

12th Nanotechnology Products and Summit

November 24-25, 2016 Melbourne, Australia

Functionalization of tungsten disulfide nanotubes with a conformal humin-like shell

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W S₂ and other transition metals dichalcogenides (TMD) nanostructures have superior tribological and mechanical properties. The interest of using them as additives to polymeric matrices is constantly rising. The challenge in successfully incorporating TMD nanostructures in polymeric matrices is that these nanostructures are fairly chemically inert. To date, the functionalization of TMD nanostructures has been less studied than the functionalization of their carbon equivalents. Within this field of research, the functionalization of TMD nanostructures with organic moieties is the least addressed. We present a new, simple method for the functionalization of WS₂ NTs with conformal humin-like coatings of different thicknesses. We believe that the present study should expand the range of functionalization options for TMD nanostructures with organic moieties, and could lead to a more beneficial use of these nanostructures' superior mechanical and other properties in existing and new applications.

Biography

Hagit Sade has received her MSc in 2006 from Bar-Ilan University. Her work experience includes, among others, a QC Chemist position in the Analytical Laboratory of Fischer Pharmaceuticals, and an R&D Chemist position in Virdia, Ltd. She is currently working on her PhD degree under the supervision of Prof. Jean-Paul (Moshe) Lellouche in Bar-Ilan University.

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