Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A
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Supporting Information

Reversible Lithium-ion Insertion in Triclinic Hydrated Molybdenum Oxides Nanobelts

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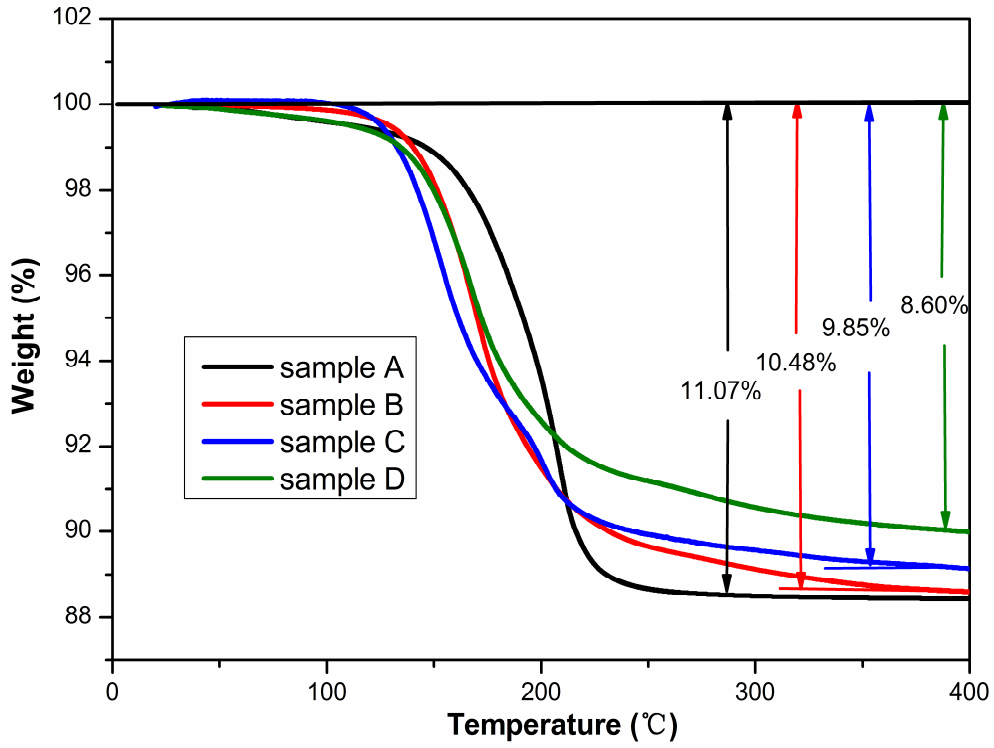

Figure S1. The TG curves of the four as-prepared products α-MoO_3•H_2O (sample A), α-MoO_3•0.936H_2O (sample B), α-MoO_3•0.874H_2O (sample C) and α-MoO_3•0.752H_2O (sample D), respectively.

