Job Title: Research Scientist (PhD) in Polymer Science

Job Type: Full-time, 3-years, from september 2024

Organization: Institut des Molécules et Matériaux du Mans (IMMM), UMR CNRS 6283 – Le Mans, France

Research topic : Impact of the interfaces on the thermo-mechanical transitions of polymers

Presentation : The importance of polymers thermo-mechanical transitions (i.e. glass transition temperature, crystallization temperatures, phase transitions) lies in their profound impact on the properties and behavior of polymer materials. Tailoring and understanding these transitions allow scientists and engineers to design polymers with specific functionalities, optimizing their performance and durability for diverse applications in industries. Because polymer interactions at interfaces can alter the mobility, structure, and properties of polymer chains, interfaces affect polymer transitions. The focus of this research is to investigate how polymer interfaces (with medium, substrate, particules…) influence the evolution of the thermo-mechanical transitions. The originality of our approach consists in using Atomic Force Microscopy based methods (developped in Le Mans) to probe the interfaces influence.

About Us: IMMM stands as a CNRS research facility equipped with the latest instrumentation, providing an optimal environment for advanced polymer science research. Our team possesses extensive expertise in the preparation and characterization of polymer films, using Atomic Force Microscopy (AFM) as a key tool in our methodologies.[1]

Position Overview: We are actively seeking a skilled and inquisitive master's student specializing in Polymer Science, Chemistry, or Physics, with a solid foundation in Polymer Science. The selected candidate will engage in innovative research concentrating on tasks such as sample preparation (including coatings and films), characterization, and the advancement of experimental techniques. While prior experience with Atomic Force Microscopy is beneficial, it is not mandatory for this position.

Benefits:

- National (Lorient) and intenational (Belgium) collaborative work environment.
- Access to state-of-the-art research facilities and equipment.
- Publications, patents and international scientific conferences

How to Apply: Interested candidates should submit a cover letter, curriculum vitae, and contact information for one professional reference to nicolas.delorme@univ-lemans.fr and olivier.noel@univ-lemans.fr

Application Deadline: June 2024

References : [1]Siniscalco, D. et al. (**2023**) ACS Applied Polymer Materials 5(9) ; Giermanska, J., et al. (**2021**) Polymer 228: 123934 ; Delorme N et al., (**2015**) Eur Phys J E. ;38:56 ; Bal JK et al. (**2015**) ACS Nano. 9(8):8184-93 ; O.Noel, et al. (**2012**) Phys. Rev. Lett. 108, 015503