

The Institute for Computational physics (ICP) has two openings for PhD candidates in the area of Computational and Theoretical Soft Matter and Biophysics.

1) Ph.D. position for a modeling project within the Collaborative Research Center SFB1333 <https://www.uni-stuttgart.de/en/university/news/press-release/DFG-foerdert-neuen-Sonderforschungsbereich-an-der-Universitaet-Stuttgart/> project C6, **a multiscale simulation approach for optimizing molecular heterogeneous catalysis in confined geometries**. This project involves the employment and further development of a reactive Electro Kinetics Lattice-Boltzmann algorithm to catalytic problems. The project will involve cooperation with experiments in the Chemistry department of the University of Stuttgart.

2) Ph.D. position for simulating polyelectrolyte hydrogels under various conditions for applications in water desalination. The modeling part employs coarse-grained simulations of macro or microgels under various outer conditions. The focus will be on weak, pH dependent gels. Some interest in pursuing theoretical calculations would be helpful, since we aim also at developing mean-field analytical models for describing the swelling of the gels.

Common to all applicants should be a strong background in statistical physics and MD or MC simulation techniques, and basic knowledge of soft matter (polymers, polyelectrolytes, colloids) or knowledge in atomistic modeling (biomolecules, proteins). Ideally, applicants have also some background in the algorithmic foundations of MD/MC computer simulations, or have already experience with developing new methods. All simulations will be performed using the software package ESPResSo (espressomd.org) and will require implementation of some components within the ESPResSo package.

There will be ample opportunity to interact with other researchers at Stuttgart, the Max Planck Institute for Intelligent Systems, and the University of Stuttgart.

All positions are initially for one year, renewable upon a mutual agreement. Candidates should have the relevant background in a quantitative discipline (see above) and a keen interest in several of the lab's research areas. Applicants should submit:

- Detailed Curriculum Vitae (including date of birth, grades, awards, publications),
- Statement of research interests (up to 2 pages),
- Names and email addresses of 2 reference
- Links to their thesis and/or publications

Positions will remain open until filled. Please send applications via email to bewerber@icp.uni-stuttgart.de, or if you are located in Stuttgart, simply drop by our institute.

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