

## Tenure track position Chimie des matériaux Ecole Polytechnique

The PMC laboratory at the Ecole Polytechnique is seeking for an assistant professor to develop its research activities in biomedical engineering (BME) applications. We are looking for an expert in polymer biomaterials and in the design of artificial nano-platforms based on biosourced polymers (polysaccharides, zwitterionic polymers, hydrogels ...) with a large number of possible applications from bio-diagnostics and immunomodulation (i.e., antimicrobial coating), to therapeutic delivery and regenerative medicine. One possible research focus of the assistant professor may be the synthesis and the study of ultrathin artificial tissue films deposited on controlled substrates allowing detailed film characterizations down to the nanometer scale. Such well-defined geometry offers the possibility for understanding and controlling the interactions between the biological fluid and the artificial platform, one of the crucial issues in medical applications. We will also consider other research focuses proposed by the candidates.

He/she will lead the development of new synergies within the “Electrochemistry and thin films” team and amplify the interactions with the other teams of the PMC laboratory. He/she will benefit from the technical infrastructure of the laboratory and the expertise of the team in surface characterizations and bioengineering surface tools. He/she will be part of Engineering for Health (E4H) which is an interdisciplinary center focusing on biomedical engineering with strong interactions with the medical sector as doctors and hospitals.

He/she would be part of the Chemistry department of the Ecole Polytechnique and should propose a teaching program which can be centered on polymer science which is presently minor in the department tracks.

The environment at PMC is well-suited to pluridisciplinary studies. Within both the departments of chemistry and physics, PMC is a mixed research unit (Ecole polytechnique/CNRS) gathering four teams, two of which in chemistry (“Solid Chemistry” and “Electrochemistry and thin films”) are working on the design of (nano)materials and thin films for optics, energy, biology and BME applications. The PMC environment also provides various skills for designing and synthesizing objects and characterizing them on surfaces, thanks to the local expertise in the synthesis and functionalization of thin films or nano-objects, in the design of bioengineered surfaces, and in the development of surface and operando techniques such as optical microscopy or luminescence imaging.

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