



Topic : Fluorinated foldamers towards environmental applications

• Details

- Working Place: **CARMen Institute**, UMR 6064, University of Rouen Normandie (France)
- Funding: Région Normandie
- Contract period: **18** months
- Starting date: 02/03/2026
- Net salary $\approx$ 2200-2400 €/month

• Context

In recent years, per- and polyfluoroalkyl substances, known by the acronym PFAS, have been the focus of environmental and human health concerns due to their status as persistent pollutants. Currently, there are few solutions for removing PFAs from contaminated environments, and one of the most recent recommendations from the French Academy of Sciences is as follows: « Effective methods for removing PFAS from contaminated environments must be developed ».

• Project

This project aims to lay the groundwork for the development of environmentally friendly molecules for the extraction of PFAS. The molecules targeted are foldamers, capable of adopting a particular conformation and structure in solution. The best-known examples of natural foldamers are proteins and oligonucleotides. In our case, we aim to develop new original fluorinated foldamers or fluorinated molecular architectures, taking advantage of the potential interaction between fluorinated molecules, to trap PFAS. The project will begin with the synthesis of new fluorinated foldamers, a second part will be dedicated to their structural studies, and finally, these new tools will be used to trap PFAS and design new, more relevant structures for environmental purposes. This project will be in collaboration with Pr. D. Aitken (ICMMO, Paris-Saclay).

• Profile

- PhD in organic chemistry
- Dedicated, motivated, curious, autonomous, organized with a good team spirit
- Strong background in organic synthesis and strong skills in analysis of organic molecules.
- Experience in fluorine chemistry, peptide chemistry, and environmental chemistry would be a plus, but is not required.

• Application

- Detailed CV with a short research summary
- Cover letter
- Contact of at least two referees, able to be contacted to provide recommendations
- All documents should be sent by email to Pr. Samuel Couve-Bonnaire and Dr. Thomas Castanheiro: samuel.couve-bonnaire@insa-rouen.fr / thomas.castanheiro-matias@univ-rouen.fr