

1-year postdoctoral position “Conversion of plastic waste by catalytic pyrolysis with functionalized structured internals”.

Mission and objectives.

The PEPR PLASTICS project (France 2030 funding) aims to study and implement an innovative approach to converting polymers into valuable molecules by catalytic pyrolysis. In partnership with UMET and LRGP, the postdoc's objectives are to:

- i) develop and optimize methods for functionalizing open-pore foam-type metal internals in order to deposit zeolite or bifunctional acid catalysts,
- ii) evaluate in a semi-continuous reactor the performance of these structured objects in model molecule pyrolysis and in real load (PE),
- iii) improve understanding of reactivity between thermal and catalytic reactions
- iv) study different configurations for bringing catalyst and polymer charge into contact (catalytic pyrolysis of vapors vs. “direct” contact between charge and catalyst) with optimization of the internals (problems of pressure drop, heat transfer, etc.)
- v) contribute to the transfer of technology to a pilot unit at the LRGP (Nancy) operating continuously.

Context.

The mission will mainly take place at the CP2M laboratory and the IRCELYON laboratory located on the Campus la Doua in Villeurbanne (69). These units have internationally recognized expertise in the fields of catalytic processes and the structuring of catalytic objects, while also benefiting from complementary skills in the field of plastics recycling.

Profile required.

With a PhD in Chemistry or Chemical Engineering, we are looking for someone with expertise in catalyst synthesis and catalytic reaction implementation. Experience in pyrolysis (biomass or waste) would be highly complementary, as would notions of catalytic processes. The person recruited will work with a certain degree of autonomy, while interacting regularly with the supervisory team and with local and national partners.

Contract duration and remuneration.

The duration of the postdoc is 12 months, renewable for 3 or 6 months, with remuneration based on experience and the statutory salary scale (approximately 2500 to 2700 euros gross).

Constraints and risks

Work in a chemistry laboratory with health and safety constraints (wearing PPE, etc.) and handling of chemicals; occasional travel for work meetings (Nancy, Paris, Lille).

Application: CV and covering letter citing a reference and/or letter of recommendation.

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