Conducting research for a changing society: This is what drives us at Forschungszentrum Jülich. As a member of the Helmholtz Association, we aim to tackle the grand societal challenges of our time and conduct research into the possibilities of a digitized society, a climate-friendly energy system, and a resource-efficient economy. Work together with around 7,100 employees in one of Europe’s biggest research centres and help us to shape change!

The Institute of Neuroscience and Medicine - Computational Biomedicine (INM-9) at Forschungszentrum Jülich develops and uses computational methods going from multi-scale molecular simulations to bioinformatics and drug design to face the challenge of understanding the molecular basis of cellular (especially neuronal) signaling processes. Because of the complexity of the systems under study, simulation approaches require massive parallel computing resources such as those available at the Jülich Supercomputing Center (JSC) at Forschungszentrum Jülich.

The offered position is part of an ambitious European project funded by the Horizon 2020 FET Open program, aiming at deciphering the role of long-range electrodynamic interactions (LEDIs) on protein-protein recognition processes. The research will be conducted in close collaboration with Professor Marco Pettini (Centre de Physique Théorique, France), as well as experimentalists in the field of THz spectroscopy, time-resolved X-ray and fluorescence correlation spectroscopy.

We are looking to recruit a

**Postdoc in the field of Long-range Electrodynamic Interactions between Proteins**

**Your Job:**
In living matter, a complex network of molecular events involving hundreds of different molecules, which have to diffuse, meet and interact at the correct time in the correct place, is responsible for the transmission of information through cells. All these biochemical reactions are highly spatially organized and coordinated. This project aims at extending the paradigm of the self-organization of the intracellular living matter, by exploring the existence of long-range electrodynamic interactions (LEDIs) between proteins. Energy condensation phenomena in the THz frequency band, upon suitable energy injection rate, have been hypothesized as possible mechanism for LEDIs activation. Your tasks in this context are:
• Using out-of-equilibrium MD simulations to study the possible activation mechanisms of LEDIs in solvated proteins
• Writing scientific publications and reports
• Presenting the results in international conferences and meetings with the collaborators

Your Profile:
• Excellent university degree (Master) in either physics, biophysics or biochemistry
• PhD degree in one of the above disciplines
• Strong background in statistical physics and MD simulations of biological system
• Ideal previous experience with normal mode analysis
• Records proving the accomplishment of a successful independent work
• Excellent knowledge of written and oral English
• Interactive person with good communication skills

Our Offer:
We work on the very latest issues that impact our society and are offering you the chance to actively help in shaping the change! We support you in your work with:
• A friendly work atmosphere and intensive exchange with colleagues
• Comprehensive training courses and individual opportunities for personal and professional further development
• Extensive company health management
• Ideal conditions for balancing work and private life, as well as a family-friendly corporate policy
• Flexible working hours in a full-time position with the option of slightly reduced working hours
• 30 days of annual leave and provision for days off between public holidays and weekends (e.g. between Christmas and New Year)
• Targeted services for international employees, e.g. through our International Advisory Service

We offer you an exciting and varied role in an international and interdisciplinary working environment. The position is initially for a fixed term of 2 years, with possible long-term prospects. Salary and social benefits in conformity with the provisions of the Collective Agreement for the Civil Service (TVöD). Depending on the applicant’s qualifications and the precise nature of the tasks, salary grade 13 TVöD-Bund.

We welcome applications from people with diverse backgrounds, e.g. in terms of age, gender, disability, sexual orientation / identity, and social, ethnic and religious origin. A diverse and inclusive working environment with equal opportunities in which everyone can realize their potential is important to us.