

PhD scholarship in heterogeneous catalysis

Job description

One of the most important challenges of modern heterogeneous catalysis is design of catalysts which simultaneously offer high activity and high selectivity under mild conditions. In this thesis, we plan to develop a novel strategy which will enable to greatly improve the selectivity of several industrially relevant reactions such as hydrogenation, oxidation and amination over metal and acid catalysts. The work will involve intelligent catalyst synthesis and activation, extensive characterization and catalytic tests. The PhD research will be conducted in Catalysis and Solid State Chemistry Laboratory (UCCS, <http://uccs.univ-lille1.fr> in Lille (France) and International Joint Research Lab for Ecoefficient Products and Processes Solvay (E2P2L) (<http://www.e2p2l.com> in Shanghai (China)).

Desired skills and experience

Highly motivated and excellent candidates holding an MSc degree in catalysis, chemical engineering, organic and inorganic chemistry or related subjects are strongly encouraged to apply. Creativity with catalyst synthesis, experience with catalyst characterization, catalytic reactors and GC analysis are highly appreciated. Communication skills (oral, written, presentation). Proficiency in English (speaking and writing publications).

Interested applicants should mail their detailed curriculum vitae, a short statement explaining their interest for this PhD project and names and contact details of three references to vitaly.ordomsky-ext@solvay.com and andrei.khodakov@univ-lille1.fr.

About the employer

International Joint Research Lab for Eco-efficient Products and Processes (E2P2L) is joint research center between Solvay and French National Center for Scientific Research (CNRS) in Shanghai (<http://www.e2p2l.com>). Laboratory is specialized on chemistry related to sustainable development. The projects aim to develop new methods for the environmentally friendly transformation of biomass and/or CO₂ with applications in the field of surfactants or biopolymers. This laboratory is based on fundamental research and modelling approaches while retaining the industrial application at the end of the research.

Catalysis and Solid State Chemistry Laboratory (UCCS – UMR 8181) is an internationally renowned team of academic and CNRS researchers. The UCCS is involved in both fundamental and applied research in the fields of heterogeneous and homogeneous catalysis and solid state chemistry. For several years, the UCCS has been involved in the design of catalysts and catalytic reactors for the production of platform molecules, chemicals and fuels from fossil and renewable resources.