

nature careers

Research assistant (Praedoc) (m/f/d) - Department of Physics

[Free University of Berlin \(FU Berlin\)](#)

Berlin, Germany

Posted about **2 weeks ago**

Expires on **July 18, 2022**

Department of Physics – Institute for Theoretical Physics

Research assistant (Praedoc) (m/f/d)

with 3/4-part-time-job, limited to 30.11.2024, Payment group 13 TV-L FU
reference code: 2022_NoMaNemo_PhD-student

Research in the Netz group focuses on the dynamics and structure of biological and liquid matter with wide applications in medical, biological and nano sciences. We use a wide arsenal of theoretical methods, ranging from ab initio and classical force-field based molecular dynamics simulations over coarse-grained simulations to analytic calculus employing scaling arguments, field-theoretic and stochastic methods. We are particularly interested in problems that can only be tackled by a combination of simulations and analytic approaches. For such problems we develop various methods to connect simulations to continuum theory.

Job description:

The Ph.D. position is part of the project „NoMaMemo“, funded via the ERC Advanced H 2020 Grant „Non-Markovian Memory-Based Modelling of Near- and Far-From-Equilibrium Dynamical Systems“ of the European Union. In the research, force-field and quantum-chemical molecular dynamics simulations as well as Langevin simulations of molecular systems and proteins shall be performed and analyzed, from which linear and non-linear absorption spectra will be calculated. Further goal is the development of methods to theoretically model reaction kinetics and spectral densities based on the generalized Langevin equation. The third-party funded research project provides an opportunity to do a doctorate.

Requirements:

Successful completion of studies in physics, theoretical chemistry, computational sciences or an equivalent field with a Diploma or Master's degree

Desirable:

Familiarity with classical force-field, ab initio MD simulations and Langevin simulation and the calculation of spectra from simulation trajectories. Good command of equilibrium and non-equilibrium statistical mechanics and stochastic theory. Very good grades, particularly in numerical methods, statistical mechanics and stochastic theory.

For further information, please contact Herr Prof. Dr. Roland Netz (rnetz@physik.fu-berlin.de / (+49) 30 838 – 54781).

Applications should be sent by e-mail, together with significant documents, indicating the **reference code not later than July, 18th, 2022**, in PDF format (preferably as one document) to Herrn Prof. Dr. Roland Netz: rnetz@physik.fu-berlin.de or postal to

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