Laboratoire Cobra
Chimie organique, Bioorganique, Réactivité et Analyse.

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Ph.D. Thesis Offer

Title: "Electrochemical silylation with silane or chlorosilanes"
Position: Full Doctorate (number of position available: 1)
Keyword: Radical Chemistry; Synthetic methodology; Electrochemistry; Reaction Mechanism

The development of new methodologies and reagents is of paramount interest for the rapid expansion of green chemistry. Besides, silicon containing building blocks are very important and very appealing for scientists. Thus, methods to synthesize these molecules are of high interest. Besides, electrochemistry, although known for years is a powerful tool to develop new transformations, impossible so far. Thanks to the newly developed commercially available set-up, which are worldwide supplied, electrochemistry is in its renewal.

We recently developed several reactions for the electrochemical synthesis of silylated molecules most of them using the Suginome reagent. Here we would like to found alternative reagents (ie silane or chlorosilanes) that would avoid the use of this non stable reagent. A peculiar attention will be paid to inexpensive and commercially available silylated reagents.

Taking advantage from our expertise in the field and willing to push beyond the boundaries of knowledge in radical chemistry, we intend to develop new electrochemical transformations to develop more efficient transformations with a better understanding. The formation of silyl radicals through a new electrochemical is sought after. A strong emphasis will be devoted to the fundamental understanding of the reaction mechanisms to decipher the nature of the reactive radical. These fundamental results will be share with the whole community through publications to demonstrate the peculiar properties of this new reaction manifold.

To support this 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.
Laboratory: INSA Rouen Normandie, Institut CARMeN UMR 6064.
URL: http://www.lab-cobra.fr/?equipe=synthese-de-biomolecules-fluorees
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