

CIFRE PhD Thesis – Catalysis and Process Elkem Silicones / CP2M (M/F)

ELKEM is one of the world's leading integrated producers of silicones, present on three continents with top positions in high value-added specialty markets, such as release coatings (for packaging and adhesives), textile coating (airbags, technical fabrics), or high-performance elastomers (molding, paramedical, automotive industry).

We collaborate with CP2M (Catalysis, Polymerization, Process and Materials), a laboratory integrated in Université Lyon 1 – La Doua, specialized in the development of new catalytic and polymerization processes.

As part of this collaboration, we are recruiting a PhD student for a period of 3 years.

PhD PROJECT: “Development of a Fixed-Bed Process for silicone synthesis”

Heterogeneous catalysis in a fixed bed offers the advantage of retaining the catalyst within the process, providing the possibility to reuse or regenerate it. The development of this type of process requires considering both kinetic and hydrodynamic aspects related to the characteristics of the bed and the properties of silicones.

To address all these aspects, the thesis will include both an experimental and a modeling approach

- **Laboratory Experiments**

Setting up and conducting laboratory experiments will be a key step in the thesis project. The experiments aim to select the most suitable catalysts for silicone oil synthesis. The activity, composition, and morphology of the catalyst (or its support) will be evaluated from both kinetic and hydrodynamic perspectives.

- **Process Modeling**

Data obtained in the laboratory will be used to model the process behavior and propose a design. Kinetic modeling of polymerization will be combined with the hydrodynamic behavior of the polymer in the fixed bed.

Profile :

- **Training:** Engineer or Master's degree in process / chemical engineering with a particular interest in laboratory work
- **Technical fields:** Catalysis, reaction engineering, kinetic modeling, modeling of transfer phenomena
- **Required skills:** Rigor, autonomy, curiosity, analytical mindset, and ability to make proposals

Statut :

Type of contract: Fixed-term contract (CDD)

Duration: 3 years

Period:

Location: CP2M – La Doua, Villeurbanne (69), ELKEM Sud, Saint Fons (69)

Contact :

Are you interested in this PhD position?

Please send your CV to:

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