



The Institute for Materials Science / Department for Materials Physics is offering a part-time position, preferably beginning October 1st, 2023

PhD student
“atom probe tomography of liquid/solid interfaces”

The position will be compensated conform with civil service grade **TVL-E13 (67%)**. It is temporary in compliance with the regulations of German scientific fixed-term contract law (maximum duration 6 years, offering qualification for a PhD).

Atom probe tomography is a cutting edge analytical microscopy that is well established in the analysis of nanostructured hard materials. However, applications to liquids and soft matter are rare. Recently, we developed methods of cryo-preparation that allow investigating needles of frozen liquids and demonstrated the method in studies of water, sugar solutions and nonpolar organic solvents [1-3]. The new PhD project shall extend to interfaces between two liquids or between a liquid and a solid, having in mind emulsions, liquid crystals and the space charge zone at batteries. The work will seek for specifically tailoring the laser pulse width and wave length by non-collinear optical parametric amplification. Innovative pump probe techniques shall be developed that enable a more reliable peak identification in complex time-of-flight mass spectra of organic liquids.

We are searching for a Master physicist or materials scientist who has particular interest in innovative measurement techniques and possibly a profound pre-training in materials science and microscopy in her/his Master education.

Women are especially encouraged to apply. Severely handicapped applicants with equivalent qualifications will receive preference.

Please send us your application preferably via email, to the following address:

Prof. Dr. Guido Schmitz
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- [1] Schwarz, et al., Scientific reports 11 (2021) 11607. <https://doi.org/10.1038/s41598-021-90862-8>
[2] Meng, et al., J. Microsc. Microanal. (2022), 1-11; <https://doi.org/10.1017/S143192762101254X>
[3] Segreto et al., J. Phys. Chem. A 2022, 126, 33, 5663. <https://doi.org/10.1021/acs.jpca.2c04163>