Molecularly controlled, stimuli-sensitive hydrogels for dynamically adjustable biohybrid actuators

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

Bewilligung: 25.06.2017

Laufzeit: 3 Jahre

The project aims for the generation of a macroscopic biohybrid, hydrogel-based actuator with actuation by cells. These will be grown on a molecularly defined, responsive material and stimulated to contract. Local, externally controllable variations in the hydrogel will control the level of contraction. In this way, different actuator movements on the macroscale will be possible. The final goal is a prototype of such a novel actuator, and a thorough investigation of the complete system from the molecular scale to the macroscopic device, particularly with regards to actuation efficiency.

Projektbeteiligte

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Mapping of magnetic nanoparticles and cells using thin film magnetoelectric sensors based on the delta-E effect.