing to address various aspects of materials science. We are convinced that the design of custom-tailored molecular nano-objects and their integration into functional nanosized structures will be key to the future bottom-up fabrication of miniaturized devices and the creation of new responsive “smart” materials. Our work is primarily focused on the synthesis of small as well as large molecules with defined shape and function. For this purpose we are focusing on merging covalent as well as non-covalent syntheses (foldamers and self-assembly) and incorporate

photochromic moieties (azobenzenes, diarylethenes, and spiropyrans) into the molecular systems to control and even drive them by external stimuli, in particular light. Complementing our synthetic efforts, we are investigating structure-property relationships of the resulting materials on both the single molecule and the ensemble levels in solution and in the bulk as well as at interfaces, in particular solid substrate surfaces. The presentation will cover our recent activities in a variety of different areas:

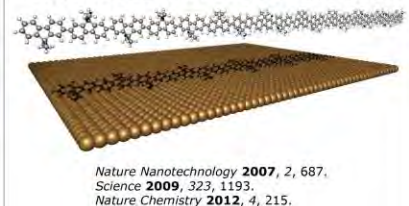
Responsive Foldamers & Assemblies



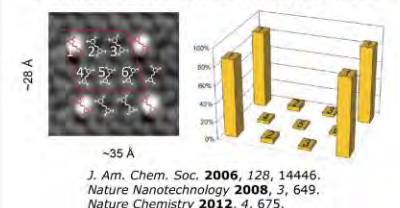
Photoswitchable Catalyst Systems



Covalent Construction at Surfaces



Switch Assemblies at Interfaces



Photoswitches

Preorganized Scaffolds

(Non)covalent Assembly

Surface Confinement

EVERYONE IS WELCOME!