Abstract Submitted
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Insights into the Structure of MoS_2 Nanotubes as revealed by aberration corrected STEM LEONARD DEEPAK FRANCIS, (1) Department of Physics and Astronomy, University of Texas at San Antonio (2) International Iberian Nanotechnology Laboratory, Braga, Portugal — Transition metal chalcogenides like MoS_2 or WS_2 are quasi-two dimensional (2D) compounds. Similar to carbon, transitional metal chalcogenides also form close caged structures known as inorganic fullerenes (IF) and nanotubes (INTs). We have sought to use probe aberration corrected electron microscopy for elucidating some important features and aspects of MoS_2 nanotubes. Thus we have synthesized MoS_2 nanotubes, and during the course the analysis we have observed some important features, namely, unusual facetted caps and curvatures in these nanotubes. Aberration-corrected scanning transmission electron microscopy (STEM) along with simulated STEM images has been carried out to understand better the structure of the nanotubes. Further details involving the nature of the nanotubes, as well as the structure and bonding of the Mo-S in the nanotubes have been investigated, and our results have revealed various interesting aspects for the first time to our knowledge.

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