



Supervisor : Philippe Jubault, PhD.
Professor, UMR 6014 CNRS- C.O.B.R.A, INSA de Rouen,
IRCOF, 1 rue Tesnière, 76130 Mont Saint Aignan, FRANCE
philippe.jubault@insa-rouen.fr

Title: “Developments of new accesses to chiral cyclopropanes using modern approaches (C-H activation, electrocatalysis) for the design of new bioactive compounds”.

Position: Full Doctorate

Keywords: cyclopropane, biologically active compounds, catalysis, asymmetric synthesis, electrocatalysis, C-H activation.

Collaboration with Pr. André Charette’s team (Department of Chemistry, University of Montréal)

The cyclopropane motif fascinates organic chemists, in fact this intriguing and smallest cycloalkane is present in a phalanx of natural and non-natural bioactive molecules. This important constrained unit has been applied to alter both the metabolic stability and bioavailability of pharmacologically active molecules.

Due to this, there has been interested in developing new approaches to synthesize this key structural motif. Moreover, the enantioselective and more particularly the catalytic enantioselective synthesis have received much attention. Quite surprisingly, C-H activation and electrocatalysis have been less reported in the literature for the synthesis of functionalized cyclopropanes despite the recent implements of these techniques.

As part of our ongoing research program focusing on the development of straightforward access to Fluorinated, trifluoromethyl and difluoromethyl cyclopropanes we envisioned the development of a catalytic asymmetric route to cyclopropanes using C-H activation and electrocatalysis.

This research program will be carried out in collaboration with Professor André B. Charette from the chemistry department of the University of Montréal. During the PhD, a 3 or 6 months’ period would be scheduled in Pr. Charette’s team in Montréal in order to develop the methodology using microfluidic conditions.

To support this important research program, we are looking for an outstanding and highly motivated candidate to pursue his PhD within our group.

Requirement for the position: a Master degree in chemistry

URL: <http://www.lab-cobra.fr/?equipe=synthese-de-bilomolecules-fluorees>

Laboratory: UMR 6014 CNRS- C.O.B.R.A, Université et INSA de Rouen

Ecole Doctorale Normande de Chimie N° 508

Contact: Professor Philippe Jubault (philippe.jubault@insa-rouen.fr)