

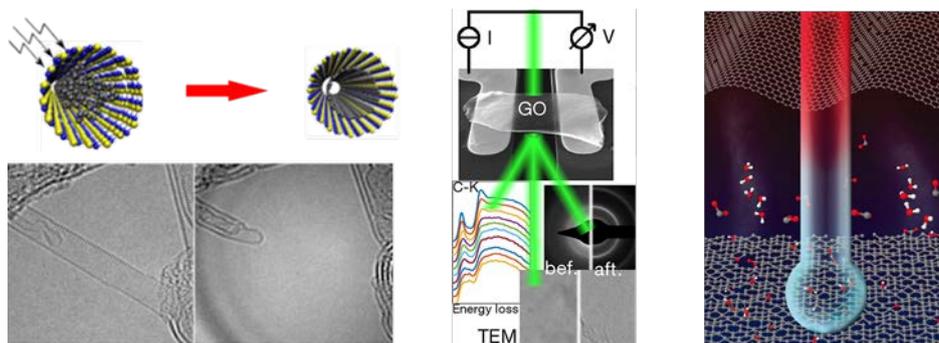
**Project:** *"In situ TEM Studies of Carbon and Related Nanostructures"*

**Location:** Instituto de Nanociencia y Materiales de Aragon (INMA), CSIC-U. de Zaragoza, Zaragoza (Spain)

**Contact:** Raul ARENAL ([arenal@unizar.es](mailto:arenal@unizar.es)) - Nanoscopy on Low Dimensional Materials (<http://raularenal.com>)

Carbon-based and related nanostructures (hexagonal boron nitride, molybdenum disulfide...) are very promising nanomaterials due to their unique mechanical, thermal and electronic properties. Moreover, the prospect of tailoring their properties to meet the requirements of specific applications [1] is opening exciting venues of research. *In-situ* transmission electron microscopy (TEM) is the ideal tool to investigate these materials at the atomic scale under controlled conditions [2-5].

We are seeking for a highly motivated student. The successful candidate will investigate the atomic structure and configuration of different 1D & 2D nanomaterials using a range of instruments such as aberration-corrected TEM (chiefly atomically resolved (S)TEM and EELS), FIB, SEM, Raman and XPS.



The Institute of Nanoscience and Materials of Aragon (INMA), CSIC and U. of Zaragoza, is an interdisciplinary research institute devoted to R+D in Nanoscience, Nanotechnology and the study of Materials. INMA hosts the Laboratory of Advanced Microscopies (LMA), a Spanish National Facility, which represents a unique initiative, both national and internationally to gather the most advanced existing equipment and infrastructures in local probe and electron microscopy. For instance, among other instruments, the LMA possess the following ones: 2 XRD, XPS (2 spectrometers), Auger and Raman spectroscopy, AFM, MFM, STM, 4 TEM (including 2 aberration-corrected TEMs, one monochromated), 3 FIB (including Cryo-FIB), 3 SEM (including 1 environmental one)...

Candidates should hold a MSc in Physics, Chemistry, Materials Science or other related areas. Previous experience in TEM (HR(S)TEM, EELS) and a background in carbon-based nanostructures will be considered, as well as a knowledge in XPS or FIB would be appreciated.

The duration of the position is 36 months, starting **October-December 2022**.

Interested candidates should send a CV, a letter of motivation and the names of 2-3 references to [arenal@unizar.es](mailto:arenal@unizar.es)

Please, send the applications not later than **June 10<sup>th</sup>**.

- [1] R. Arenal, X. Blase, A. Loiseau, Adv. in Phys. 59, 101 (2010). [2] F. Banhart, World Scientific, Singapore (2008).  
 [3] R. Arenal and A. Lopez-Bezanilla, ACS Nano 8, 8419 (2014). [4] M. Pelaez-Fernandez, A. Bermejo, A. Benito, W. Maser, R. Arenal, Carbon 178, 477 (2021). [5] S. Hettler, D. Sebastian, M. Pelaez-Fernandez, A. Benito, W. Maser, R. Arenal, 2D Materials 8, 031001 (2021).

<http://raularenal.com/>