Applications/inquiries should be sent to: APS Search Committee, Dept. of Chemical Engineering, University of California, Santa Barbara, CA 93106-5080

The position will involve working in collaboration with a senior Professor to carry out research on non-equilibrium heterogeneous processes specifically in order to obtain new knowledge on mechanisms of heterogeneously catalyzed chemical reactions involving both, thermal and hyperthermal energy pathways.

The research position (Assistant Project Scientist) at the Department of Chemical Engineering of the University of California, Santa Barbara, is to carry out research projects and be responsible for Federal Grant reporting together with the PI on non-equilibrium heterogeneous processes. The responsibilities include: Formulating goals of research that are of interest for scientific community, industry and funding agencies. Designing and manufacturing of catalytic reactors for wide pressure (Ultra-High Vacuum to atmospheric) and temperature (77K to 1000K) ranges, equipped with optical instrumentation (absorption, luminescence, excitation) in Infra-Red to Vacuum Ultra Violet spectral range. Designing and implementing hardware and software for redundant reactor control for long experimental runs. Designing and implementing hardware and software for automated data acquisition with focus on secure handling large data volume when maintaining the experiment flexibility. Developing methods and conducting analyzing the experimental results as required by the projects goals. Determining scientific and engineering significance of the information obtained and preparing publications. Preparing reports and proposals. Oversees and assists low-level personnel assigned to the project.

The position requires a PhD degree in chemical engineering or related field with at least three years of professional research experience and (one year with industry) with background and detailed knowledge of:

Heterogeneous catalytic reactions involving small molecules
Non-equilibrium processes including energy transfer and dissipation in catalysis
Optical methods of excitation and characterization (UV, visible, IR, photochemistry, photoelectrons, absorption, luminescence)
Numerical computations (kinetics and non-linear dynamics)
Ultra-High Vacuum techniques, methods and design, knowledge of industry standards
High-pressure reactors techniques, methods and design, knowledge of industry standards
Theoretical and practical electronics (circuitry analysis, noise and harmonics analysis, high frequency, pulses and DC measurements)
General laboratory techniques and safety
Automation of chemical experiment (automation of long-run experiments, redundant data acquisition and storage)
Programming: languages (C/C++, VB/VBA, .Net), platforms (object-oriented, COM/ActiveX), relational databases (Oracle, Access, ODBC), major vendors programming systems (Labview, MathTalk), numerical packages (Mathematica, Mathlab, MathCAD)
Major vendors product lines

This position is open until filled. The University of California is an Equal Opportunity/Affirmative Action Employer.