

Postdoc 12 months

Experimental study of reactive distillation for the recovery of biobased acids

Context

The CP2M is offering a 12-month postdoc contract to experimentally study catalytic reactive distillation for the conversion of biobased acids from black liquors from pulp and paper industry.

This recruitment is part of the European collaborative project 'DREAM' (Pathfinder Open project, more information at <http://dream.cnrs.fr>), which brings together six academic laboratories and one industrial actor to work on the chemical transformation of complex matrices. In particular, the project focuses on the recovery of black liquors from the paper industry.

Missions

One of the tasks of the DREAM project is to recover the monomer fraction of industrial black liquors using a reactive distillation process. The person hired will be in charge of the experimental study of the catalytic esterification reaction of biobased acids and the optimization of a continuous reactive distillation process.

Activities

- bibliographic study
- preparation of heterogeneous catalysts
- study of the esterification reaction using model molecules and real mixtures in a batch reactor with kinetic modelling
- design of a continuous process combining catalytic esterification and distillation
- experimental study of reactive distillation and determination of optimum operating conditions
- analysis of reaction products and data processing
- modelling and simulation of the reactive distillation process, in collaboration with NIC research team
- presentation of results, project meetings (short missions in Europe)
- presentations at national and/or international conferences
- writing reports and publications

Knowledge and skills

The person hired will **hold a PhD in chemical engineering** and will have:

- **experience in the experimental study of a gas-liquid contactor (distillation, absorption or other)**
- knowledge of catalytic reaction engineering
- and/or knowledge of heterogeneous catalysis
- and/or knowledge of biomass chemistry
- an interest in acquiring and processing experimental data
- an interest in teamwork in a multidisciplinary and international environment
- a command of written and spoken English
- an ability to comply with the safety rules in force in the working environment.

Work environment

You will be based at the CP2M Laboratory, located at 3, rue Victor Grignard in Villeurbanne, on the La Doua campus in the Greater Lyon area. The CP2M laboratory offers a dynamic and stimulating working environment focused on research into the chemistry of materials, polymers and engineering. Joining the CP2M unit means becoming part of a passionate team dedicated to scientific excellence, discovery and innovation.

The person recruited will be a CNRS employee and will enjoy the following benefits:

- o Partial reimbursement of travel expenses + sustainable mobility package of up to €300/year
- o Financial contribution towards the cost of health insurance
- o Site accessible by public transport + bicycle parking

Constraints and risks

- working in a chemical laboratory with health and safety constraints (wearing PPE, etc.)
- handling chemical products
- national and international travels (short missions)

Application: Send CV with contact details of at least one referee or letter of recommendation, covering letter, to <https://emploi.cnrs.fr> (offer reference UMR5128-LEAVIL-008) **before May 1st, 2025.**

Contacts:

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Duration: 12-month fixed-term contract, starting in June 2025, starting date negotiable.

Salary: from €3021 gross salary per month, depending on experience.