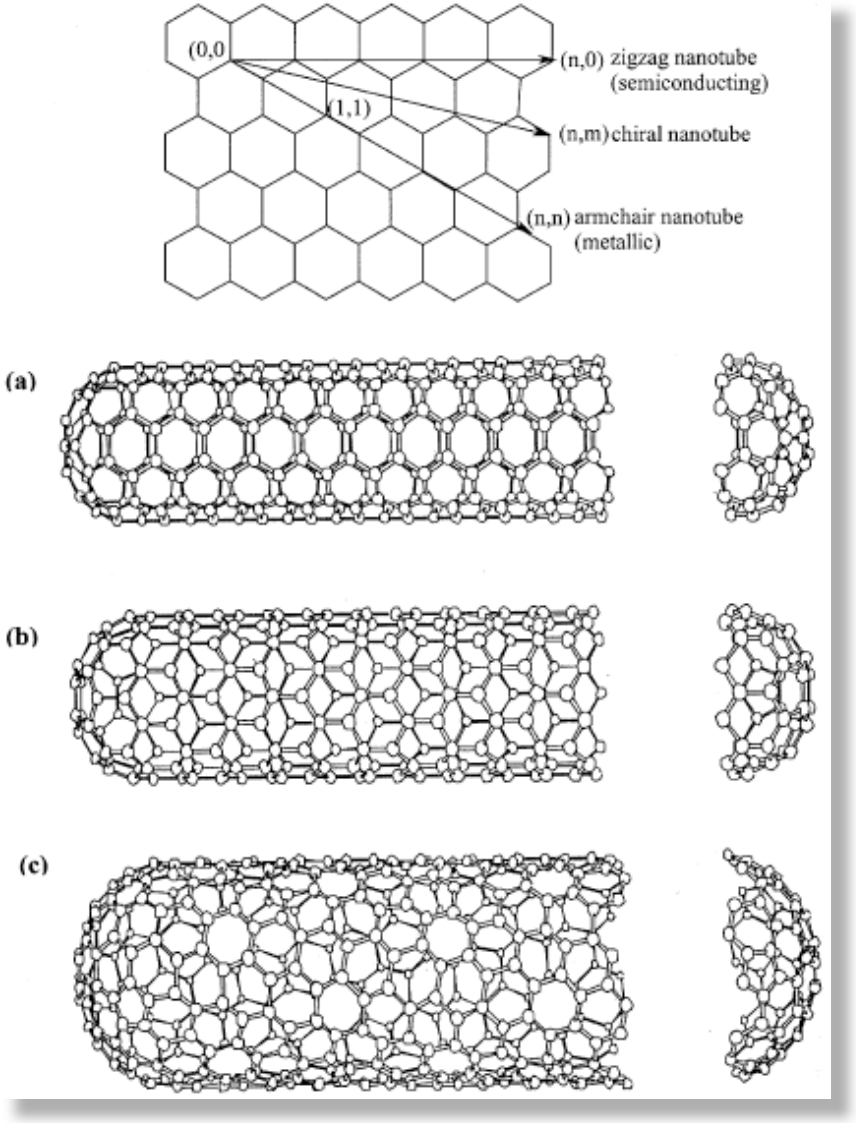
Inorganic nanotubes C. N. R. Rao and M. Nath, *J. Chem. Soc. Dalton Trans.* (2003) 1-24.



Carbon nanotubes are formed by taking a layered material (such as graphene layer) and curling it up, preferably in such a way that there are no dangling bonds. In carbon nanotubes, the dangling bonds are gotten rid of by stitching together the sheets along a seam, and capping the ends with half-fullerenes.

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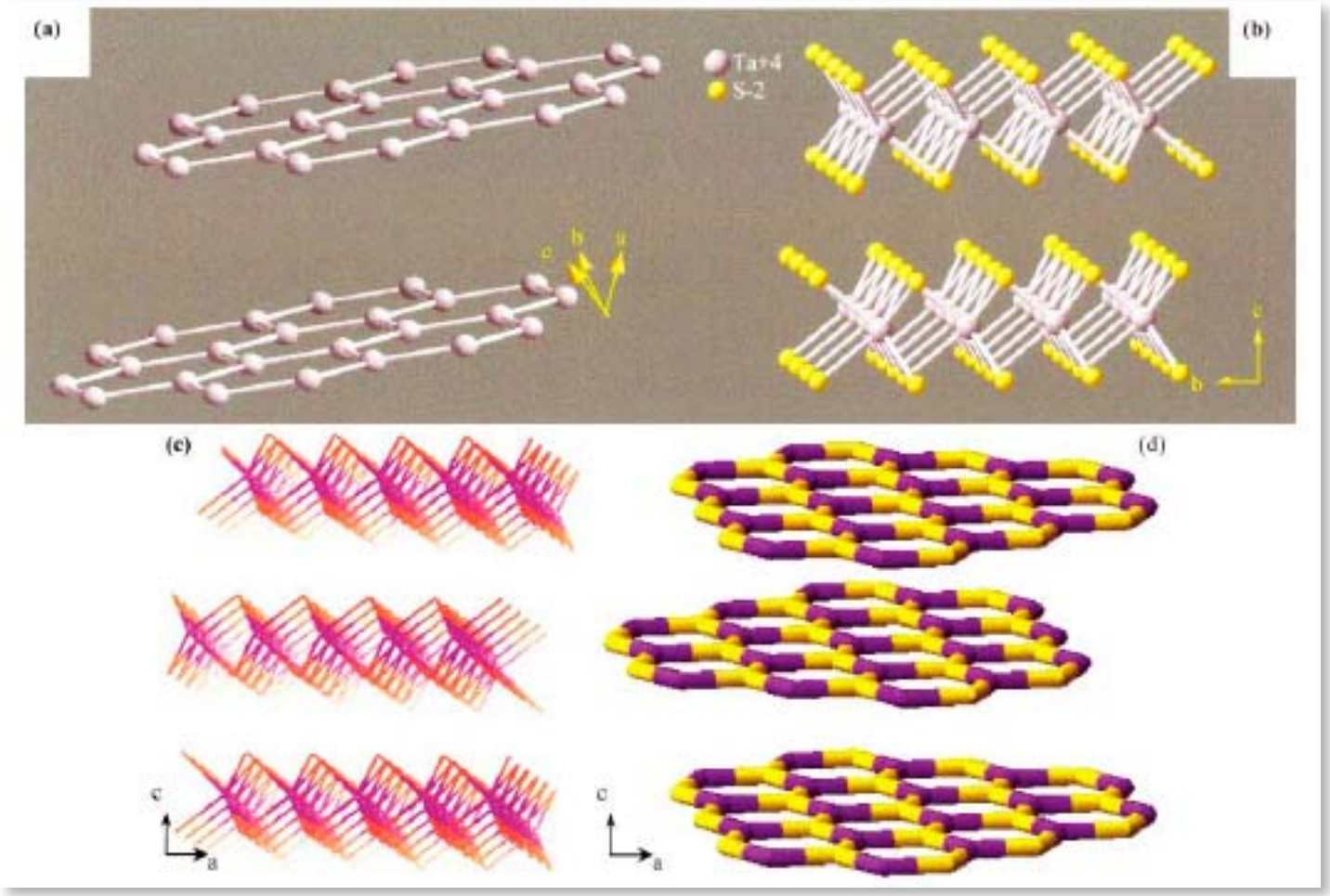

