Title: Merging Electrosynthesis and Organocatalysis

Position: Full Doctorate

Keywords: Green chemistry, radical chemistry, electrosynthesis, organocatalysis, chiral molecules

Radical chemistry has been neglected for decades due to the difficulty of controlling radical additions and/or couplings. The study of their stability and the development of new catalytic tools has enabled the resurgence of this field. Besides these great achievements, the induction of chirality in presence of radicals remained highly challenging. The progresses in organocatalysis at the beginning of the century allowed great achievements in that sense, as recently recognized with the Nobel Price in Chemistry in 2021.

Electrochemistry has recently emerged as a powerful tool to perform selective and environmentally-friendly radical reactions, thanks to a standardization of the tools. Yet, merging this technique with the formation of chiral molecules remains in its infancy.

This project aims at developing efficient constructions of 3D-molecular building blocks via radical processes by exploiting electricity for the transfer of single electron and organic catalysts for facilitating the reaction and eventually inducing chirality.

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

Requirement for the position: a Master degree in chemistry

Laboratory: UMR 6014 CNRS – C.O.B.R.A., INSA Rouen Normandy
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Link: https://www.lab-cobra.fr/equipes/heterocycles/

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