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Title:

Inorganic nanotubes: From WS_2 to "misfit" compounds: from basic science to applications

Update on the synthesis and characterization of new inorganic nanotubes from 2D compounds, like $W(S,Se)_2$ will be given. An "artificial recording eye" combining vision, storage and writing power has been established by a 4x4 array of WS_2 nanotubes. Recent progress in mechanically reinforcing different polymers, relevant to medical technologies and 3D printing will be briefly discussed.

Different nanotubes from quaternary "misfit" layered compounds (MLC) have been realized in recent years. In one recent case, the strong chemical affinity of the rare earth atoms towards sulfur atoms and that of selenium towards the tantalum atoms, led to the synthesis of highly asymmetric nanotubes. Such nanotubes offer unique behavior, like 1D superconductivity, which is suitable for quantum technologies.