Inorganic compounds with neutral layers exist as well such as (b) TaS_2, (c) MoS_2, and (d) hexagonal BN

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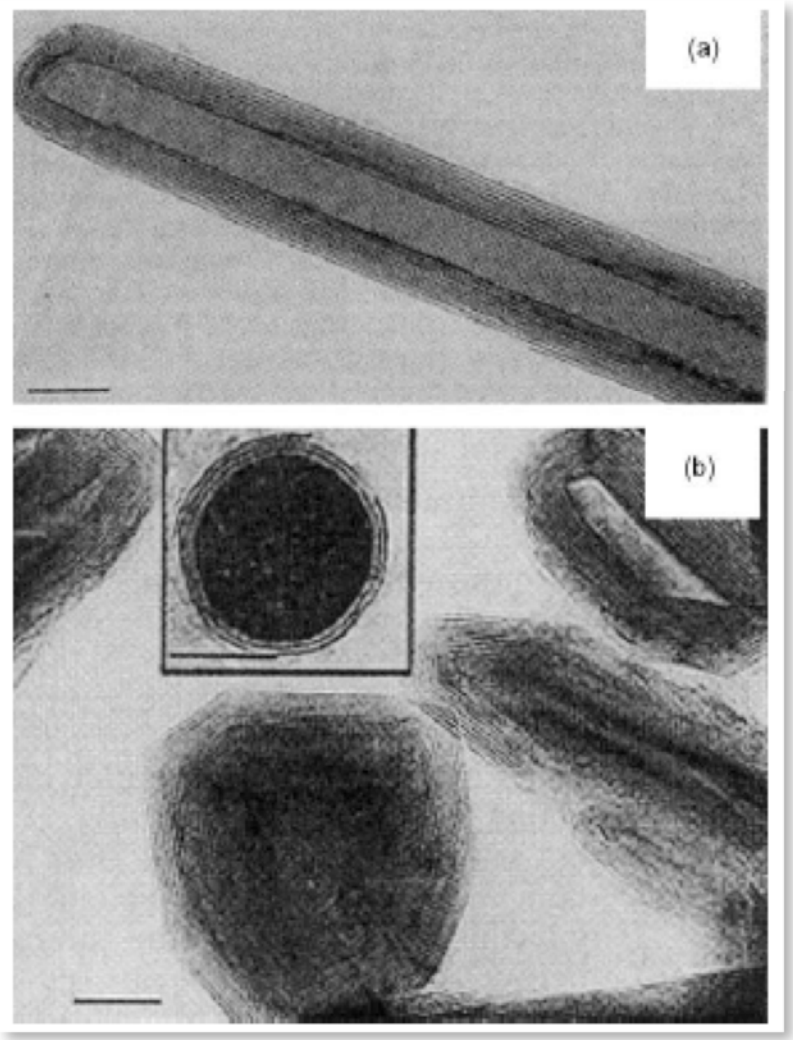
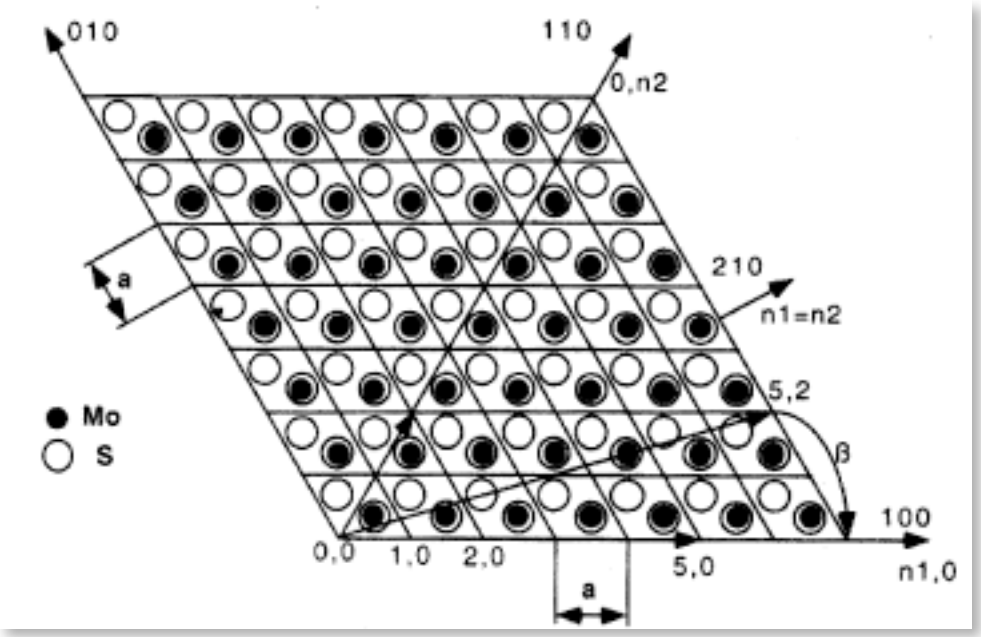


In 1992, Reshef Tenne (Weizmann Institute) reported that WS_2 and MoS_2 can also form nanotube-like structures.



