



Subject Proposal for Erasmus Students in Chemistry

Preparation, characterisation and optimisation of catalysts for the synthesis of Guerbet Alcohols

The subject is proposed within the frame of a large scale European project named “EUROpean multilevel integrated BIOREFinery design for sustainable biomass processing” (“EuroBioRef”).

This project, coordinated by UCCS and including 28 partners (academics, large industries, associations, SMEs...) of 14 different nationalities, is focused on the development of a novel biorefinery concept using diversified feedstocks, technologies and processes that can be bundled to enable and define a new interweaved value chain in integrated flexible biorefining facilities.

One of the work programmes of the “EuroBioRef” project deals with the production of heavier alcohols through the Guerbet chemistry, and of their subsequent conversion to their corresponding alkenes. Currently, using the Guerbet reaction, high conversions are obtained but with low selectivity. In the present project, the acid-base properties of different catalysts, which play a major role in the global reaction, will be finely tuned and optimized to obtain new selective catalysts for this reaction, considering a few target molecules of interest in the global value chain of the biorefinery.

The study will be divided in three parts: (i) the preparation of different catalytic formulations, (ii) their physico-chemical characterization and (iii) the evaluation of their catalytic performances.

The project will start in February- March 2010.

Contacts:

Caroline Pirovano (caroline.pirovano@ensc-lille.fr)

Jean-François Lamonier (jean-francois.lamonier@univ-lille1.fr)

Franck Dumeignil (franck.dumeignil@univ-lille1.fr)

and

Zahia Turpin (zahia.turpin@ensc-lille.fr in cc)