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CALL FOR APPLICATIONS 2025 – FELLOWS

Supervisor	Catherine Debiemme-Chouvy
Supervisor page	https://lise.upmc.fr/en/user/24
Host Institution	Centre National de la Recherche Scientifique (CNRS) https://www.cnrs.fr/en
Research Lab	Laboratoire Interfaces et Systèmes Electrochimiques https://lise.upmc.fr/en
Research Team	Reactivity of functional materials - Electrochemical Devices https://lise.upmc.fr/en/Theme3

Project Title

Electrochemical preparation of MXene from the MAX phase and application to the development of a supercapacitor

Project Description

MXenes are two-dimensional inorganic compounds with high conductivity and large surface area making them, alone or in a composite, ideal candidates for electrode materials of energy storage devices such as supercapacitors. The most common route for obtaining MXenes is to selectively etch the "A" element of MAX phase using a fluoride-containing acidic solution. To avoid the use of this hazardous medium, an electrochemical route leading to the oxidation and solubilization of "A" should be developed.

Keywords

MXene, electrochemistry, supercapacitor

Description of the Host Research Lab

The studies at UMR8235 are performed in the context of physico-chemistry and interfacial reactivity. Various domains are concerned: corrosion and its inhibition, surface treatments, storage and conversion of energy, and, more recently, applications in biology, cultural patrimony protection, and, more generally, natural environments to understand the behaviour of electrochemical interfaces. This explains why the laboratory is positioned at the junction of fundamental research, its primary assignment, and activities with partners of various economic sectors using electrochemical concepts, techniques, and processes.

To submit your application, please send an email with the required documents to
msca-pf@sorbonne-universite.fr