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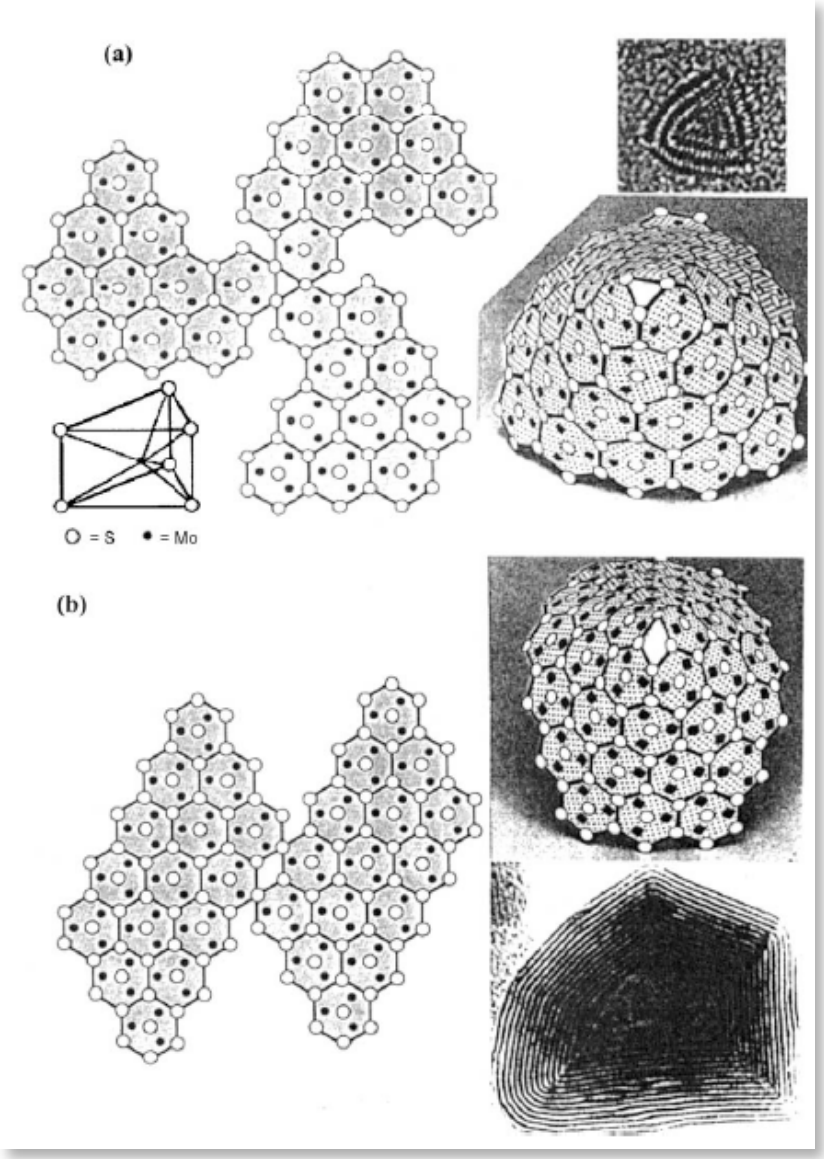
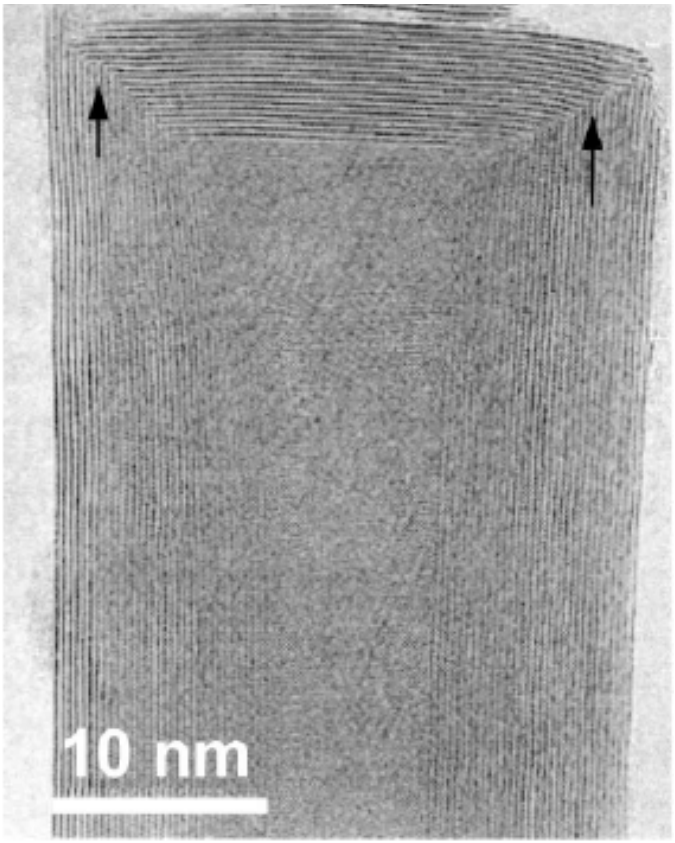
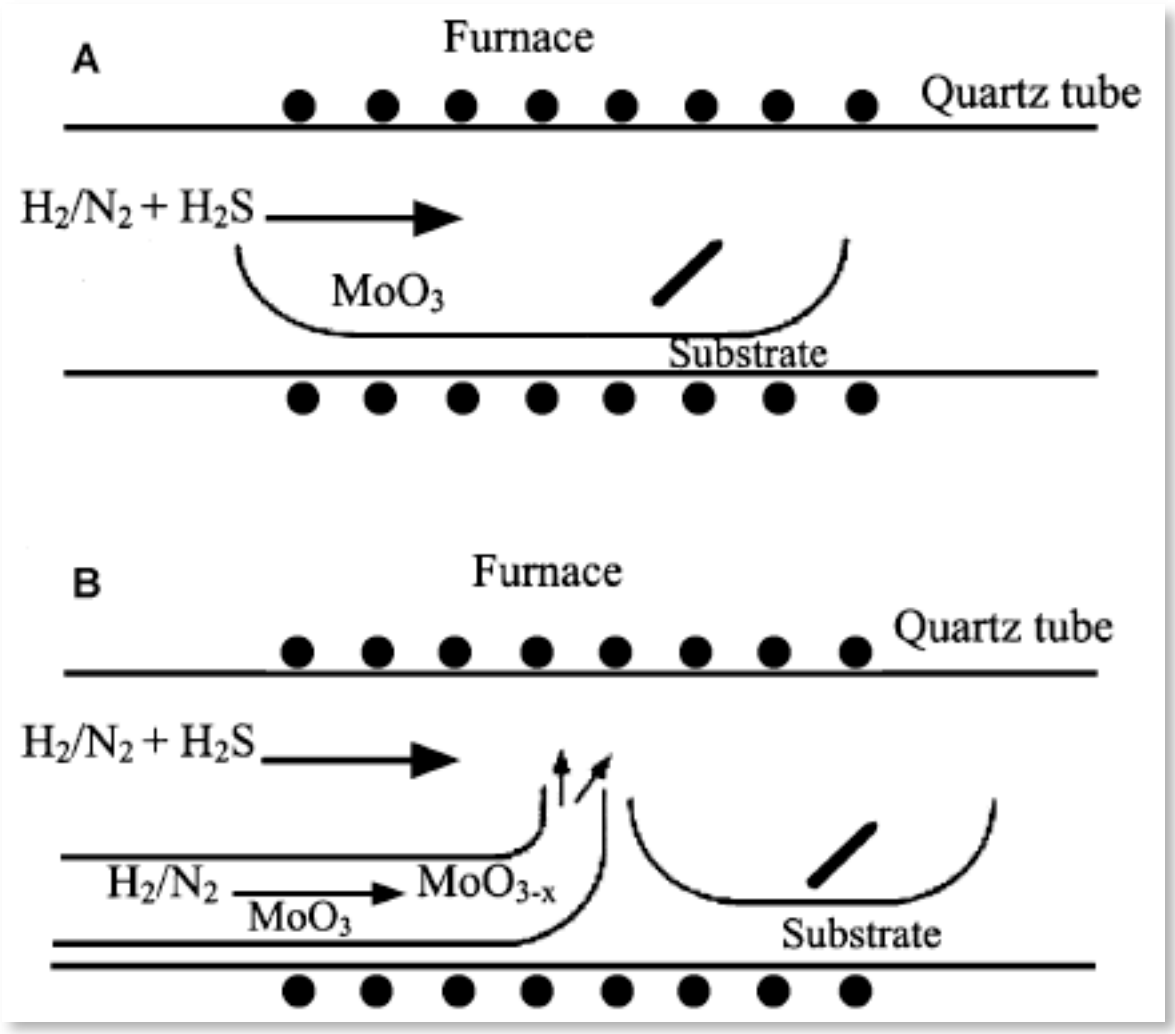


