

Post-doctoral position in Biodegradable Polymer - Pau France

The **post-doctoral project** will cover synthesis and in-depth characterization of **biodegradable block copolymers based on polyesters and polysaccharides**. She/he will develop methodology for polymer modification and coupling reactions, which will be validated by suitable analytical techniques. Both architecture and chemical nature of each block will be selected according to the targeted properties. Self-assembly of block copolymer in bulk or as additive in biodegradable matrix will be investigated and probed by microscopy (AFM, MEB) and small angle scattering techniques (SANS, SAXS). Biodegradation, mechanical and bactericidal properties will be studied in collaboration with the other partners of the project.

Context of the project

The interregional collaborative AcroBioplast project involves a multidisciplinary group of researchers from UPV/EHU (POLYMAT, Spain), the University of Pau and Pays de l'Adour (IPREM, Pyrénées-Atlantiques, France), University of Zaragoza (Aragon, Spain) and a start-up company based in Spain. The project aims to promote research and innovation capabilities within the framework of sustainable development of the cross-border region and strengthen cooperation between research centers and companies to accelerate the biodegradation of bioplastics, turning them into value-added products in biomedicine. While excessive sugar consumption is associated with health problems in human nutrition, certain sugar-based compounds such as polysaccharides can indeed enhance bioplastic biodegradability and improve their application in biomedical applications. However, in industry, the incorporation of these natural sugar-based materials in the formulation of bioplastics is yet to be developed.

Host research team

The Physical Chemistry of Surfaces and Polymer Materials (PCM) department at **IPREM** institute (Université de Pau & Pays Adour, CNRS UMR5254, France) integrates multidisciplinary skills in polymer science from chemistry to physico-chemistry and physics. IPREM-PCM develops research focused on three main research fields: Materials for storage and energy conversion, Materials and sustainability, Functional materials. Three researchers and 2 Engineers of IPREM-PCM are involved in the project. Their research focuses on the design of innovative advanced polymer materials while addressing challenges of sustainability.

The **Post-doctoral candidate** should have strong experience in polymer science and proves his/her ability to be involved in polymer chemistry and physico-chemical characterization of polymers with diverse characterization techniques. The candidate must hold a PhD in Polymer Science. The candidate should be able to work independently, collaboratively in a multidisciplinary team environment and a positive attitude towards mobility. Excellent spoken and written English is essential. The candidate should have good communication and leadership skills, be highly motivated, curious and autonomous. The position includes research, write scientific reports and publications and meetings with partners/collaborators.

Location: IPREM (UMR 5254 CNRS University of Pau & Pays Adour UPPA), Pau, France (+short trips to the other locations of the project for meetings and potential experiments)

Duration: 30 months (possible for 18 months + 12 months of reconduction) starting May/June 2024. **Net salary** ~ 2100 €/month (gross salary 2650 €/month).

Application: CV and recommendations letters should be sent to maud.save@univ-pau.fr, laurent.rubatat@univ-pau.fr, susana.fernandes@univ-pau.fr before **13th of April 2024**.