

Available PhD position in organic chemistry

A PhD position (36 months) in our research group part of UMR 6014 COBRA – CNRS, Rouen Normandy University is now available.

Project: Organofluorine chemistry has known a tremendous expansion since it has been shown that fluorine atom can alter the physicochemical properties of organic molecules leading to an increase of the metabolic robustness, modulation of cellular membrane permeability having a significant impact on the bioactivity of small molecules. Consequently, a large number of bioactive molecules containing a fluorine moiety have been developed and more than 40% of pharmaceuticals approved by the FDA in 2019 contain at least one fluorine atom, compared to only 2% in the 1970s. Of particular relevance is the emergence of polyfluorinated alkylamines. Indeed, alkylamines are prone to cytochrome P450s oxidation lowering the bioavailability of the related medicines. A common strategy to improve their metabolic stability towards cytochrome P450s is the introduction of an electron-withdrawing group near the nitrogen center. The introduction of a fluorine moiety provides an interesting solution and would result in a decrease of the basicity and electron density of the nitrogen, impacting the physicochemical properties of the alkylamine scaffolds and allowing for potential superior biological performance. In that purpose, the use of innovative redox technologies (photoredox, electrochemistry...) will be used to develop innovative sustainable approaches for the synthesis of fluorinated amino compounds of biological interests. The recruited PhD fellow will be in charge of the experimental work, analyses of the synthesized chemicals, literature survey and writing of scientific reports.

Profile: The ideal candidate will be highly motivated, must hold a master degree in organic chemistry and have a strong background in organic synthesis including analysis (NMR, MS...). Moreover, the candidate should be dedicated, curious, have good communication skills and a good team spirit.

Application: should be sent before 15/05/2023 by e-mail to Prof Philippe Jubault (philippe.jubault@insa-rouen.fr) and Dr. Thomas Castanheiro (thomas.castanheiro-matias@univ-rouen.fr) and include a detailed CV with at least two referees able to be contacted, a cover letter and a short research summary.

Starting date: October 2023

Duration: 36 months

Website: <https://www.lab-cobra.fr/>