Triangular defects (like disclinations) are required to add curvature to the network of MoS_6 prisms.





Preparation by hydrogen reduction of MoO_3 and sulfidization.

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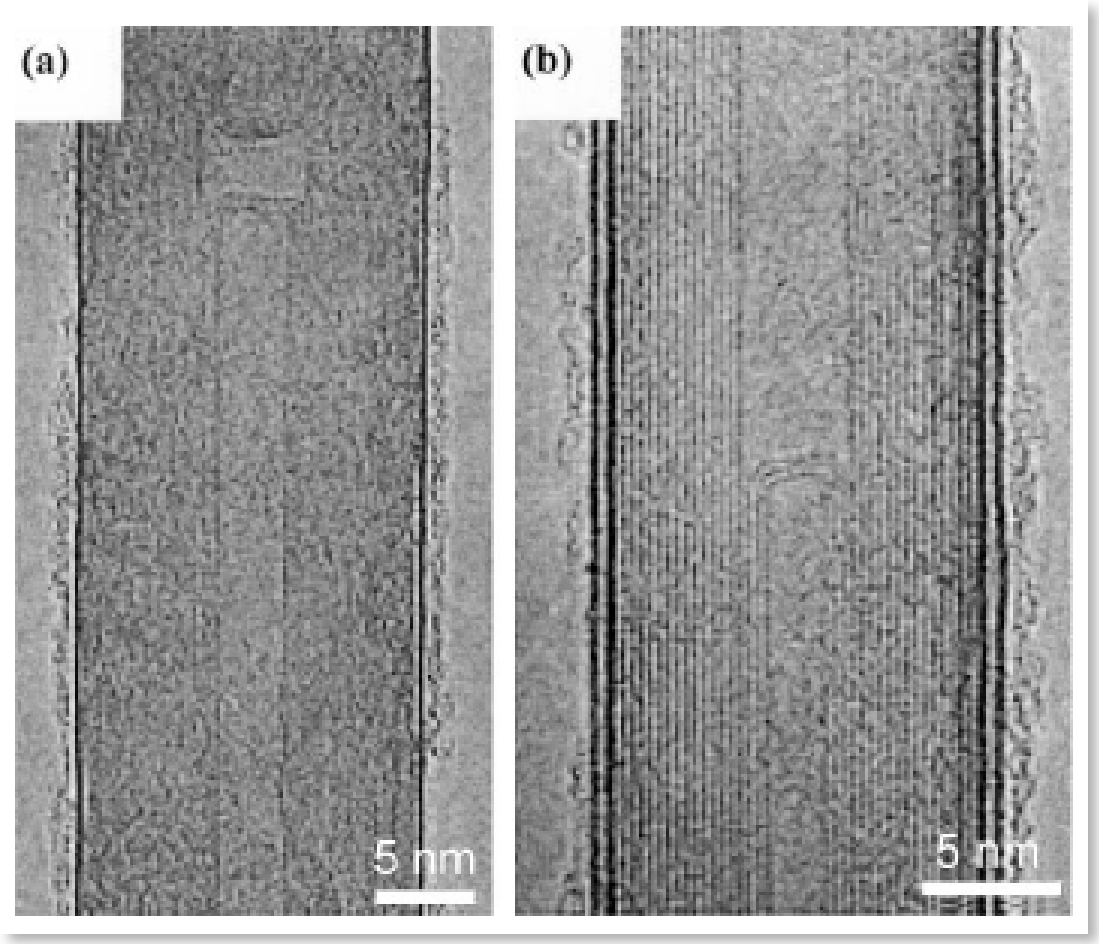
