Departamento de Física de la Materia Condensada

Universidad Zaragoza

SEMINARIOS 2019

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"Ordering phenomena and nanoscale functionalities in oxide films with controlled epitaxy"

The field of functional thin films has transformed in the past decade. This is due to the development of experimental techniques that allow synthesizing materials with atomic control, which eventually leads to atomically-defined interfaces, showing the way to much improved devices and, in some cases, to totally new device concepts. Here I will focus on the challenges related to the synthesis and characterization of ferroic thin films, particularly of oxide thin films, and the ordering phenomena responsible for their large and tunable electrical, mechanical or magnetic responses, which are directly linked to their ferroelectric, ferroelastic or magnetic nature. I will discuss the role of epitaxy on the atomic structure (strain engineering) but also on the microstructure and properties. I will illustrate this with examples of our own work on ferroelectric/piezoelectric PZT and $BaTiO_3$, multiferroic $TbMnO_3$ and $BiFeO_3$ or our most recent work on the newly discovered (by the Namlab team in Dresden) nano-ferroelectric $Hf_{0.5}Zr_{0.5}O_2$. Finally, I will offer my vision about future directions in the field of (multi)ferroic oxides.

Beatriz Noheda is Full Professor at the University of Groningen (The Netherlands) where she chairs the Nanostructures of Functional Oxides group, at the Zernike Institute for Advanced Materials. She got her PhD at the Universidad Autónoma of Madrid and has worked in several renowned international Institutions (for example Brookhaven National Laboratory (New York) or Saarlandes University (Germany)) before settling in 2004 in Groningen.

Prof. Noheda holds important International recognition as she is Fellow of the American Physical Society and the Dutch Science Organization and founding director of the Groningen Cognitive Systems and Materials center (CogniGron). She obtained prestigious awards like the Rosalind Franklin Fellowship and is author of more than 100 publications.

Con la colaboración de:

Facultad de Ciencias
Universidad Zaragoza

20 Febrero (miércoles)

LUGAR: SALA DE GRADOS DE LA FACULTAD DE CIENCIAS

HORA: 12:30