UNIVERSITÄT OSNABRÜCK

The research group “Ultrafast Physics” (Prof. Mirco Imlau) is seeking to appoint for

1 Research Assistant (PhD) in Ultrafast Physics (m/f/d)
(salary grade E 13 TV-L, 65%)

at the Institute of Physics at the department of Mathematics/Informatics/Physics starting at the earliest possible date. The position is limited until June 30th, 2027. The research assistants are included in the recently founded interdisciplinary graduate school "*nanomaterials@biomembranes*" (DFG, RTG 2900-1).

In the graduate school, 12 PhD candidates belonging to physics, chemistry and biology will contribute with individual projects to one overaching goal: the design, characterization and understanding of photo-functional nanosystems to enable cellular interrogation at the molecular scale - so far missing in life sciences.

The research assistant working with Prof. Mirco Imlau will focus on the tailoring of femtosecond pulse trains and signal detection techniques to enhance energy transfer of upconversion nanoparticles for interrogation and photomanipulation at single molecular level.

Via this topic you will:

- Learn about the interplay between femtosecond pulse exposure, optical features of microscopic systems and samples, and digital signal detection in imaging systems.
- Reveal insight to the relation between pulse-induced energy flow and defect architecture (size, shape, doping concentration, core/shell-ratio, host material, etc.) of core-shell nanoparticles.
- Study the enhancement of nanoparticle emission by combining tailored fs-pulse trains with coincidence and correlation detection techniques.
- Contribute with your results to the research work of further PhD students of the graduate school that study nanoparticle synthesis, surface functionalization, and application in plasma membranes.

Your Duties:

- Participate in the DFG-funded research project “*Enhancement of the ucLRET: parametric tuning of femtosecond pulse trains, image coincidence detection and digital image correlation*” (Imlau) of the RTG 2900 “Rationally designed surface architectures for nanoscale interrogation and manipulation of biomolecules at membranes”.
- Supervise bachelor and master students (in your 2nd or 3rd year).
- Work & communicate in an interdisciplinary team, write research articles and present your results at national and international conferences.
- Participate in the development of hybrid thinking and related workshops of the research training group.

Requirements:

- Completed master’s degree (M.Sc.) in physics or related fields of study
- Knowledge in solid state physics and experimental research in optics
- Interest in interdisciplinary research
- Ability to work in a team and willingness to engage in multilateral research cooperation
- Written and spoken English skills
- Goal oriented and structured way of working

We offer:

- Laser class 4 laboratories equipped with chemical wet benches and S2 biological certification
- Cross disciplinary competences from scientific (physical-chemistry and bio-physics) and technical view point (lasers, electron and light microscopy, time-resolved spectroscopy, handling of biological samples, nanomaterial synthesis and characterization)
- Research and communication oriented seminars and workshops to foster scientific reputation and independency in interdisciplinary research fields.
- Technique based seminars and workshops at industrial level.
- Tandem supervision in an interdisciplinary team along the European Charter for Researcher
- Inclusion in a scientifc and industrial international network.
- Research stays at European collaboration partners and participation to (inter)national conferences.
- 30 days of holiday per full calendar year

Osnabrück University is a family-friendly university and is committed to helping working/studying parents balance their family and working lifes. Osnabrück University seeks to guarantee equality of opportunity for women and men and strives to correct any gender imbalance in its schools and departments.

If two candidates are equally qualified, preference will be given to the candidate with disability status.

Please submit your application indicating the desired project with the following documents: curriculum vitae, certificates incl. transcripts of records, letter of motivation and your application profile, in electronic form to Prof. Imlau, by july 16th, 2024, Email: RTG2900@uni-osnabrueck.de.

If you have any questions please do not hesitate to contact Dr. Mirco Imlau (mirco.imlau@uos.de).

We are very much looking forward to receiving your application.