

Quorum sensing artificial materials (QUOSAM)

Initiative: "Experiment!" (beendet)

Ausschreibung: Explorative Phase

Bewilligung: 01.03.2021

Laufzeit: 1 Jahre 6 Monate

Quorum sensing is a phenomenon of unicellular organisms to induce a different response depending on their population density. Only to name two natural examples, quorum sensing is the basis of biofilm formation of some bacteria or the bioluminescence of squids, which have a larger number of symbiotic bioluminescent bacteria in specialized light organs. Noteworthy, these bacteria will not glow isolated. In this project the biological principle of quorum sensing is intended to serve as an inspiration for the design of a new generation of synthetic polymeric materials. These polymers will feature different properties based on their concentration or number. They can "communicate" amongst each other and certain functions or properties of the material are only enabled as soon as sufficient particles are spatially close to each other. This behavior will enable the design of the next generation of intelligent materials.

Projektbeteiligte

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