POST-DOCTORAL POSITION:

Chemically Fueled Non-Equilibrium DNA Materials Systems

In the framework of the DFG Cluster of Excellence on “Living, Adaptive and Energy-Autonomous Materials Systems” (livMatS), the Walther group at the Institute for Macromolecular Chemistry at the Albert Ludwigs University of Freiburg is searching for a highly motivated postdoctoral researcher with a background in chemistry, soft matter science or DNA nanosciences to work on “Chemically Fueled, Non-equilibrium DNA-based Self-Assembling Materials Systems” with an overall aim to create life-inspired, chemically fueled, non-equilibrium DNA systems, that mimic the principles and dynamics of microtubules and other dynamic cytoskeleton fibrils. The resulting systems and materials are expected to feature unexpected steady-state dynamics (i.e. dynamic instabilities) as well as limited lifetimes in autonomous systems programmed through the consumption of chemical fuels. The project is strongly interdisciplinar and connects DNA nanotechnology, polymer and colloid science with non-equilibrium self-assembly, and physical chemistry. The project can be developed in the direction of increasing structural complexity (e.g. DNA origami), higher chemical reaction network complexity (e.g. advanced feedback mechanisms) or in the direction of materials with an emphasis on hydrogels and soft robotics application.

We provide you with an inspiring and collaborative team atmosphere, cutting-edge infrastructure and ample opportunities to develop first steps towards an individual scientific profile.

Selected recent references on the topic:


More information on the group can be found here: www.walther-group.com

EXPECTED CANDIDATE PROFILE

As an ideal candidate you are creative, highly self-motivated, ambitious and communicative to excel in scientific challenges, and have a proven track record with innovative publications in a relevant field (polymer/colloid chemistry/physics, soft matter, DNA nanoscience). A keen interest in physical chemistry, advanced analytics (in particular microscopy) and working with biological components is a must. Previous research experience in DNA-based materials, non-equilibrium self-assembly and enzymes is a plus.

The position is available from March 2019 and has a duration of 2 + 1 years.

Please send your full application as a single PDF file containing
- letter of motivation including a summary of your past research experience, in particular a meaningful summary of your PhD and master thesis
- curriculum vitae and list of publications
- Two contacts for reference letters

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