UNIVERSITÄT LEIPZIG

Fakultät für Physik und Geowissenschaften

PhD Opening for the Soft Matter Physics of Biofilms

We are currently seeking a PhD candidate to study bacterial biofilm dynamics using live cell laser scanning microscopy, real-time chemical monitoring, and simulations. The project is part of a research collaboration aimed at developing sustainable hybrid living materials to sequester greenhouse gases. The PhD position is jointly supervised by Frank Cichos (Molecular Nanophotonics) and Oskar Hallatschek (Evolutionary Dynamics and Biophysics) at the Peter Debye Institute for Soft Matter Physics (Leipzig).

Most microbes live in spatially structured communities called biofilms. Akin to microbial cities, biofilms represent an entangled web of functional structures, which provide resources and division of labor. The goal of the thesis is to monitor, model, and control the dynamics of these functional structures to ultimately grow biofilms with desired physico-chemical properties.

We are seeking a highly motivated PhD candidate with a very good master's degree in physics or physical chemistry with excellent English proficiency. The work will allow the successful applicant to acquire expert skills and knowledge on innovative optical and infrared microscopy, image and time-series analysis, and simulations.
The project will be done in a close collaboration between theory and experiment. Applicants should therefore be committed to collaborative and interdisciplinary work and have excellent oral and written communication skills (records of creative and independent scientific research and active participation in its dissemination in peer-reviewed journals are welcome).

The working language is English. Salaries will be according to DFG standards.

Applications including 1) a letter of interest (max. 1 page), clearly stating the specific motivation of the candidate to join the group, work on this project, career goals, etc., 2) a CV, 3) grade transcripts or equivalent record of excellent academic performance, clearly indicating courses taken and grades in each course (for MS and BS), 4) the names of at least two consenting referees to both cichos@physik.uni-leipzig.de and oskar.hallatschek@physik.uni-leipzig.de. **Applications will be considered until the position is filled.**