

Self-assembly of photoresponsive supramolecular soft matter

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Self-assembly is emerging as a superior method to prepare responsive and adaptive nanomaterials. The structure and function of these materials is entirely determined by the dynamic and weak interactions of the constituent molecular “building blocks” of the material. Since the inherent interactions are weak, these versatile materials readily respond to even small changes and stimuli in their environment.

This lecture will highlight our recent work on self-assembled supramolecular nanomaterials that respond and adapt to light. In all these nanomaterials, molecular photoswitches are key components. The improved molecular design of photoswitches enables the bottom-up self-assembly of tailor-made functional materials and interfaces that can be manipulated with light. Amongst others, light-responsive surfactants, liquid crystals, adhesives and molecular solids will be discussed. Also, the optical manipulation of cell shape with light will be addressed.

Biography:



Bart Jan Ravoo obtained his PhD from the University of Groningen. He completed a postdoctoral stay at University College Dublin followed by an assistant professorship at the University of Twente. Currently he is full professor at the University of Münster. Together with his research group, he studies responsive supramolecular materials. Bart Jan Ravoo is co-director of the Center for Soft Nanoscience and spokesperson for the Collaborative Research Center CRC 1459 “Intelligent Matter” at the University of Münster.