18-months Post-Doctoral Position

« Development of an efficient catalytic process for cycloalkanes oxidation »

A post-doctoral position is vacant at ENS Chimie de Rennes in a collaborative program between the « Organometallics : Materials and Catalysis » Team (UMR 6226) and the Solvay group located in Lyon (Solvay Performance Polyamides)

The transformation of saturated hydrocarbons in oxidation products of interest through Csp^3-H functionalization processes constitutes an industrial challenge again. The research work developed in collaboration with Solvay group relies on the design of efficient catalysts for the selective oxidation of cheap hydrocarbons into alcohols and/or ketones by industrially interesting reagents and ideally under mild conditions (low pressure and/or temperature).

This work, already initiated in the OMC Team, deals with the oxidation of alkanes and particularly cyclohexane *via* activation processes using unusual oxidants. The transformation of cyclohexane into oxidation products represents one of the most important processes for the production of polyamides fibers and plastics (nylon-6 and nylon-6,6), well-controlled by Solvay Performance Polyamides, partner of this collaborative project. Various catalytic materials will be prepared according to the expertise of OMC Team located at ENSCR and evaluated in the targeted reaction. Different activation methodologies (thermal, photochemical,..) could be investigated owing to their potential in oxidation reactions and their relevance in terms of security.

Key-words : Catalysis, Oxidation, (Nano)materials, Sustainable chemistry

Requirements and responsibilities: The prospective candidate should have been awarded a Ph.D. in catalysis, and potentially a post-doctoral training. He (She) should have expertise in organic chemistry and materials, as well as competences in usual analytical techniques. Moreover, the candidate will also be expected to manage two other engineers recruited in collaboration with Solvay. This research work will involve close collaboration with Solvay, as such strong communication, team work and organisation skills will be essential. He (She) will also be expected to coordinate work to meet specified deadline, adapt existing and develop new scientific techniques and experimental protocols.

« Organometallics : Materials and Catalysis » Team – « Nanocatalysis » Group
Ecole Nationale Supérieure de Chimie de Rennes
Duration: 18 months starting october/november 2018
Detailed CV, Supporting statement and referee's letters to be sent to :
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