

PHD CANDIDATE IN SURFACE / INTERFACE SCIENCE

University of Applied Sciences Northwestern Switzerland
Paul Scherrer Institute

In the Laboratory for Micro- and Nanotechnology (LMN), Molecular Nanoscience Group (<http://www.psi.ch/lmn>) of the Swiss Paul Scherrer Institute, we investigate the mechanisms of magnetic coupling at the interfaces between metallic substrates and organic molecular layers [1]. New aspects of this coupling as well as interesting electronic and chemical interactions upon adsorption have recently been studied by our group [2,3].

In the laboratory of molecular nanotechnology of the University of Applied Sciences Northwestern Switzerland, we are working on the design of molecular systems able of self-assembly and molecular recognition [4,5]. We have recently demonstrated that Langmuir monolayers of amphiphilic supramolecules can be used to template the crystallization of two commercial APIs namely paracetamol and gabapentin [6]. The present project is based upon this finding and aims at exploring further the capabilities of Langmuir (and Langmuir-Blodgett) films to initiate epitaxial crystallization of APIs with a control over the polymorphic form produced

Your tasks

Your synthetic/preparative work will be mainly performed at the FHNW-campus in Muttenz, while the surface analytical work shall be performed at the Nanojunction Laboratory at LMN in Paul Scherrer Institut (PSI). You will prepare and analyze the samples and characterize them using surface physico-chemical methods including contact angle measurements, cyclic voltammetry, Scanning Probe Microscopy and photoelectron spectroscopy (XPS and UPS). Additionally, you might also benefit from the high performance surface analytics and surface structure determination methods available at the Swiss Light Source – the synchrotron facility of PSI.

Your profile

We seek for a highly motivated student who enjoys working in a small team of scientists with different backgrounds. A diploma or master's degree in physics, material's science, chemistry or related field is expected. Experience in one of the above-mentioned methods is highly desirable but could be compensated by an extra effort and a high level of motivation of the candidate.

You will be registered as a PhD student at the University of Basel and the workplace will be the FHNW and the Paul Scherrer Institute in Villigen. The scientific advisors will be Prof. Patrick Shahgaldian and Prof. Thomas Jung.

Please submit your application (including a CV a cover letter) to:

Prof. Thomas Jung, +41 (0)56 310 4518, thomas.jung@psi.ch
Patrick Shahgaldian, +41 (0)61 467 4346, patrick.shahgaldian@fhnw.ch

References

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