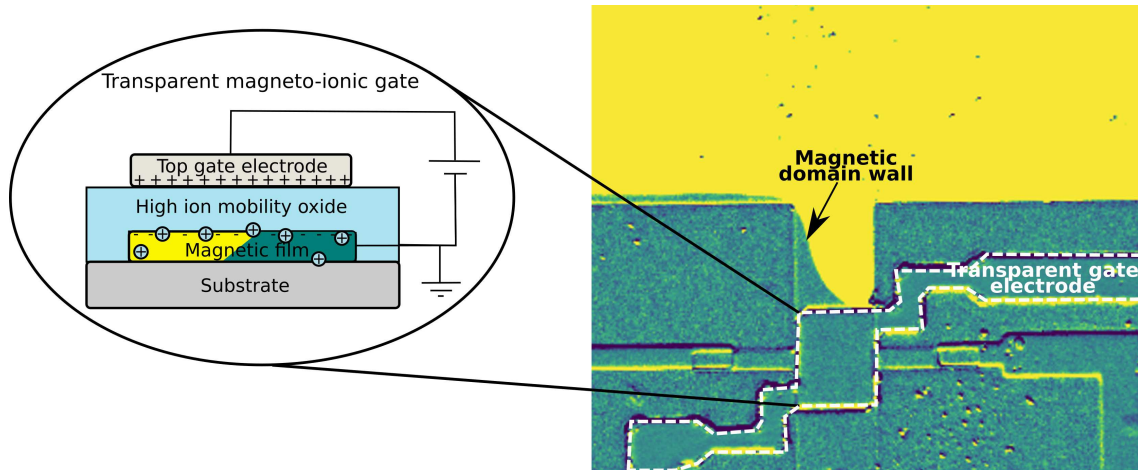


**PostDoc position:**  
**‘Magneto-ionic devices for neuromorphic computing’**

at the Centre for Nanoscience and Nanotechnology (C2N), Palaiseau,  
France



Magneto-ionics is an emerging field that offers great potential for reducing power consumption in spintronics memory applications. By combining the concept of voltage-controlled ionic motion from memristor technologies, typically used in neuromorphic applications, with spintronics, this field also provides a unique opportunity to create a new generation of neuromorphic functionalities based on spintronics devices. Our group has been at the forefront of investigating the magneto-ionic control of magnetic anisotropy, magnetic domain wall motion, and the Dzyaloshinskii Moriya interaction in various materials [1-3]. Through our research, we have demonstrated large, reversible, and non-volatile effects in magnetic properties due to the chemical interaction between the mobile ions and the magnetic atoms. These findings have significant implications for the development of low-power spintronics memory and neuromorphic devices.

We are currently seeking a highly motivated candidate to join our team and work on an experimental research project focused on **designing synaptic functionalities in magneto-ionic gating devices**. The ultimate goal of the project is to integrate magneto-ionic artificial synapses into an artificial neural network hardware demonstrator. The project will greatly benefit from our team’s collective expertise in both magneto-ionics (Liza Herrera Diez) and neuromorphic computing architectures (Damien Querlioz). The successful candidate will join the team INTEGnano ([www.integnano.c2n.u-psud.fr](http://www.integnano.c2n.u-psud.fr))

at the Centre for Nanoscience and Nanotechnology, a leading research institute in the Paris-Saclay area with over 400 researchers, 2800 m<sup>2</sup> of clean room facilities and a long tradition of spintronics research. This project will also benefit from collaborations within a network of spintronics collaborators in Europe, USA and Japan.

Candidates motivated to work on this project are invited to apply for an **18 month post doc position, with possibilities for extension, starting in September 2023**. Candidates should demonstrate expertise in a relevant area of experimental device spintronics and have significant experience in nanofabrication. An excellent level of English is required. Experience in magneto-ionics, magnetic domain wall dynamics and/or neuromorphic spintronics will be a great advantage.

Contact: **Liza Herrera Diez: [liza.herrera-diez@c2n.upsaclay.fr](mailto:liza.herrera-diez@c2n.upsaclay.fr)**

References: [1] L. Herrera Diez et al., Phys. Rev. Applied 12, 034005 (2019). [2] R. Pachat et al., Phys. Rev. Applied 15, 064055 (2021). [3] T. Bhatnagar-Schoeffmann et al., Appl. Phys. Lett. 122, 042402 (2023).