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Defects in Inorganic Hybrid Nanostructures

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Abstract – This work is related to the observation of hybrids nanostructures defects based of V_2O_5, and SiP_2O_7 structures, nonetheless the key issue with carbon nanotubes defects comparison take relevance in a effort to detect, know and clasify it. As well it will cover the relation among defects with the nanometrology field.

The suitability of nanotubes for future large-scale applications depends on developing successful strategies to control the defects needed for specific applications, while limiting their negative influence on carbon nanotube properties. The presence of defects brings benefits, including the introduction of anchor points for chemical functionalization, charge injection, and symmetry-breaking effects, thus faciliting spectroscopic characterization.

Challenging opportunities are being pursued in the detailed characterization of specific defects in carbon nanotubes. The utilization of these specific interactions to better control nanotube properties is expected to have a major impact on the future applications of this nanostructures.

The defects area is quite new area in the carbon nanotubes field; however what happened with the inorganic or non-carbonaceous nanotubes? Although the overlooked material by numerous scientists shows that inorganic nanotubes defects still offers an opportunity, and challenge to understand their physical-chemical properties, as well some phenomenon as the coalescence, synterization process on 3D vanadium oxide NanoUrchin, and the zipping mechanism in non-carbonaceous nanotubes.

This presentation will show using Raman spectroscopy (RS), thermogravimetric analysis (TGA), electron microscopy the (i) identification; the defects in non-carbonaceous nanostructures based of V_2O_5, and SiP_2O_7 (ii) relations among defects and the new born nanometrology field in the hybrid, and non-carbonaceous nanostructures.

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