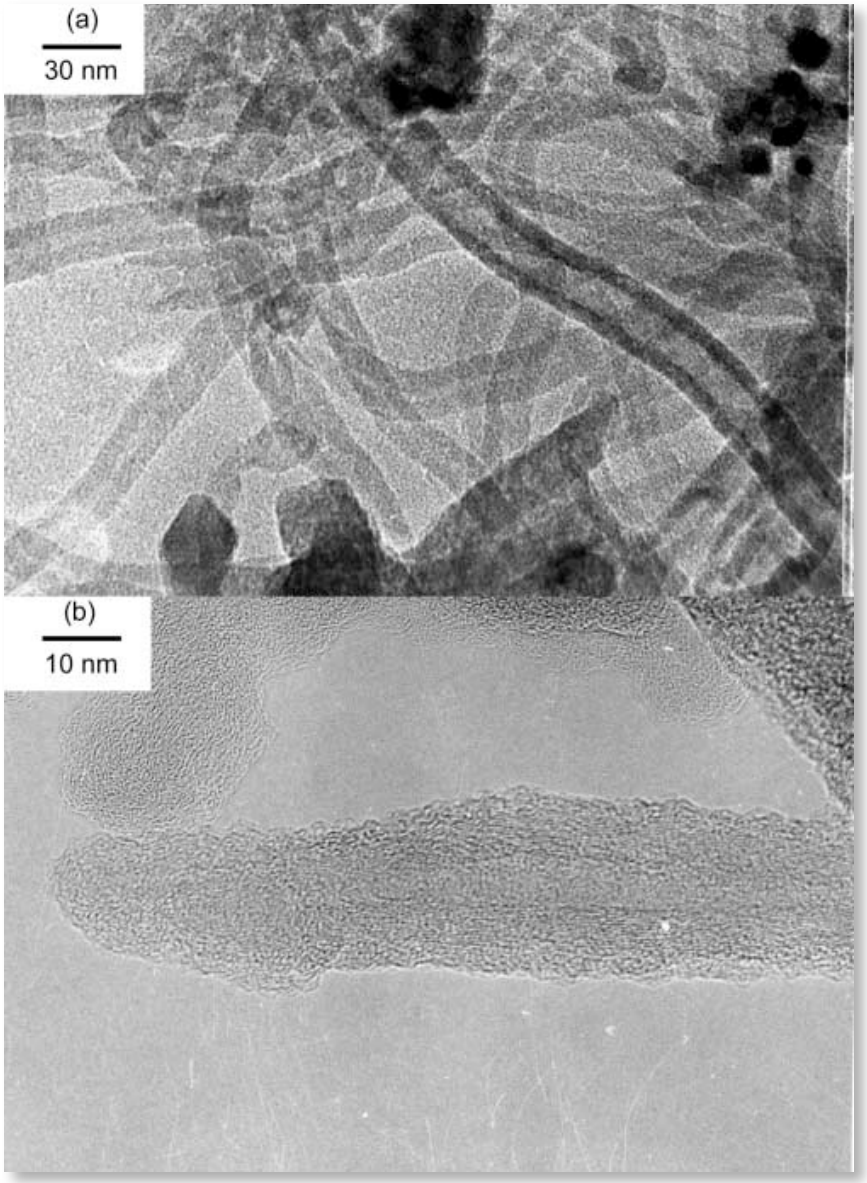


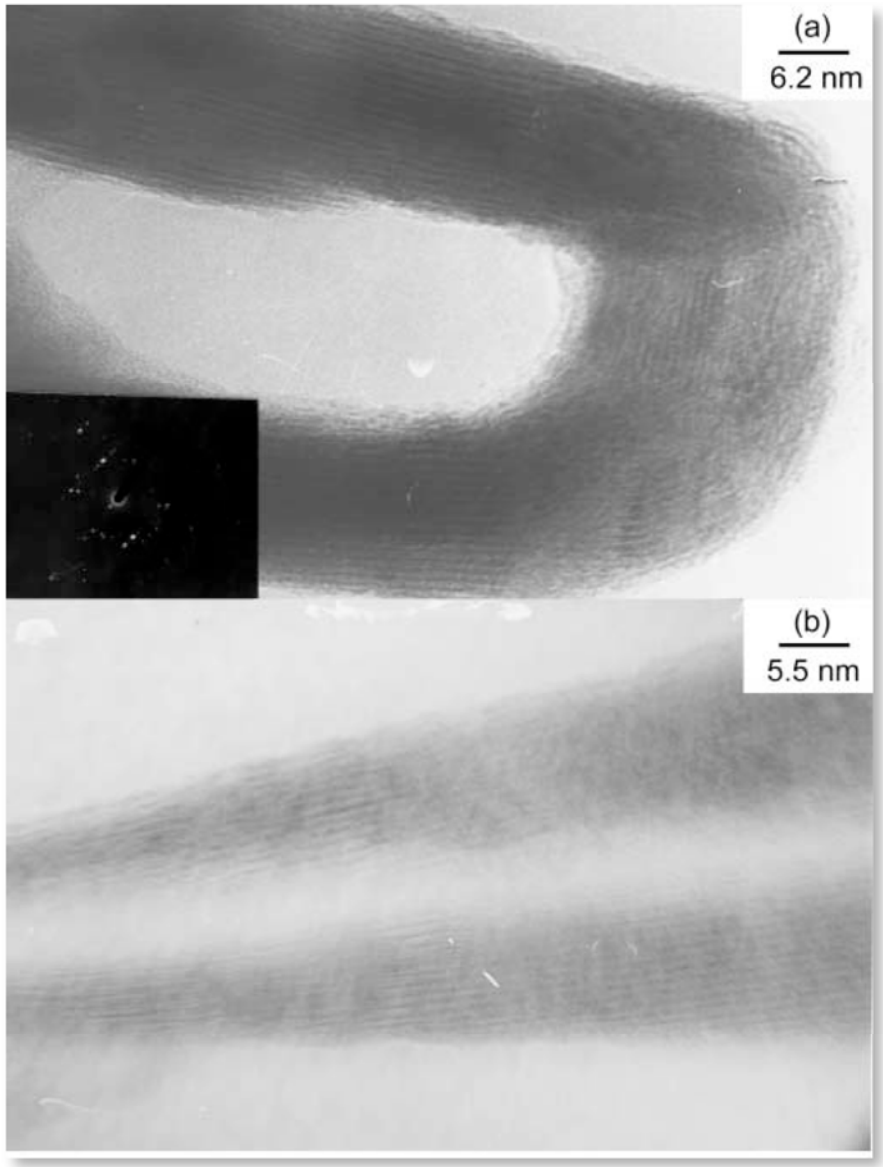
Carbon nanotubes can be used as templates to overgrow MoS_2 or WS_2 nanotubes. The images show (a) 1 layer of WS_2 and (b) 2 layers of WS_2