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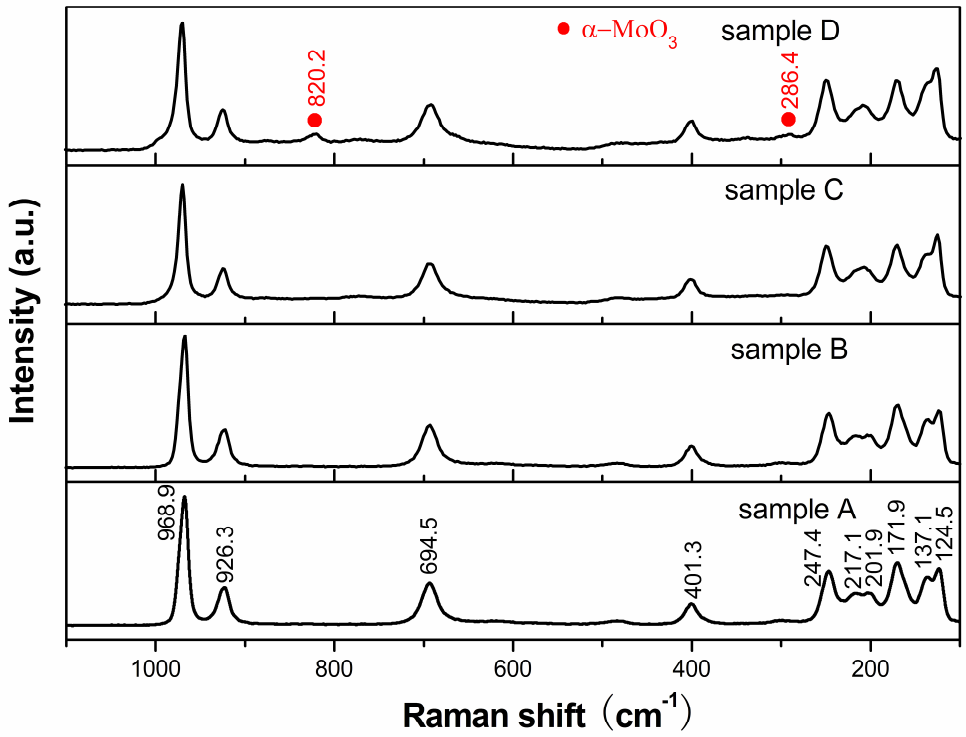

Figure S2. The Raman spectra of the four as-prepared products α-MoO_3•H_2O (sample A), α-MoO_3•0.936H_2O (sample B), α-MoO_3•0.874H_2O (sample C) and α-MoO_3•0.752H_2O (sample D), respectively.

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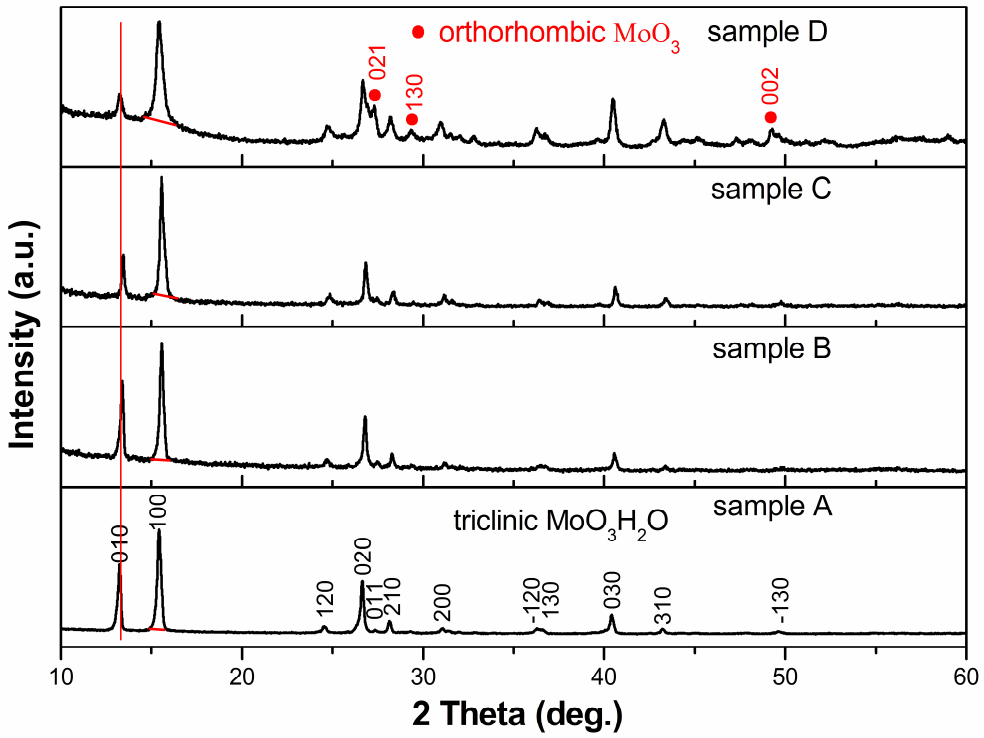

Figure S3. The enlarged Fig. 1a.

