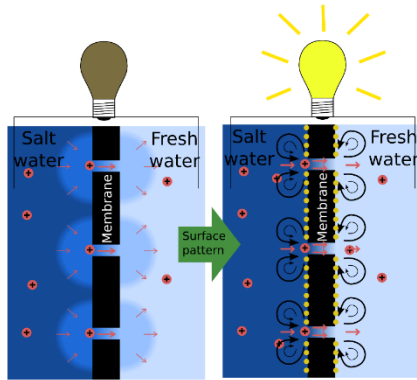


POSTDOCTORAL POSITION: OSMIX: Diffusio-osmotic mixing for blue energy optimization



A Post-doctoral position is available in the team of Matériaux Innovant pour l'Énergie, Institut des Matériaux Poreux de Paris, (ENS-ESPCI-CNRS), under the supervision of Dr. Corentin Tregouet and Dr. Mathilde Lepoitevin. The project is funded by the DIM Materre, IPGG for 12 months. Our project is to **tame Diffuso-Osmosis at chemically patterned interfaces** to perform controlled **passive near-surface mixing** in the concentration-polarization region. This will enable the inhibition of concentration polarization and hence the realization of the **full potential of Blue Energy** technologies.

The mission of the Post-Doc will be to will be first to identify a reproducible way to produce model selective single- and multi-pore membranes (by MOF synthesis). Second, using the chosen membrane configuration, the goal will be to create various patterns to identify which one can lower the resistance (convective transport of ions) and increase the Donnan potential (mixing to maintain a sharp concentration gradient): the parameters will be the size of the patterns and their nature (surface charge or conductivity).

According to the candidate skills or affinities, he/she can contribute to variety of applications, such as electrical control of nanofluidic flows, or electrokinetic power conversion. He/she will combine advanced nanofabrication with nanoelectronics, nanofluidics, surface chemistry, material science.

Applicant for this position will be highly motivated, must hold a PhD in Physics, Chemistry, or Materials science. **Knowledge in MOF synthesis, nanopore characterization, micro/nanofluidics, will be needed**, skills in clean room, 3D printing and MOF will be greatly appreciated.

Applicants are invited to submit an email including cover letter, a summary of previous research, CV with publication list, and 2 or more references letters, to Dr. Mathilde Lepoitevin and Dr. Corentin Tregouet.

Contacts

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