Inorganic nanotubes C. N. R. Rao and M. Nath, *J. Chem. Soc. Dalton Trans.* (2003) 1-24.

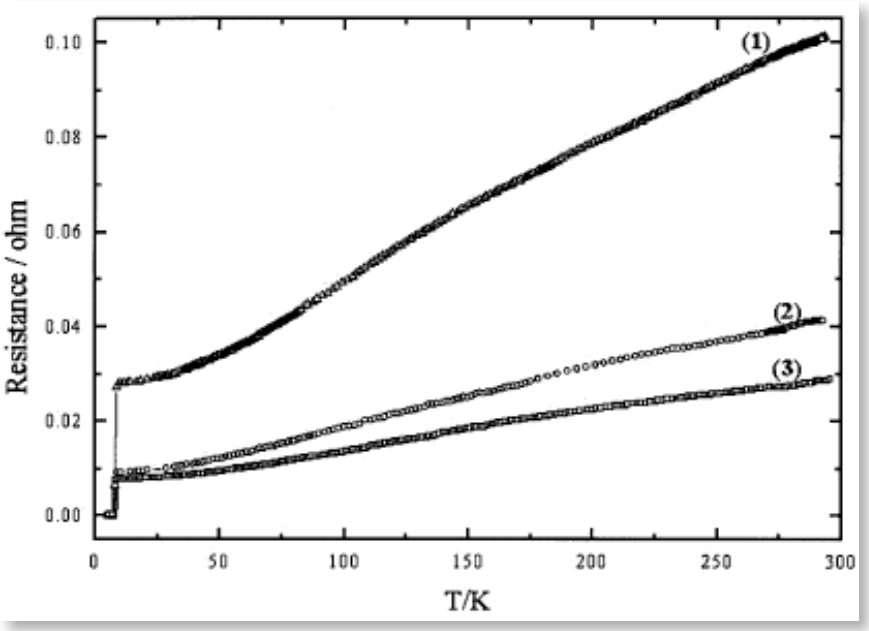


Nanotubes of MoS_2 can also be prepared by decomposing Mo and S-containing precursors, here MoS_3.

Inorganic nanotubes C. N. R. Rao and M. Nath, *J. Chem. Soc. Dalton Trans.* (2003) 1-24.



$NbSe_2$ nanotubes prepared by the decomposition of $NbSe_3$. The nanotubes are superconducting like bulk $NbSe_2$.



