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Postdoctoral position (12 months) in Polymer Physico-chemistry

## Polymer self-assembly induced by photo-polymerization for 3D printing

Institute of Analytical Sciences and Physico-Chemistry for Environment and Materials (IPREM)

<https://iprem.univ-pau.fr/fr/index.html>

Université de Pau et des Pays de l'Adour (UPPA), Pau, France

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### Project description/Duties:

The project challenge aims at monitoring and controlling polymer self-assembly process occurring during photo-polymerization, with the final objective of orienting this process towards 3D printing. Photo-polymerization processes occur at short time scale implying challenging development of *in situ*, and time-resolved characterization techniques. Those techniques will allow to monitor the polymerization kinetics and the morphology evolution, from the initial solution to the final material under the application conditions.

This project is in the framework of a collaborative project involving a PhD project starting in September 2020. More specifically, the postdoctoral work will be dedicated to the development of time resolved spectroscopy, microscopy and scattering methods, so as the massive data analysis collected (in particular by Small Angle Scattering, SAXS). This approach will be complemented by macromolecular (GPC, NMR, ...), structural (AFM, SAXS, ...) and rheological/mechanical characterization on the final solid materials in order to point out the correlation between properties and morphology.

**Host Lab:** IPREM is a joint Research Unit CNRS/UPPA (UMR 5254) partly located in Pau, France. IPREM has an extensive and highly competitive research program that encompasses fundamental research in physical chemistry, analytical chemistry and microbiology, as related to the molecular structure of the living world, environmental management and the functional properties of different classes of materials, including polymers. The position will be located at IPREM/Pau (Technopole Hélioparc); also, strong interactions and punctual mobility will be expected with Arkema/GRL (Lacq), CANOE/Pau (R&D center) and other project collaborators.

### Requirements:

- To be eligible for the research employment, the candidate must hold a PhD degree in polymer physico-chemistry, polymer physics or polymer chemistry.
- Large part of the applicant PhD and/or previous postdoc project should have been focused on block copolymer self-assembly, polymerization and mechanical properties.
- Experience in microscopy (e.g. AFM, fluorescence microscopy, ...), scattering methods (e.g. SAXS), and rheology would be appreciated.
- The applicant must have good command of spoken and written English.

### **Additional qualifications:**

Importance will also be placed on personal skills such as good communication oral and written skills. We place a particular importance on the ability to work as part of a team in a multi-disciplinary research environment. The applicant will be in charge for a part of a larger project, and the ability to work independently and to take responsibility will be required.

### **Application:**

A person with a PhD obtained no more than four years before the end of the application period is particularly eligible for the position. The application should include (as a single pdf file):

- CV
- Copy of PhD thesis diploma
- A motivation letter describing the applicant's previous research experience and how it is related to the present position (one, or maximum two pages) is also required.
- Contact details of two references

Send the required documents to: Laurent Rubatat ([laurent.rubatat@univ-pau.fr](mailto:laurent.rubatat@univ-pau.fr)), Christophe Derail ([christophe.derail@univ-pau.fr](mailto:christophe.derail@univ-pau.fr)) et Maud Save ([maud.save@univ-pau.fr](mailto:maud.save@univ-pau.fr)).

### **The application will be evaluated based on the following criteria:**

Appropriate education and work/research in related fields. Candidate motivation, knowledge, scientific maturity and curiosity. Emphasis will also be placed on personal skills. Selected candidates will be interviewed.

**Starting date:** November 2020

**Type of position:** Full-time temporary position for 1 year.

**Please submit your application by September the 10<sup>th</sup> 2020**