Recruitment 2026

Establishment : INSA ROUEN NORMANDIE	***Localization : Saint Etienne du Rouvray (FR76800)***

Job identification	Nature : MCF Section CNU : 33 Number : *0098*	Department : CFI Research unit : PBS UMR 6270

Job status	× V : vacant	since : 01/10/2024
	□ S : susceptible to be vacant	
	□ C : job creation	

INSA Rouen Normandie is a public scientific, cultural and professional institution (EPSCP) under the authority of the Ministry of Higher Education and Scientific Research. Its missions are : initial and continuing training for engineers, research excellence and the dissemination of scientific culture.

The STPI department is an internal structure within INSA whose mission is the initial and continuing education of generalist engineers at the undergraduate level to supply the specialized departments.

The CFI Department trains engineers in the field of 'Chemistry and Chemical engineering' (master's degree) with three possible specialisations: polymer materials, organic chemistry, and chemical engineering.

The PBS is a joint research unit (UMR 6270) recognized by the Ministry of Higher Education and Research and placed under the supervision of INSA Rouen Normandie, the University of Rouen Normandie and the CNRS. Its scientific objectives are to develop macromolecular chemistry strategies, combined or not with physical, physicochemical and biological approaches, for the development of innovative polymers, the evaluation of their prperties and their integration into various complex or biological systems, and its mission is the creation, dissemination and transfer of knowledge. **The research unit is a Restricted Access Area (ZRR),** and is structured in two research divisions and composed of five teams. The Macromolecular Materials team, is part of the High-Performance Polymers division and based at INSA Rouen Normandie ; Its expertise lies within the development of new controlled functional polymer structures, the development of alternative pathways avoiding toxic products and the use of energy-saving processes, in particular, the photopolymerisation process.

<u>Keywords for publication on GALAXIE (in English):</u>

Macromolecular synthesis, polymer characterization, sustainable chemistry, photopolymerization.

<u>TEACHING PROFILE:</u>

The candidate will join the CFI department at INSA Rouen Normandie and will also be involved in the STPI department. The courses taught will focus on macromolecular chemistry and polymer materials. In particular, the candidate will teach and illustrate classic synthesis and characterization techniques, link the future properties of polymers to their architecture and chemical nature, and, more specifically, develop all aspects linked to the environmental responsibility: from bio-sourcing (by showcasing alternative solutions to petroleum-based chemistry in polymer synthesis) to end-of-life (ageing, (bio)degradation, concepts of reuse and recycling), assessing environmental and societal impacts. For example, innovative courses are expected on macromolecular processes involving light or on the 4Rs (recycling, repairability, reuse, reduction). These teaching activities (lectures, tutorials, practicals, professional projects) will be delivered in the master cycle (CFI) and in the undergraduate cycle (STPI);

Supervision of internships and professional training contracts, as well as involvement in English language teaching in joint Master research programmes, is desired. A strong commitment to innovative teaching methods is also expected, in order to support the department in the development of its Competence-Based Approach. The development of teaching components for a project-based approach, or flipped classrooms are examples. A dynamic teaching and research candidate in the department would be appreciated.

RESEARCH PROFILE :

Research will be conducted at UMR 6270 PBS within the Macromolecular Materials team, which currently consists of seven members and is based at INSA Rouen Normandie on the Madrillet campus in Saint Etienne du Rouvray.

The successful candidate will strengthen the team's expertise and scientific influence in the field of photopolymerization, whose main objective is to extend the use of this energy-efficient process beyond its current limits (transparent and thin materials) by targeting more numerous and less trivial areas of application (foams, composites, etc.). More specifically, it should enable the team to meet the challenges of tomorrow, which are associated with the European Green Deal, the circularity of materials and composite systems based on reversible networks (CAN) that enable both their durability (self-healing) and recyclability. Skills in these areas associated with the use of light will therefore be sought in order to develop topics related to photorepair, photorecycling, photodegradation and photovalorisation, which are currently booming.

The candidate must therefore demonstrate their ability to initiate/develop scientific projects involving radiation reactions for various applications in the fields of high performance, sustainable development and the environment. Knowledge of the physical phenomena governing radiation-matter interactions would be an advantage. The candidate will be required to quickly demonstrate their scientific expertise by leading regional, national (JCJC) and international collaborative projects in this field.

The future EC recruited will also be required to strengthen the internal functioning and cohesion of the team and, more broadly, the laboratory. Human qualities of openness and the ability to work in a multidisciplinary environment will be sought.

Work environment and resources available

• The laboratory has a wide range of conventional experimental techniques for macromolecular synthesis and polymer characterization, as well as equipment and techniques for implementing and monitoring radiation reactions. Access to specific analysis platforms in Normandy will provide additional techniques.

• The Cosmetic Valley Competitiveness Cluster, the PolePharma Pharmaceutical Cluster, the CNRS's FR INC3M Federation of Macromolecular and Medicinal Chemistry, EUR XL-Chem, the Normandy Region, Carnot I2C and the various GDRs (Synth-flux, Dumbio, etc.) and associations (PolyRay, GFP, , etc.) to which the PBS unit belongs constitute a dynamic research environment conducive to numerous initiatives.

Contacts : Dr Samuel Couve-Bonnaire (teaching)

samuel.couve-bonnaire@insa-rouen.fr – 02.32.95.66.18

Pr Fabrice Burel (research)

fabrice.burel@insa-rouen.fr – 02.32.95.66.38