Centre DE Nanosciences & DE Nanotechnologies

C2N General Seminar

Friday November 29th 2019 - 10h 00

Amphitheater of C2N

"Electric field control of magnetism"

Liza Herrera Diez

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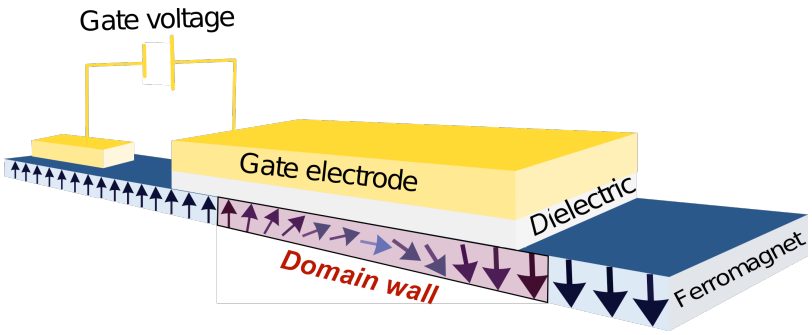

Using electric fields to control the magnetic response of ferromagnetic metallic nanostructures is being intensily investigated not only to unravel the rich physical mechanisms at play but also for its potential for reducing power consumption in spintronic applications.
In this seminar I will give an overview of the different physical mechanisms that can be involved in E-field control of magnetis, such as charge accumulation or ionic displacement, in a variety of materials and device geometries. I will focus on the effects of electric fields on magnetic anisotropy, magnetic domain wall dynamics and, most recently achieved, on the Dzyaloshinskii-Moriya interaction. I will also comment on the relevance of this concept for the developement of practical applications in spintronics.

Liza Herrera Diez has an interdisciplinary background in physics and chemistry. She studied physical chemistry at the National University of Cordoba (Argentina) and conducted her doctoral studies at the Max-Planck Institute for Solid State Research while enrolled in the physics doctoral school at Ecole Polytechnique Federale de Lausanne (2008-2010). During this time she performed studies on magnetic domain wall dynamics and magneto-transport in devices based on diluted ferromagnetic semiconductors. From 2011 to 2012 she worked as a postdoctoral researcher at Institut Neel in Grenoble. During this postdoctoral stay she worked on electric field control of magnetic anisotropy and domain wall dynamics in metallic ferromagnetic devices. Since 2013 she is a CNRS researcher at C2N and her main scientific interests are oriented towards the control of domain wall dynamics in multifunctional nanodevices

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