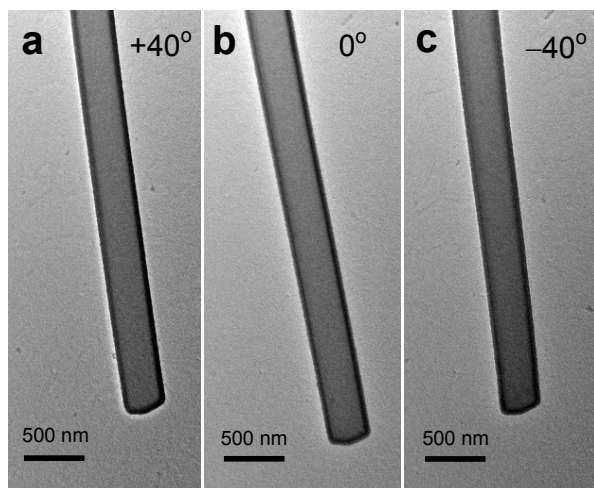


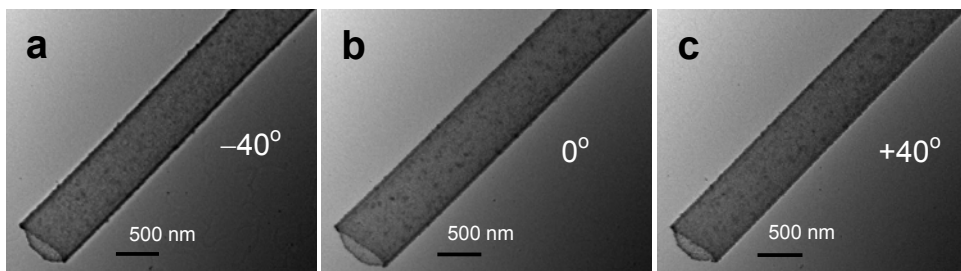
Salt-Assisted Deposition of SnO_2 on $\alpha\text{-MoO}_3$ Nanorods and Fabrication of Polycrystalline SnO_2 Nanotubes

Bin Liu and Hua Chun Zeng*

1. TEM results on tilting examination



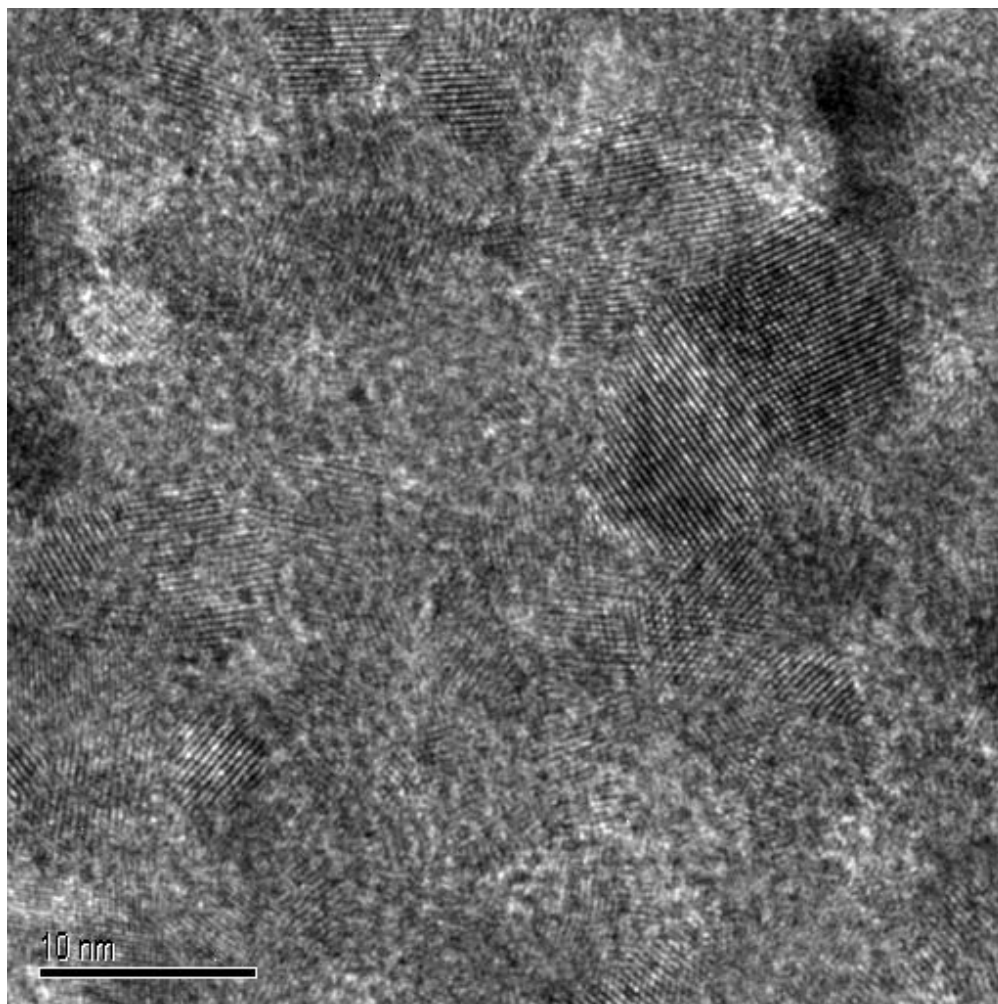
A close-ended SnO_2 nanotube (same as that in Figure 3 of the main text)



