

OPEN PHD STUDENT/POST-DOCTORAL RESEARCHER POSITIONS:
Understanding Electron Transfer Across Solid/Liquid Water Interfaces

From a microscopic perspective all aqueous (photo)electrochemistry involves similar physics: electrons move between a solid electrode and an aqueous electrolyte and in so doing induce chemical change. As part of a recently funded ERC Consolidator Grant we seek multiple PhD students/post-doctoral researchers to experimentally characterise the chemistry of water splitting in several systems by watching electron transfer between solids and liquid water, and correlated chemical change, with femtosecond time resolution. The work will require the development and application of novel nonlinear optical probing techniques, as well as more conventional (photo)electrochemical characterisation. The program is embedded in the Physical Chemistry Department of the Fritz Haber Institute of the Max Planck Society in Berlin, Germany. The department is a world leading location for the study of ultrafast dynamics in solids using photon and electron based techniques. Beyond the department the Fritz Haber Institute has a storied history, and a large current effort, in the study of heterogeneous chemistry in general and (electro)catalysis in particular. The envisioned work strongly benefits from both strands of these ongoing activities. Requests for additional information and applications should be sent to Dr. R. Kramer Campen (campen@fhi-berlin.mpg.de). Applications will be accepted until positions are filled.

Potential post-docs should have a background in either(photo)electrochemistry or femtosecond optical spectroscopy and be fluent in written and spoken English. To apply please send the following materials to Dr. Campen as a single pdf attached to an e-mail with the subject line **ET: Post-doc**:

- ① Letter of motivation explaining how your background is useful for the project and how the work you do here will help you achieve your future goals.
- ② CV and list of publications.
- ③ Pdfs of your 2 most relevant prior papers as well as a description of your contribution to each.
- ④ Please arrange for letters of reference to be directly sent to campen@fhi-berlin.mpg.de from two people who are familiar with your research.

Potential PhD students should have a background in, Physical Chemistry, Physics, Electrical Engineering or related disciplines and send the following as a single pdf attached to an e-mail to Dr. Campen with the subject line **ET: PhD**:

- ① Letter of motivation explaining why you would like to do a PhD in the group.
- ② CV indicating educational and work experience and (if applicable) any scientific publications.
- ③ Certificates showing your academic record including results on a per course basis.
- ④ Please arrange for two letters of reference from professors or lecturers who are familiar with your work to be directly sent. If you have performed any undergraduate research projects,

at least one of the references should come from your research supervisor.

- 5) If your education has not been conducted in English a demonstration of English proficiency: typically equivalent to > 7.5 on IELTS or > 102 on TOEFL.

OPEN MS POSITION:

Building a New Light Source for Surface Specific Vibrational Spectroscopy

The ability to generate femtosecond duration continuum light sources is revolutionizing vibrational spectroscopy: we are just entering an era in which the possibility of characterizing the entire vibrational spectrum with femtosecond time resolution is possible. However, to this point, the application of such sources to surface-specific nonlinear optical probing techniques has lagged, principally because of the high pulse energies such methods generally require. Much effort has been expended over the last 3 years developing such sources for applications other types of experiments in solid-state and AMO physics. We seek a motivated MS student to optimize such a source for application to surface-specific vibrational spectroscopy. The ideal student should have a background in Physics, Photonics, Electrical Engineering or Physical Chemistry. Requests for additional information and applications should be sent to Dr. Martin Thämer (thaemer@fhi-berlin.mpg.de). Please attach application materials as a single pdf.

- 1) Letter of motivation explaining why you find this project interesting.
- 2) Certificates showing your academic record including results on a per course basis.
- 3) CV showing any previous relevant experience: particularly prior research internships.



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