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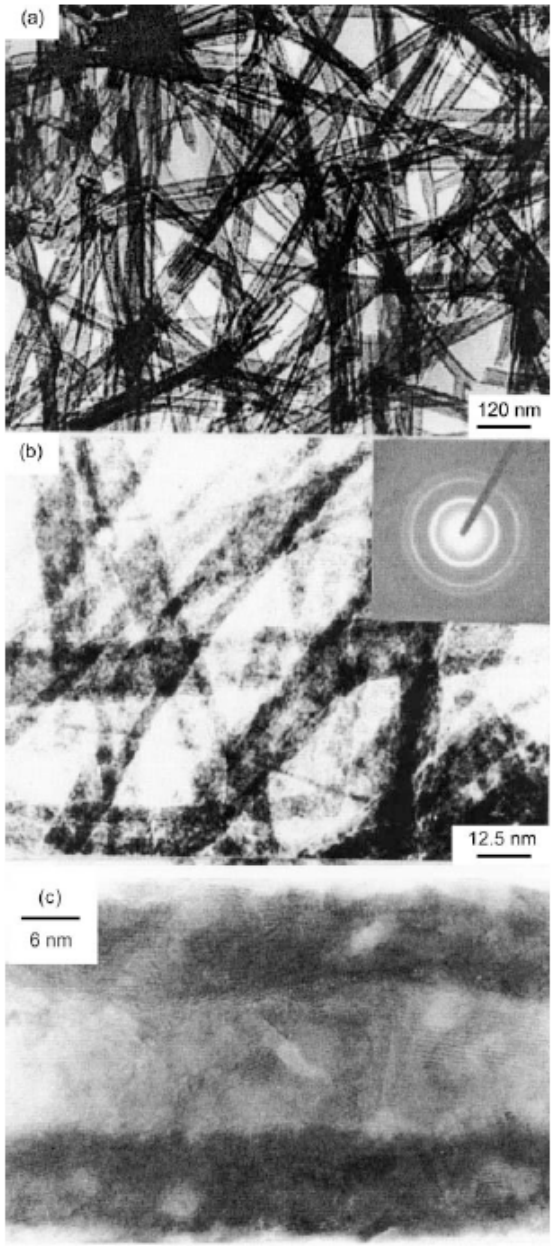
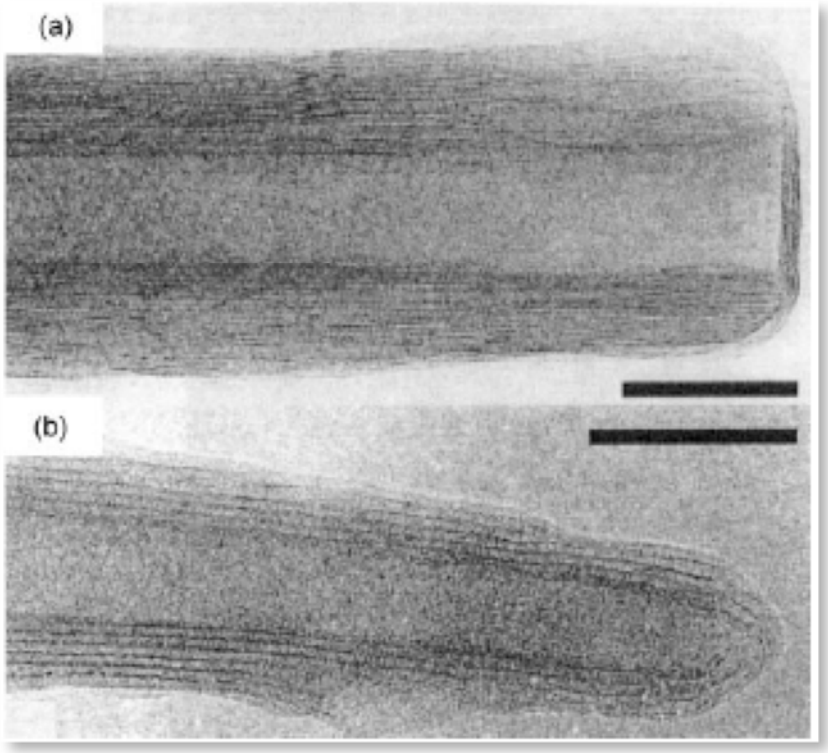
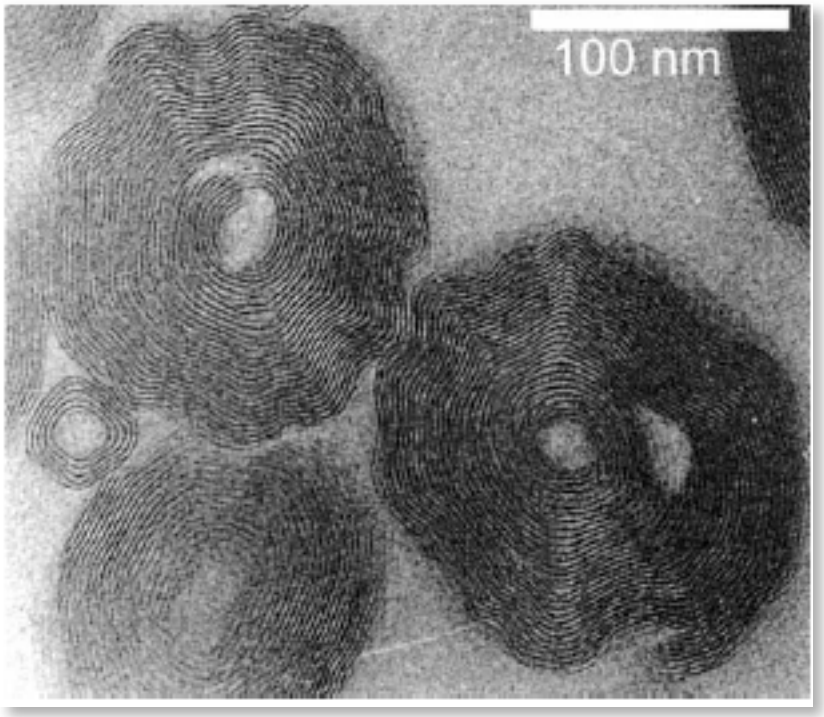


CdSe nanotubes made using a surfactant. The walls are polycrystalline CdSe.

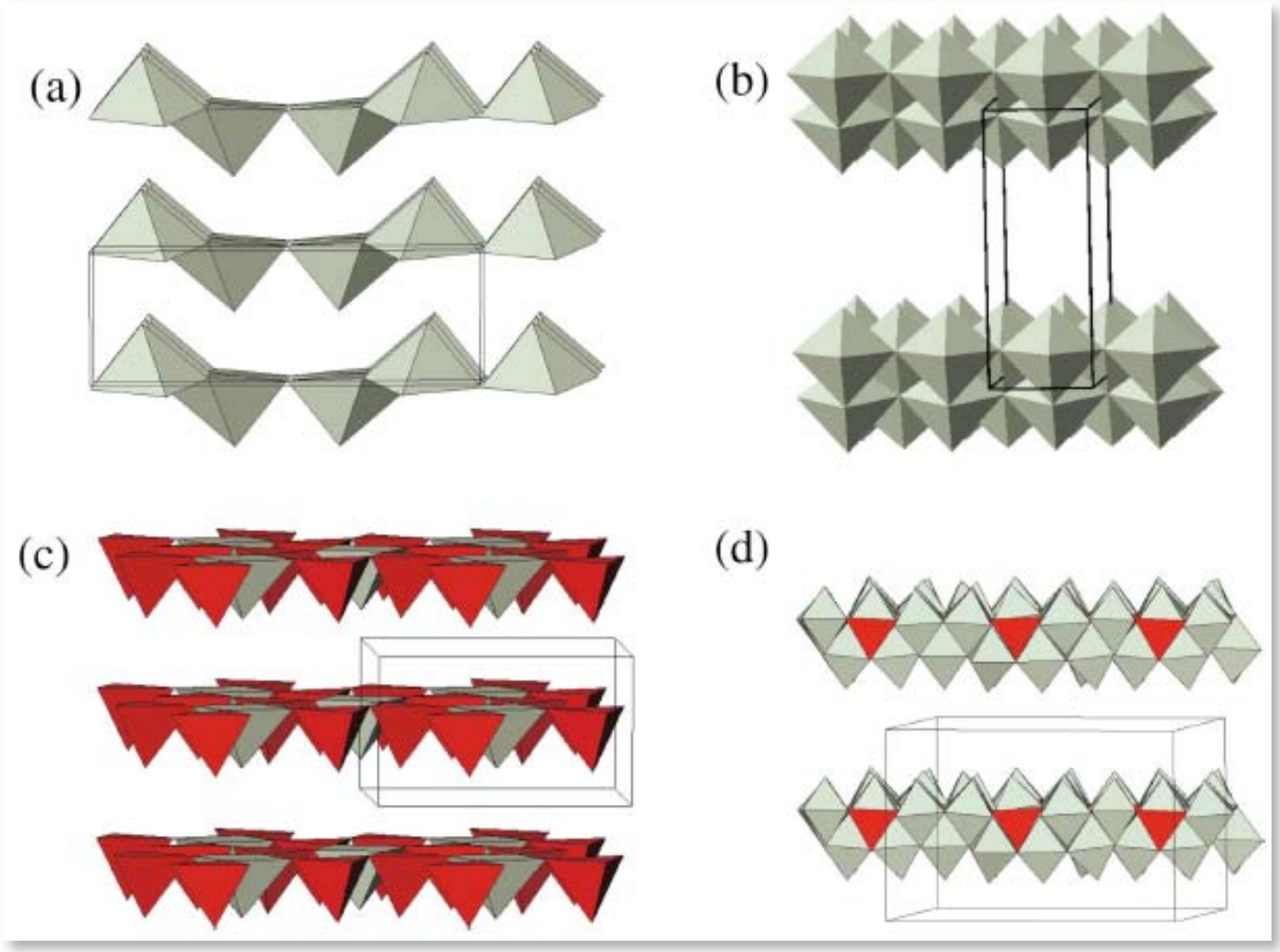
Inorganic nanotubes C. N. R. Rao and M. Nath, *J. Chem. Soc. Dalton Trans.* (2003) 1-24.



