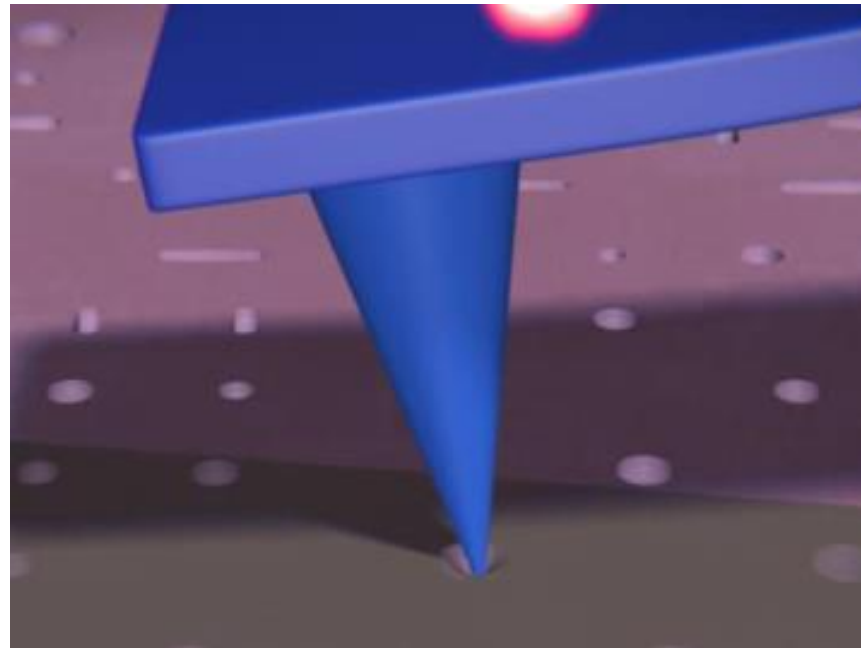
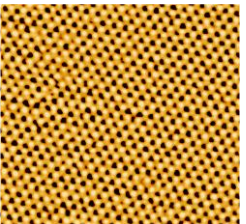
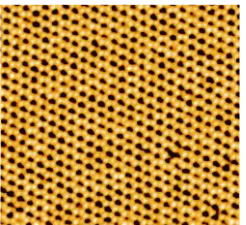
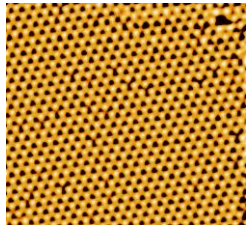


Mechanics of defective 2D materials

CRISTINA GÓMEZ-NAVARRO



Viernes 24 de Noviembre de 2023
12:00 h
PRESENCIAL + ONLINE
(sala de Seminarios
del Departamento C03, 5 planta)
+ MS-TEAMS,
Seminarios del Departamento FMC

Mechanics of defective 2D materials

CRISTINA GÓMEZ-NAVARRO

2D semiconductor materials, specifically Transition Metal Dichalcogenides (TMDCs), are emerging as key players in the development of future flexible electronic devices. Their exceptional mechanical strength and adjustable electronic bandgap make them promising candidates for various applications. However, ensuring the mechanical reliability of these materials is crucial for their successful integration into flexible electronics. This reliability can be limited by factors such as ultimate tensile strength, fracture toughness, and fatigue resistance.

In this talk I will show our work on evaluating the reliability of real life 2D materials, where the presence of atomic defects is inherent. I will present our recent studies on mechanical response of MoS₂ with systematically and controllably created atomic vacancies.

Our findings shed light on strategies to enhance the mechanical reliability of 2D semiconductor materials, paving the way for their effective utilization in future flexible electronics.

-Confined Crack Propagation in MoS₂ Monolayers by Creating Atomic Vacancies

Manzanares-Negro, et al ACS nano 15 (1), 1210-1216, 2021

- Manzanares-Negro, et al submitted

Fatigue Response of MoS₂ with Controlled Introduction of Atomic Vacancies

-Zambudio et al Submitted

High frictional resilience of MoS₂ to induced atomic vacancies