

IMAGING DEFECTS IN CARBON NANOTUBES WITH AN STM

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Scanning tunnelling microscopy (STM) and scanning tunnelling spectroscopy (STS) are powerful techniques for investigating the electronic topographic properties of nanomaterials. Whereas the already large amount of experimental STM data obtained so far on perfect nanotubes is perfectly understood, the identification of topological and non-topological modifications of the hexagonal lattice of a carbon nanotube remains an experimental challenge. Thanks to a simple, though accurate theoretical approach, it is possible to simulate the topographic and spectroscopic signatures of many types of defects in graphene and single-walled nanotubes, and to contribute thereby to their identification from STM and STS observations. Several illustrations will be provided during the talk.