Amine-intercalated V_2O_5 nanosrolls. Group of R. Nesper at the ETH, Zurich.



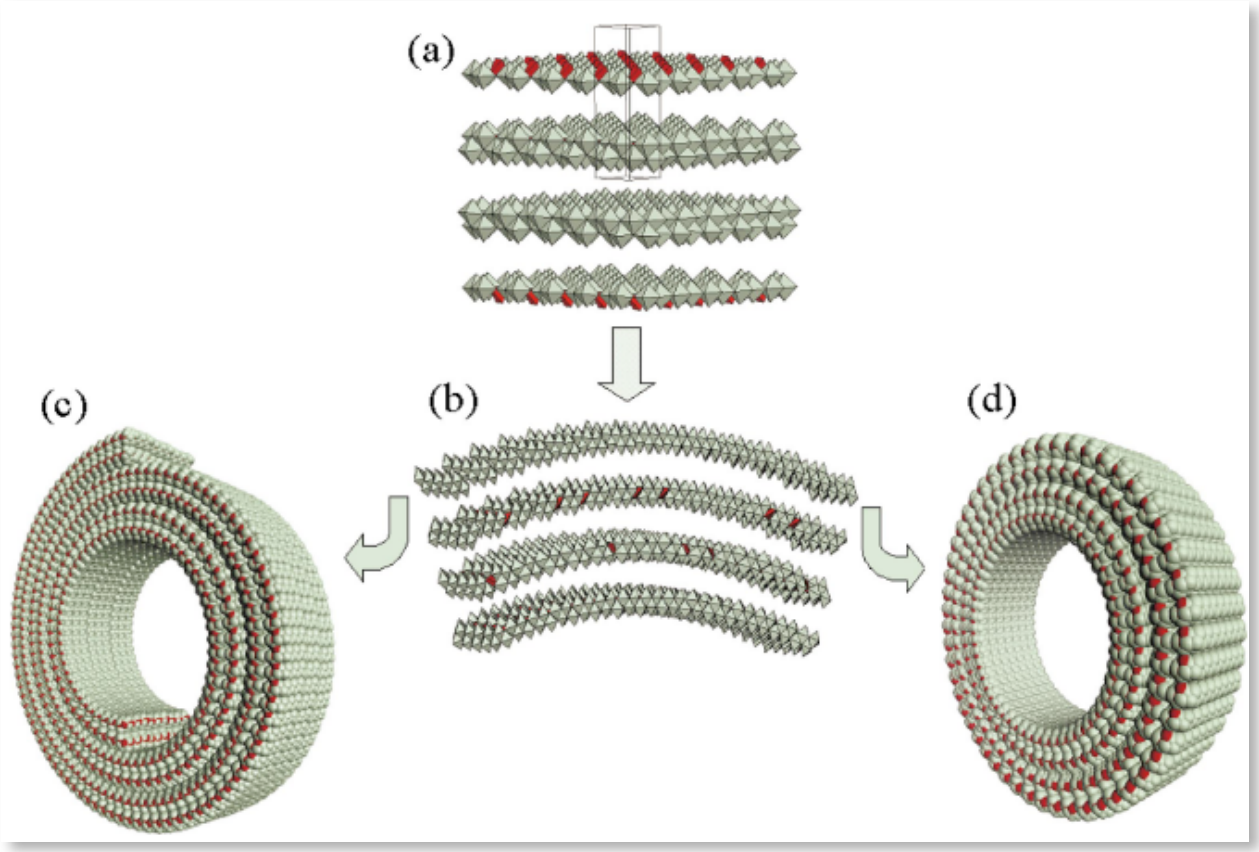
Inorganic nanotubes



Structures of various vanadium oxides.

Structure beyond Bragg: Study of V_2O_5 nanotubes, V. Petkov, P. Y. Zavalij, S. Lutta, M. S. Whittingham, V. Parvanov, and S. Shastri, *Phys. Rev. B.* **69** (2004) 085410.

Inorganic nanotubes



Modeling for the formation of V_2O_5 nanoscrolls.

Structure beyond Bragg: Study of V_2O_5 nanotubes, V. Petkov, P. Y. Zavalij, S. Lutta, M. S. Whittingham, V. Parvanov, and S. Shastri, *Phys. Rev. B.* **69** (2004) 085410.