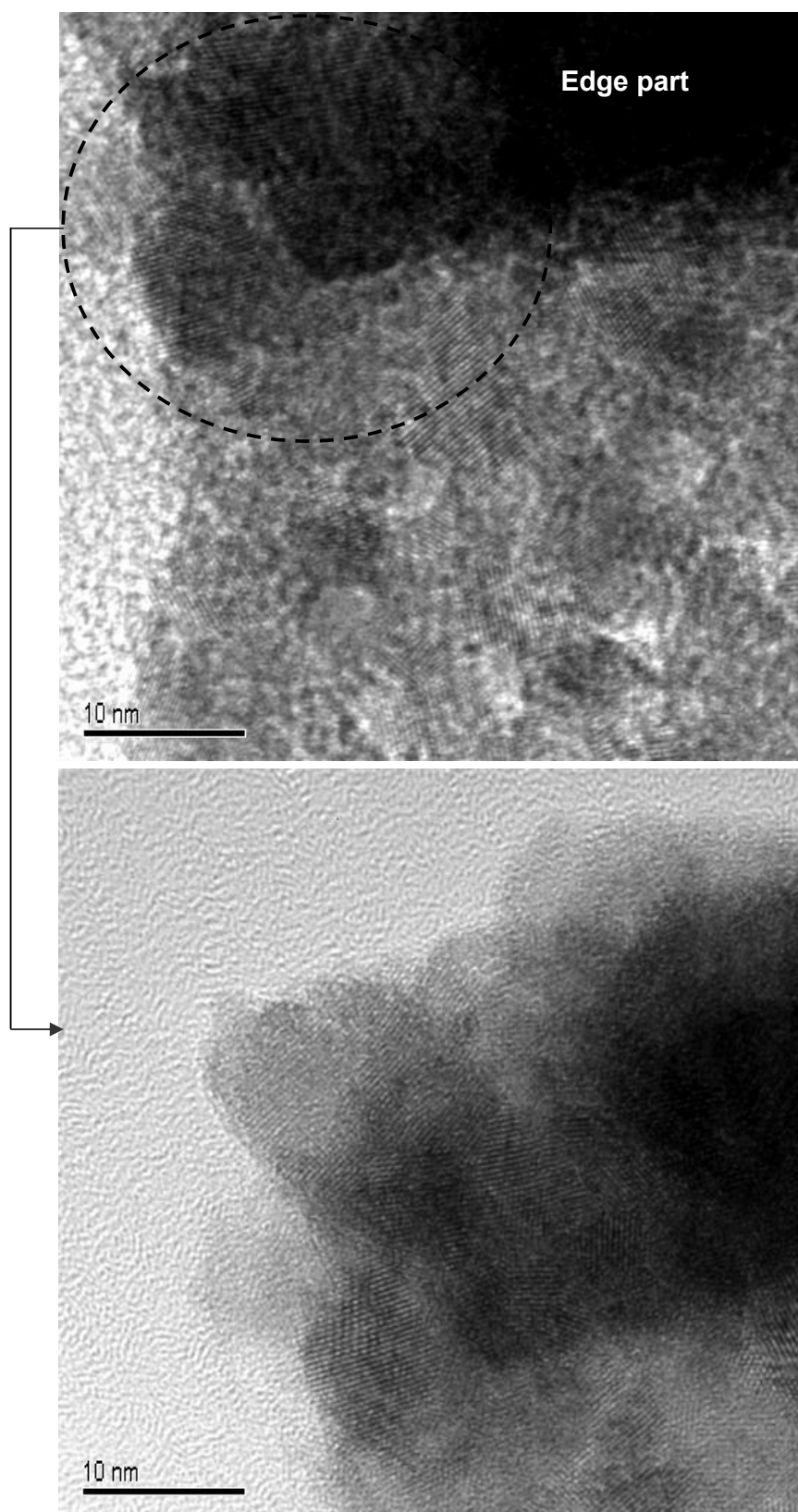
An open-ended SnO_2 nanotube (same as that in Figure 4 of the main text)

2. High resolution TEM results on wall structure

The following HRTEM image indicates a more detailed view on the SnO_2 lattice fringes and the presence of inter-particle spaces (lighter parts).

