Open PhD position for the project entitled: "Accelerated Discovery of Visible Light Active Materials for Hydrogen Evolution"

The Laboratory for Molecular Simulations (LSMO) has an open PhD position (4 years duration; fully funded), for a highly motivated individual with a strong interest in the design, synthesis and solid-state characterisation of new nanoporous materials. These materials will be utilized as photocatalysts to split water into hydrogen and oxygen under visible irradiation, with the hydrogen being captured and used as a fuel. It is envisioned that successful materials would be fabricated into devices.

Aims of the project:

i. to accelerate the synthesis of visible light active nanoporous materials based on photoactive ligands (or conducting chromophores) and/or high valence metal ions utilizing robotic techniques, and

ii. to rapidly and systematically assess their photocatalytic performance, and so an ‘ideal’ material with superior performance towards water splitting, with high solar to hydrogen efficiency can be identified.

For this project, several state-of-the-art instruments such as a robotic platform from Chemspeed Technologies, Single Crystal and Powder X-ray diffractometers, SEM and TEM, gravimetric (IGA), volumetric (BelSorp-minI), and vapor (BelSorp-aqua) analysers, thermogravimetric analyser, IR, UV/vis, fluorescence spectrometers, 400 MHz NMR (liquid and solid state) and others are available for material synthesis and characterisation and are ideally suited for the successful development of the project at an internationally competitive rate.

The project is highly ambitious and would suit only to candidates who are willing to work hard and with strong motivation to generate high impact publications.

Experience: Experience in organic ligand and inorganic materials synthesis and standard solid-state characterisation such as X-ray diffraction, IR and TGA is desirable but not essential.

Starting date: In 2016 - this position will remain open until a suitable candidate is in place.

Where: The research will be carried out in our synthetic LSMO lab at EPFL Valais Wallis in Sion, Switzerland while some of the course work will be carried out on the main EPFL campus in Lausanne.

Requirements: Candidates should have a Master degree in Chemistry, Materials Science, Chemical Engineering, or a related field. Proficiency in written and spoken English is required. Applicants whose first language is not English are encouraged to provide TOEFL, GRE, and/or other comparable test results as a measure of English proficiency.

How to apply: Please send your Curriculum vitae (CV), academic transcripts, a two pages summary of your interests and the names of 2 references to Dr. Kyriakos C. Stylianou via email: kyriakos.stylianou@epfl.ch. These positions require acceptance in the EPFL Doctoral Program of Chemistry and Chemical Engineering, for which the candidates must file an application at http://phd.epfl.ch/edch or send an email to edch@epfl.ch for more information.