Supplementary Material (ESI) for CrystEngComm

Supplementary Information for

"Synthesis of Single-Crystalline One-Dimensional $LiNbO_3$ Nanowires"

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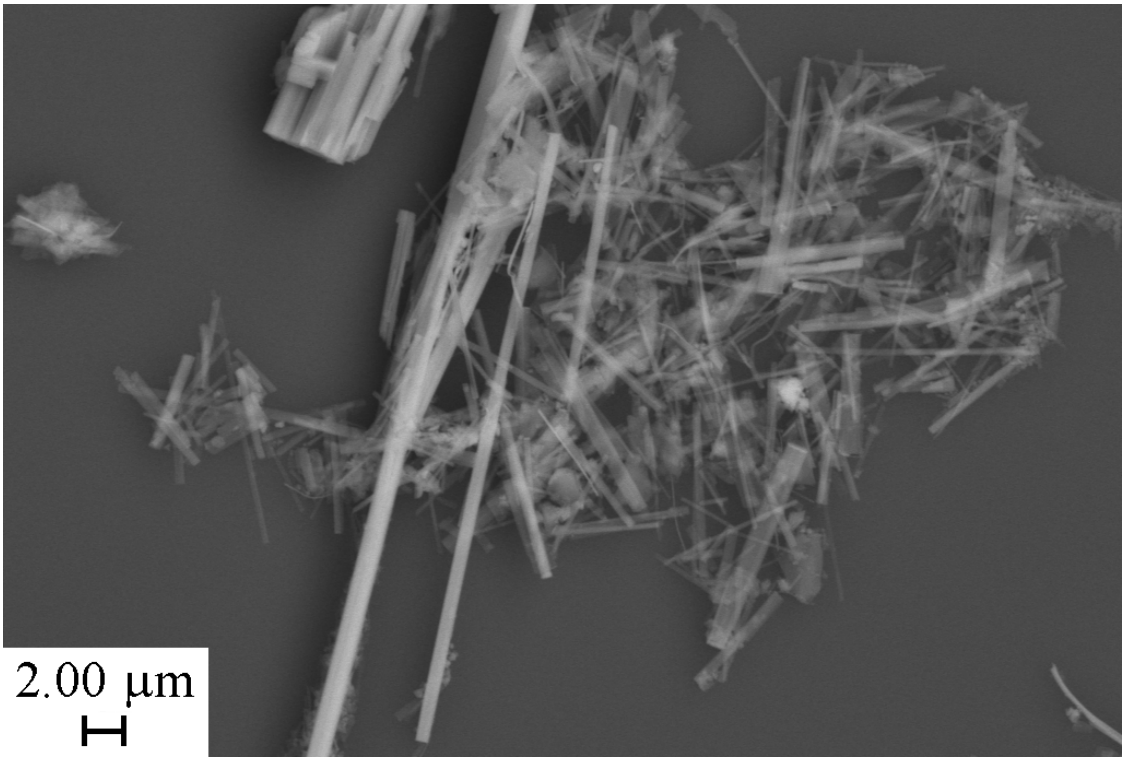

Figure S1. SEM image of as-prepared Nb_2O_5 nanowires.

Experimental: Instrumentation Details

Characterization

XRD: To prepare powder X-ray diffraction (XRD) samples, samples were rendered into slurries in ethanol, sonicated for about 1 min, and then air-dried upon deposition onto glass slides. Diffraction patterns were collected using a Scintag diffractometer, operating in the Bragg configuration using Cu K*a* radiation (λ = 1.54 Å) from 10 to 80° at a scanning rate of 2° per minute.

Electron Microscopy: The morphology and dimensions of as-prepared samples were initially characterized using a field emission scanning electron microscopy instrument (FE-SEM Leo 1550), operating at an accelerating voltage of 15 kV and equipped with energy-dispersive X-ray spectroscopy (EDS) capabilities. Samples for scanning electron microscopy (SEM) were prepared by dispersing samples in ethanol, sonicating for about 1 min, and then depositing the sample onto a silicon wafer, attached to a SEM brass stub. All of these samples were then conductively coated with gold by sputtering for 15 s to minimize charging effects under SEM imaging conditions.

Low magnification transmission (TEM) images were taken at an accelerating voltage of 80 kV on a FEI Tecnai12 BioTwinG^2 instrument, equipped with an AMT XR-60 CCD Digital Camera System. High-resolution TEM (HRTEM) images and selected area electron diffraction (SAED) patterns were obtained on a JEOL 2010F instrument, equipped with a Gatan high-angle annular dark field detector (HAADF) for performing incoherent HAADF or Z-contrast imaging in scanning TEM mode at accelerating voltages of 200 kV. Specimens for all of these TEM experiments were prepared by dispersing the as-prepared product in ethanol, sonicating for 2 min to ensure adequate

dispersion of the nanowires, and dipping one drop of the solution onto a 300 mesh Cu grid, coated with a lacey carbon film.

Table 1	
Peak Position (cm^{-1})	**Peak Assignments**
151	*E* TO
237	*E* TO
256	*E* TO / quasi TO
275	quasi TO
318	*E* TO
331	*E* TO
365	*E* TO
423	*E* LO
430	*E* TO
578	*E* TO
621	A_1 TO / *E* TO
870	quasi LO

Supplementary Table S1: Peak positions and identification of peaks in a $LiNbO_3$ nanowire Raman spectrum.