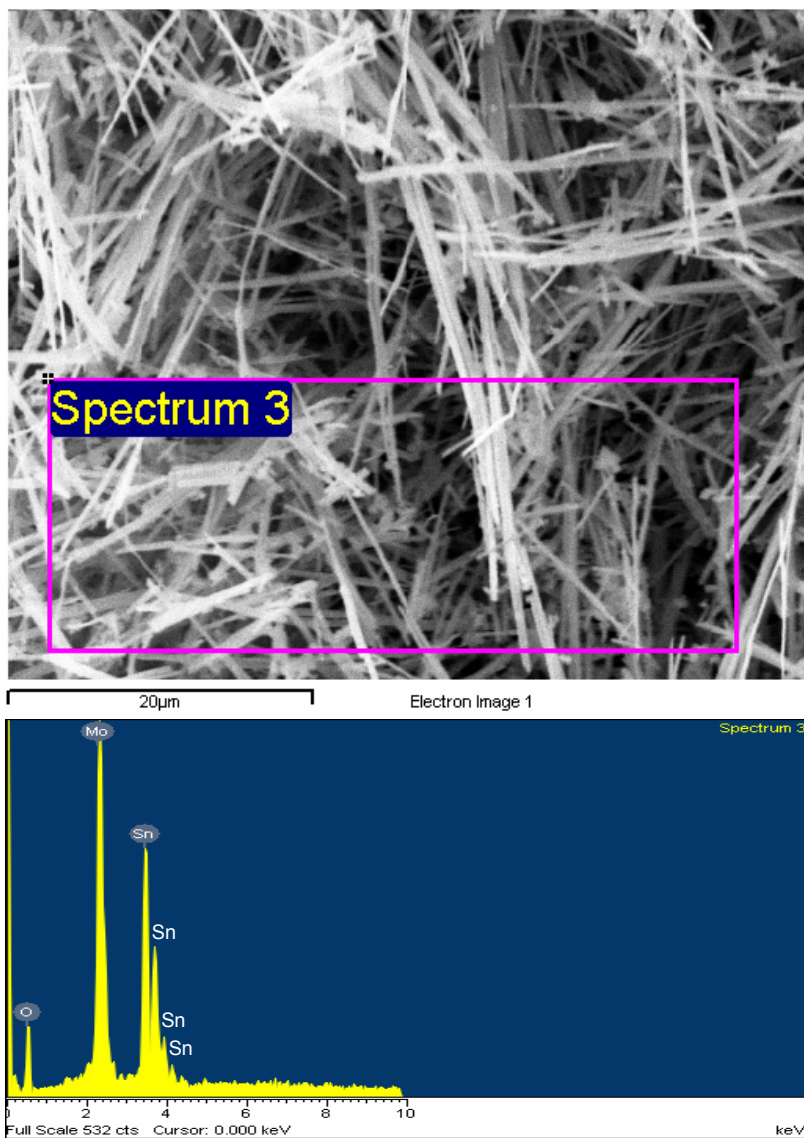


The following two HRTEM images indicate the random orientations of the SnO₂ nanocrystallites, including those on the edge areas (the framed darker part).



3. Energy dispersive X-ray analysis on large-scale SnO₂ nanotube products

The following SEM image was measured for a sample of the SnO₂ nanotubes, together with their dissolving α -MoO₃ nanorod templates. A sample EDX spectrum from the framed area and its analytical results are also displayed. Note that the remaining α -MoO₃ nanorod templates can be removed completely either with a prolonged reaction time or with dilute NaOH solutions (see the main text).



Element	App Conc.	Intensity Corrn.	Weight%	Weight% Sigma	Atomic%
Mo L	22.08	0.8549	31.56	0.79	14.16
O K	7.54	0.3514	26.21	0.83	70.52
Sn L	26.71	0.7727	42.23	0.86	15.32
Totals			100.00		100.00

4. XRD patterns of dissolving α -MoO₃ and H_xMoO₃

The following XRD patterns were measured for a sample of the SnO₂ nanotubes, together with their dissolving α -MoO₃ nanorod templates. It should be mentioned that under high-temperature conditions, the conversion of α -MoO₃ to H_xMoO₃ is not observable, due to the protection of thick SnO₂ layer (pattern a). However, at lower temperatures, the conversion is faster (pattern b) because of a thinner layer of SnO₂. In addition to α -MoO₃ phase (patterns b, with the reference to pattern c), H_xMoO₃ phase is present due to redox reactions between SnCl₂ and solid α -MoO₃. Note that H_xMoO₃ has a very similar structure as that of α -MoO₃ with an expansion along *b*-axis.⁴⁸