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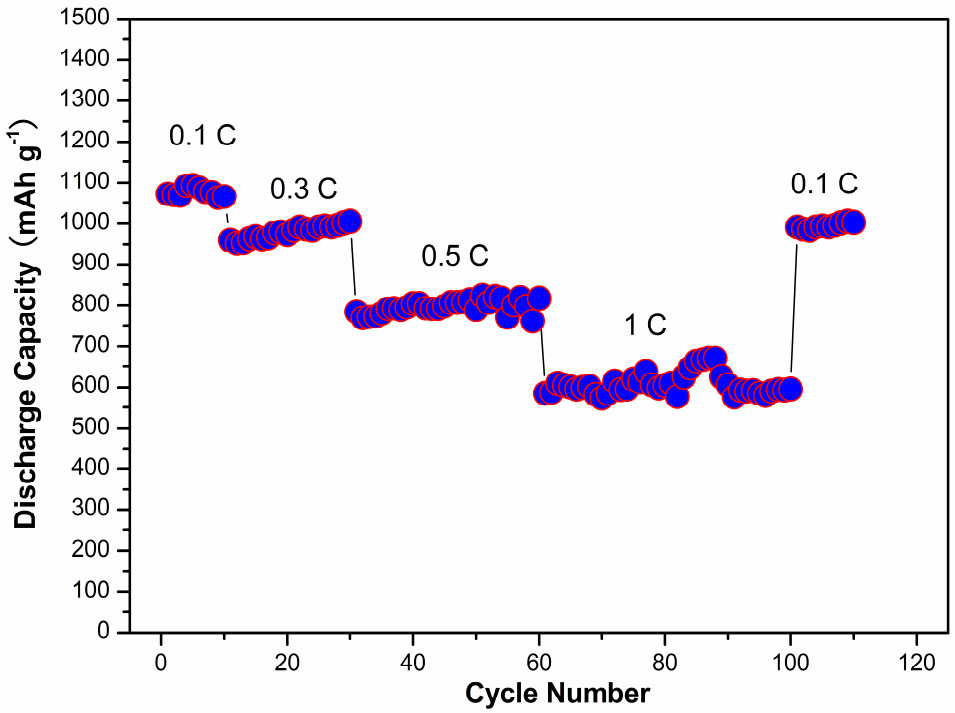

Figure S4. Cycling performance of the sample A at various rates (0.1, 0.3, 0.5, 1 and 0.1 C) in the potential window of 3 V- 1 mV at room temperature.

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Experimental Section

Materials characterization

X-ray powder diffraction (XRD) measurements were determined by a Bruker D8 advanced X-ray diffractmeter. The scanning electron microscopy (SEM) images were taken by using a field-emitting scanning electron microscope (FESEM, JEOL-JSM-6700F).The transmission electron microscopy (TEM) images, high-resolution transmission electron microscopy (HRTEM) images and the selected-area electron diffraction (SAED) patterns were taken on a JEOL-2010 transmission electron microscope with an accelerating voltage of 200 kV. TG analysis was carried out using a TA SDT Q600 simultaneous thermogravimetric analyzer in the ambient atmosphere. Raman spectrum was carried out on a JY LABRAM-HR confocal laser micro-Raman spectrometer using Ar^+ laser excitation with a wavelength of 514.5 nm.

Electrochemical measurement

The active material (sample A, B, C or D), acetylene black and poly (vinylidene fluoride) with a weight ratio of 70:15:15 were mixed homogeneously with N-methyl-pyrrolidone, the obtained slurry was pasted on Cu foil and dried at 80 °C for 10 h in vacuum. The coin cells (size: 2016) were then assembled in an argon-filled glove box. The cells were consist of lithium foil (anode), Celgard 2400 (separator), and 1 M $LiPF_6$ in a mixed solvent of ethylene carbonate and dimethyl carbonate

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(1:1 volume ratio) (electrolyte). The galvanostatic charge and discharge were controlled between 0.001 and 3.0 V on a LAND-CT2001A instrument at room temperature.