PhD position (36 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
https://iprem.univ-pau.fr/fr/index.html

Project description/Duties:

The ANR project PIMPS3D proposes to investigate photo-Polymerization Induced Microphase Separation (PIMS), with the final objective of orienting this process towards 3D printing. This is a trans-sectorial collaborative project between IS2M in Mulhouse, Arkema Company, and IPREM in Pau. More specifically, the PhD candidate task will be dedicated to the preparation of the structured polymer materials by photo-polymerization and the use of time resolved spectroscopy and scattering methods. This approach will be complemented by macromolecular, structural (microscopy and scattering methods) and rheological/mechanical characterization. The ultimate task will be the implementation on 3D printers in collaboration with the project partners.

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 company (Lacq), IS2M (Mulhouse) and CANOE/Pau (Technological center).

Requirements:

- To be eligible for the research employment, the candidate must hold a master degree in polymer physico-chemistry, polymer physics or polymer chemistry.
- Experience (during practical or training) in block copolymer self-assembly, polymerization and mechanical properties as well as experience in microscopy (*e.g.* AFM), scattering methods (*e.g.* SAXS), or rheology will be appreciated.
- The applicant should 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 PhD project is a task of a larger collaborative project,

so the ability of the PhD student to work independently and to take responsibility will be required.

Application:

A person with a master or a high school degree is particularly eligible for the position. The application should include (as a single pdf file):

- CV
- Copy of the master diploma with ranking and marks
- 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), Christophe Derail (christophe.derail@univ-pau.fr) et Maud Save (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: September 2020 or as otherwise agreed.

Type of position: Full-time temporary position for 3 years.

Please submit your application by 1th of July 2020