PhD Student Position in Theoretical Chemical Surface Physics

Heterogeneous catalysis is of central importance to new techniques based on chemical processes as in fuel cells, solar driven hydrogen production and CO_2 reduction (see the Nobel Prize for Chemistry in 2007). In spite of the enormous importance to our future clean energy production the processes occurring on, *e.g.*, the electrodes of a fuel cell are still poorly understood at an atomistic level. Through approximate solutions to the Schrödinger equation applied to models of a metal surface with reactants and theoretical simulations of various spectroscopies, we aim to, in direct collaboration with synchrotron radiation based experiments performed by the Stanford part of the group, deepen our understanding and develop alternative materials to replace platinum as electrode material.

A PhD student position is available for research in theoretical surface physics/chemistry related to reactions at surfaces particularly in connection with fuel cell reactions and hydrogen storage. The research will focus on development and applications of techniques to quantum mechanically describe adsorption and reactions on mainly metal surfaces, including simulation of inner-shell spectroscopies. The research group combines theory (Stockholm) and experiment (Stanford, Stockholm) and in the PhD study we envisage work periods at both locations. The position is funded through an EU-India collaboration. The successful applicant should thus be prepared to travel to work in close contact with the experimental group at Stanford University (SSRL) as well as theory groups in India.

The funding is 4 years, or 5 years if 20 % departmental duties are included. An appropriate undergraduate degree in physics or chemistry (or equivalent) is required before admission, but does not have to be completed by the application deadline.

The application should be marked Dnr SU 617-2192-08 and specify the position sought (theoretical chemical surface physics) and include: curriculum vitae; a letter of intent describing your motivation for applying and including grades; copy of the undergraduate thesis; names and contact information of two references; other relevant material for our selection process. The application should be received no later than September 28, 2008 at the address:

Stockholms universitet
Registrator/PA
SE-106 91 Stockholm

or registrator@su.se

More information on the research activity can be obtained from Professor Lars G.M. Pettersson tel: 08-5537 8712, e-post: Lars.Pettersson@physto.se or Professor Anders Nilsson, +1 650 926 2233 (-9 hours), e-mail: nilsson@slac.stanford.edu. Webpages: (Stockholm) http://www.physto.se/~xes/ (SSRL): http://www-ssrl.slac.stanford.edu/nilssongroup/index.html. For general information on the graduate study program and formal admission requirements, see www.physto.se/utbildning/forskarutbildning-eng.html , or contact Director of Graduate Studies Kjell Fransson +46-(0)8-5537 8605, e-mail: kjell.fransson@physto.se.