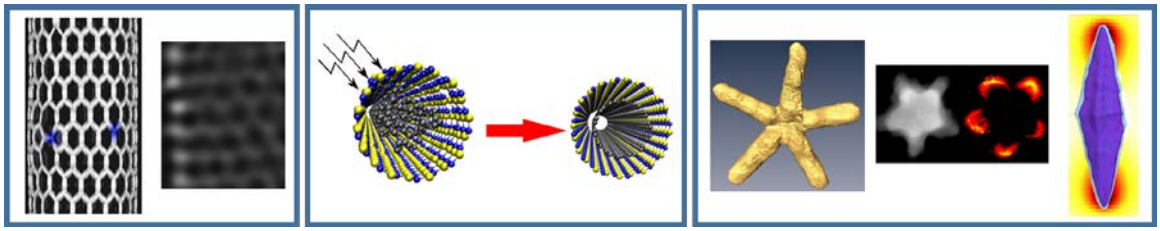
UNSW SYDNEY | Australia's Global University

Electron Microscope Unit

Research Seminar

Atomic structure/configuration and physical properties studies of hybrid nanostructures by STEM-EELS

Speaker: Raul Arenal (Laboratorio Microscopias Avanzadas, INA, U. Zaragoza, Spain)
Location: 320A Seminar Room, Chemical Sciences Building, UNSW
Time & Date: 1 pm, Friday 7th September 2018



In the last two decades, transmission electron microscopes (TEM) have undergone a large number of improvements allowing ~ 100 meV (even few tens of meV) energy resolutions for a sub-nanometer electron beam. These performances offer new possibilities for probing the optical, dielectric and electronic properties of nanomaterials with unprecedented spatial information, as well as for studying the atomic configuration of nanostructures. I will present a selection of recent works taking advantage of these new capabilities [1-14]. These works will concern the study of the atomic structure & configuration of nanostructures (including doped carbon nanotubes and bio-nanomaterials), as well as opto-electronic properties studies carried out via electron energy loss spectroscopy (EELS) measurements of different kind of nano-objects (inorganic nanotubes and metallic nanoparticles). These works will illustrate the study of properties with extreme spatial resolution enabled by a Cs probe corrected STEM combined with the use of a monochromator.

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