CYCLE DE CONFÉRENCES DE CHIMIE

Avec le concours de : Université Clermont Auvergne
INP Clermont Auvergne

Jeudi 17 octobre à 16 h

Amphi Rémi (site des Cézeaux)

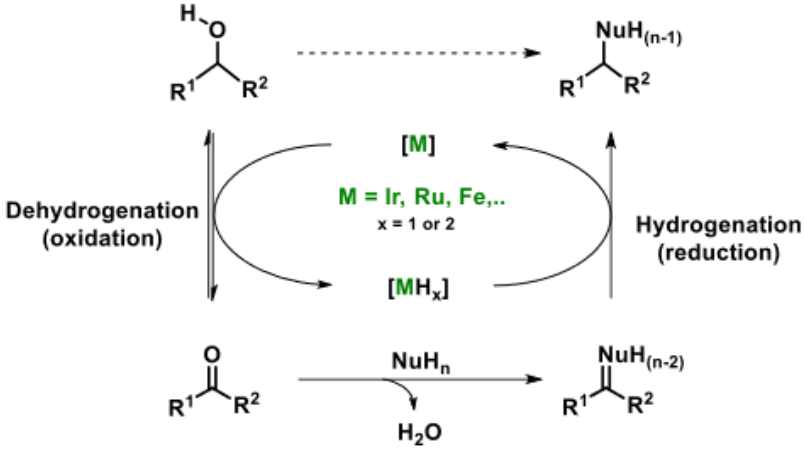
Florence POPOWYCZ

Institut de Chimie et Biochimie Moléculaires et Supramoléculaires, UMR 5246, Institut National des Sciences Appliquées de Lyon, Villeurbanne

Borrowing hydrogen functionalization of biosourced alcohols

In the context of transition from petroleum to biorenewable resources, the valorization of biomass such as starch and cellulose into bio-based chemical is an ongoing concern for the scientific community. Although some of the bio-based chemicals are the same as those produced from petrochemical engineering (ethanol, ethyl acetate, acetic acid, etc.), the major breakthrough is to exploit the nature of the newly bio-based molecules into novel high added value chemicals (pharmaceuticals, agrochemicals, polymers, etc.). Among all bio-based chemicals, sorbitol, industrially produced from depolymerization of starch or cellulose, is a promising platform molecule. Sorbitol can indeed be converted to Sorbitan and Isosorbide [the French company leader in starch industry, Roquette is producing isosorbide Polysorb® at a rate of 20 000 tons per year] respectively by single and double dehydration. Over the last 30 years, conversion of isosorbide along with its stereoisomers (isomannide and isoidide) to high value added molecules has attracted considerable interests both in academia and in industry (asymmetric induction, medicinal and materials chemistry, etc.).

The main objective of this presentation is to develop the direct N- and C-alkylation with isohexides to accede novel chiral compounds. Those one-pot transformations are based on borrowing hydrogen principle (BH) consisting in i) alcohol oxidation ii) in situ reaction with a nucleophile to give imines, alkenes and α-functionalized carbonyl compounds iii) hydrogenation leading to the corresponding amines or compounds containing C-C bonds with water as the sole by-product.



Coordinateurs : Alain DEQUIDT ☎ 33 473 407 194 courriel : alain.dequidt@uca.fr
Kévin LEMOINE ☎ 33 473 407 513 courriel : kevin.lemoine@uca.fr
Institut de Chimie de Clermont-Ferrand (ICCF-UMR 6296)
Université Clermont Auvergne, 24, avenue Blaise Pascal, TSA 80026 63178 AUBIERE cedex-France