

## **NEW Synthesis of 1-alkylglycerol ether - Batch vs continuous flow NEW**

**Type of offer:** Master II Internship for 6 months

**Financing:** Industrial support; **Salary level:** nd

**Host Institution:** Chimie ParisTech, France (100%)

**Place of work:** Paris - France (100%)

**Speciality:** Chemistry - Organic, mineral, industrial chemistry – Engineering sciences

**Start of publication:** 01/02/2024 **Deadline for application:** 31/07/2024

### **Position**

The chemical industry is responsible for producing a wide range of products, encompassing: (i) foundational chemicals, such as polymers, petrochemicals, and essential inorganic substances; (ii) specialized chemicals used in various sectors, including pharmaceuticals, crop protection, paints, inks, dyes, textiles, paper, and engineering; (iii) consumer chemicals, such as detergents, soaps, fragrances, and flavorings, among others. Globally, there is a growing demand for fundamental compounds, fine chemicals, and pharmaceuticals. Both academic and industrial chemists are actively exploring innovative methodologies to synthesize target materials, including fine chemicals and cosmetics, while integrating the principles of green chemistry into practical processes. One promising approach to facilitating novel chemical reactions involves the efficient activation of reagents. Continuous flow systems, in conjunction with other alternative technologies, present considerable advantages for processing when compared to traditional batch chemistry methods.

### **Description of the mission**

Innovative alternative technologies for sustainable and environmentally-friendly chemistry, specifically exploring the synergy of continuous flow systems and green chemistry principles to advance the development of cosmetic products will be investigated.

The primary objectives of this research project in green chemistry will include:

- Conducting a comparative analysis of batch synthesis and continuous flow synthesis methods for cosmetic compounds, particularly focusing on 1-alkylglycerol ethers and high-value molecules ;Active engagement in a comprehensive literature review.
- Investigating the parameters of both batch and continuous devices, and their impact on the outcomes in organic synthesis and catalysis;
- Synthesizing glycerol derivatives and other high-value or industrially relevant molecules;
- Performing thorough physico-chemical analyses on the target molecules produced;Evaluating the performance of the continuous flow device.

This study will contribute to the advancement of sustainable cosmetic chemistry, aiming to improve efficiency and reduce the environmental footprint of the production process.

### **Candidate profile:**

Candidate with a deep profile in a relevant discipline such as chemistry and engineering with a high knowledge of conventional analytical methods

High level written and oral communication skills

### **To respond to this offer:**

Full CV, covering letter of recommendation to be send by e-mail to: [christophe.len@chimieparistech.psl.eu](mailto:christophe.len@chimieparistech.psl.eu)