

Within the junior research group "Attosecond Microscopy" (Dr. Jan Vogelsang) at the Institute of Physics of the Carl von Ossietzky University Oldenburg

**2 PhD positions / research assistants (f,m,d)**  
(each TV-L E13, 50%), **Reference Atto122021**

are to be filled as soon as possible. The positions are initially limited to 3 years.

The aim of the two doctoral projects advertised is to combine the high time resolution of attosecond laser spectroscopy with the high spatial resolution of electron microscopy in two complementary ways and to apply it to highly relevant nanosystems in the field of light-matter interaction. The first realization of attosecond time resolution on the nanoscale will make it possible to observe charge carriers in nanostructures directly as they realize their opto-electronic function. The developed methods are to be applied to various nanosystems such as 2D materials, semiconductor nanowires or plasmonic nanoparticles in order to expand our fundamental understanding of light-matter interaction. Possibilities to control these ultrafast nanoscale dynamics through nanostructuring and light pulse shaping are to be investigated.



<https://uol.de/stellen?stelle=68507>

The advertised doctoral projects are integrated into the project "Attosecond charge carrier dynamics at nanoscale interfaces" funded by the German Research Foundation (DFG) as part of the Emmy Noether program. This competitively funded project pursues the ambitious goal of combining methods of attosecond laser spectroscopy with photoemission electron microscopy. Excellent equipment in combination with the outstanding research environment in Oldenburg, close cooperation with project partners at the University of Lund (Sweden) and intensive support offer the opportunity to conduct highly relevant and internationally visible research. We attach particular importance to joint laboratory work, clear communication, regular feedback and realistic subgoals. Despite the ambitious overall project goals, this gives the opportunity for completing a doctorate in a reasonable time.

We are looking for highly motivated candidates who have successfully completed a scientific university degree (master's or equivalent) in experimental physics or related subjects. Excellent communication and teamwork skills are required as well as very good knowledge of English (spoken and written) due to the international research environment. The interest and the ability to quickly familiarize oneself with new research areas is required due to the interdisciplinary nature of the doctoral projects. Previous experience in the following areas is beneficial: ultra-short laser pulses, time-resolved pump-probe experiments, attosecond pulses, photoemission electron microscopy, semiconductor nanophysics, plasmonics, programming of measurement setups (e.g. Python, Matlab), data analysis.

The Carl von Ossietzky Universität is an equal opportunity employer seeking to increase the proportion of female employees in research. In accordance with Lower Saxony regulations (§ 21 Section 3 NHG) female candidates with equal qualifications will be preferentially considered. Disabled persons with equal qualification will be given preference.

Please send your complete application documents (letter of motivation, curriculum vitae, certificates, list of publications (if any)) stating the reference number **Atto122021** by **January 31, 2022**, preferably by email in a single PDF file to:

Dr. Jan Vogelsang  
Carl von Ossietzky Universität Oldenburg  
Fakultät V – Institut für Physik  
26111 Oldenburg  
jan.vogelsang@uol.de  
<https://www.uol.de/en/atto>