



POST-DOCTORAL or RESEARCH ENGINEER position: Chemical Valorisation of Tire Waste by Degradation and Devulcanization of Elastomers. CHTI

Context :

Due to the large generation of used tires, and in respect of the European Directive 1999/31/EC of 26 April 1999 which prohibits the landfill of used tyres, and which obliges tires manufacturers to take care of their life cycle ; the chemical recycling of tire waste, which would offer a sustainable polymer reusing technology, is of major importance. Research on this issue must therefore take into account these environmental and societal issues by following the principles of law of 2015 dealing with the energy transition for a green growth. The proposed recovery solutions must therefore have a low environmental and societal impact but also have to lead to the development of an adapted industrial model. In this context, the CHTI project proposes to recover polymers from tire waste to use the latter for new formulations.

Within the framework of collaborative project with three major companies : SOPREMA, EIFFAGE et ALIAPUR, the CHTI project offers a 18-month post-doctoral researcher position. The research project will be performed in the Polymers team of LCMT laboratory in Caen (<https://www.lcmt.ensicaen.fr/>).

Activities :

The recruited PhD candidate will be in charge of:

- Setting up the degradation and devulcanization reaction conditions.
- Purification of reactivities, polymers and oligomers using regular purification techniques (precipitation, flash chromatography, soxhlet...)
- Analysis and characterization using NMR, IR, SEC, DSC
- Integration of products into industrial applications: Physico-chemical characterization of formulations with stays to be planned in industrial labs
- Writing of reports and publications
- Literature survey related to the project

Context of the work :

This work will take place in the Laboratoire de chimie Moléculaire et Thioorganique (LCMT) which is part of the « Institut Normand de Chimie Moléculaire, Médicinale et Macromoléculaire » (INC3M Federation). With more than 200 researchers, INC3M meets the requirements for a high quality level of research in the fields of organic synthesis, macromolecules, and medicinal chemistry. LCMT is also



a part of two laboratories of excellence : Labex Synorg et Labex EMC³ and of Tremplin Innovation Chimie Carnot (I2C). LCMT is a major player in the field of the molecular and macromolecular chemistry. It participates in national (ANR) and European projects (INTERREG IV, COST). In addition, it has developed various long-term public-private partnerships with chemical industries and research institutions in France and abroad.

Complementary Information:

Place of work: LCMT laboratory

Type of contract: fix-term

Duration: 18 months

Starting date: first quarter 2024

Salary: 2 800 € / month (gross salary)

Profile: PhD in polymer chemistry

Required experience: None

Working time: full-time

Expected skills:

We are looking for an outstanding and highly motivated **PhD in organic chemistry or polymer chemistry** with excellent knowledge in polymer synthesis and polymers characterization (NMR, SEC, IR, DSC...).

In addition, we are expecting:

- Good communication skills to work within a team
- Independence
- good organizational skills
- Good writing and reporting skills

Selection process

The applicant should provide a CV, a cover letter, and the coordinates of 2 scientific managers who can be contacted, to Pr Isabelle Dez (isabelle.dez@ensicaen.fr) by email.



Laboratoire de Chimie Moléculaire et Thio-organique (LCMT)

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