Supervisor : Philippe Jubault, PhD

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Title: "Kinetic Investigations of Transient Carbocations"

Position: Full Doctorate

Keywords: carbocations ; kinetic study

Subject: Ubiquitous intermediates in many transformations taught from the very first years of organic chemistry, carbocations remain highly studied species, particularly due to their ability to promote spectacular skeletal rearrangements. Beyond the elementary reaction steps of S_N1 and E1, carbocations participate in numerous thermodynamically-controlled rearrangements, such as Pinacol and Wagner-Meerwein rearrangements.

Despite their predominance in many reaction mechanisms, their reactivity has been insufficiently studied from a kinetic perspective. More specifically, existing studies have primarily focused on the addition rates of different nucleophiles to stable and well-defined carbocations, leading to Mayr's valuable electrophilicity scale.

This research program will be dedicated to the reactivity of non-stabilized carbocations, with particular emphasis on the rates of nucleophilic additions to these species relative to their rearrangement rates. Ultimately, this project aims to expand Mayr's database and provide the scientific community with a reliable tool for studying cationic reactions.

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

Requirement for the position: a Master degree in chemistry

URL: https://www.lab-cobra.fr/?equipe=synthese-de-bilomolecules-fluorees
Laboratory: UMR 6064 CNRS – CARMeN Institute, Université et INSA de Rouen
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