Superior gas-sensing and lithium-storage performances of SnO_2 nanocrystals synthesized by hydrothermal method

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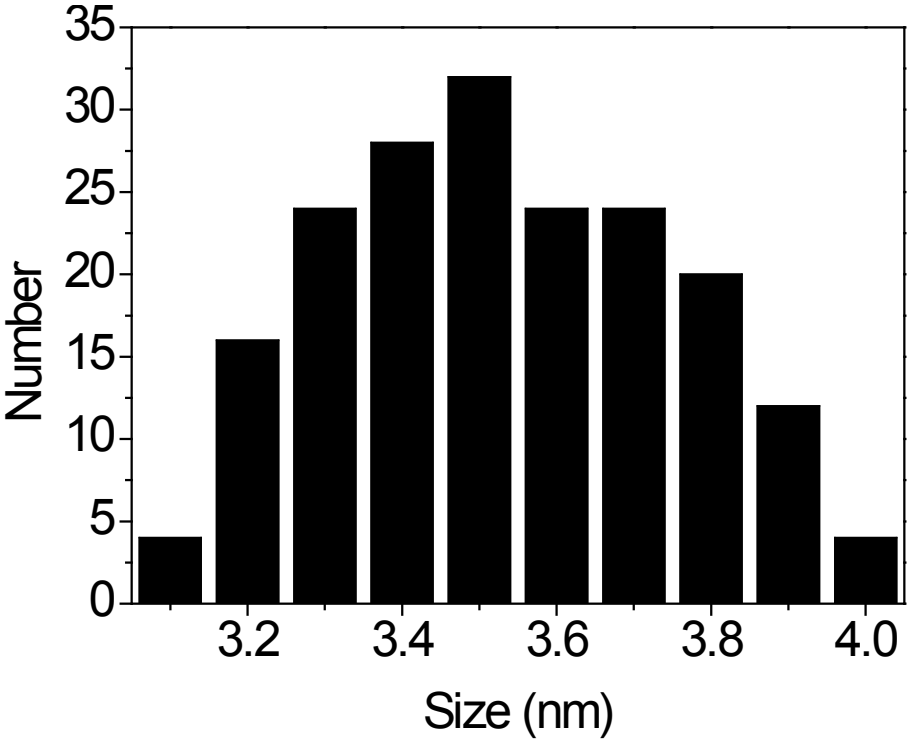

Fig. S1 Size distribution of the as-synthesized SnO_2 nanocrystals.

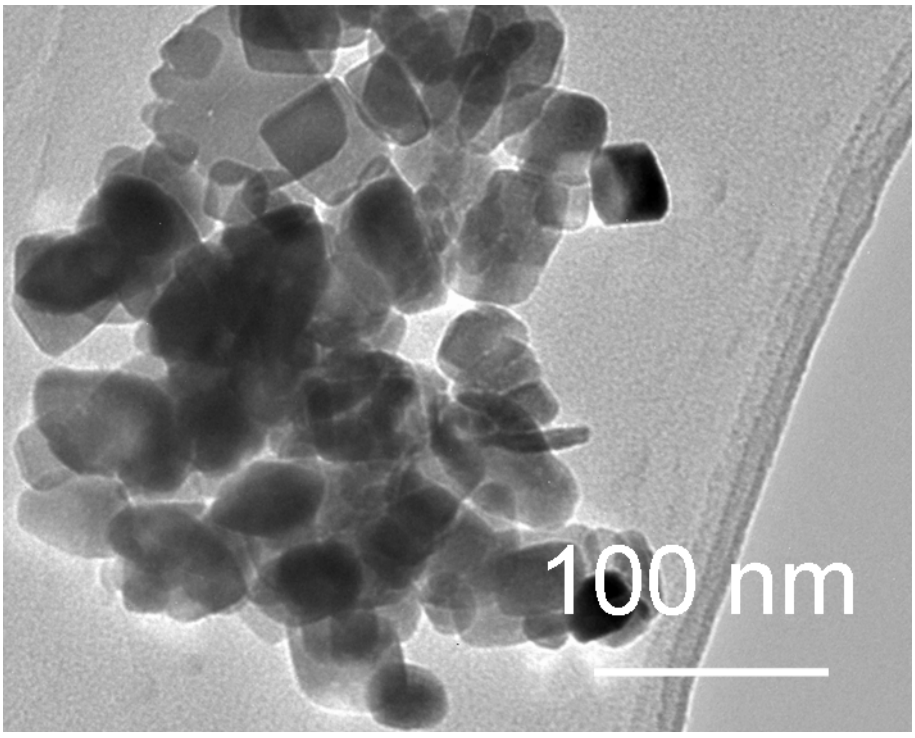

Fig. S2 TEM image of the as-synthesized SnO_2 nanocrystals without using acetic acid.

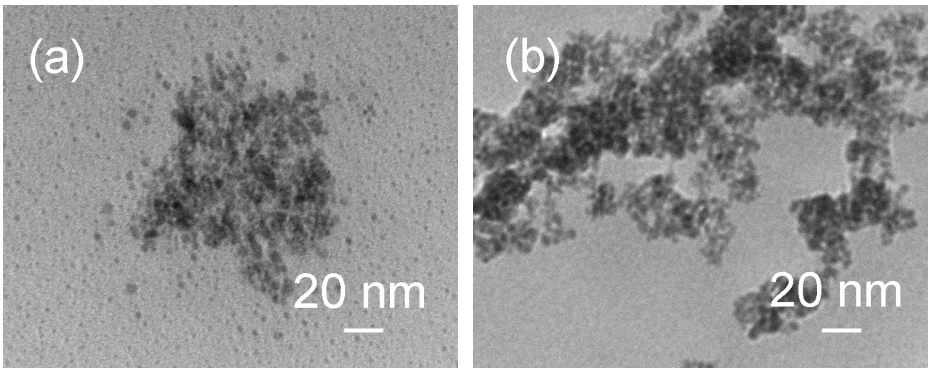

Fig. S3 TEM images of the SnO_2 nanocrystals in the presence of different amount of acetic acid: (a) 0.6 mL and (b) 6 mL.

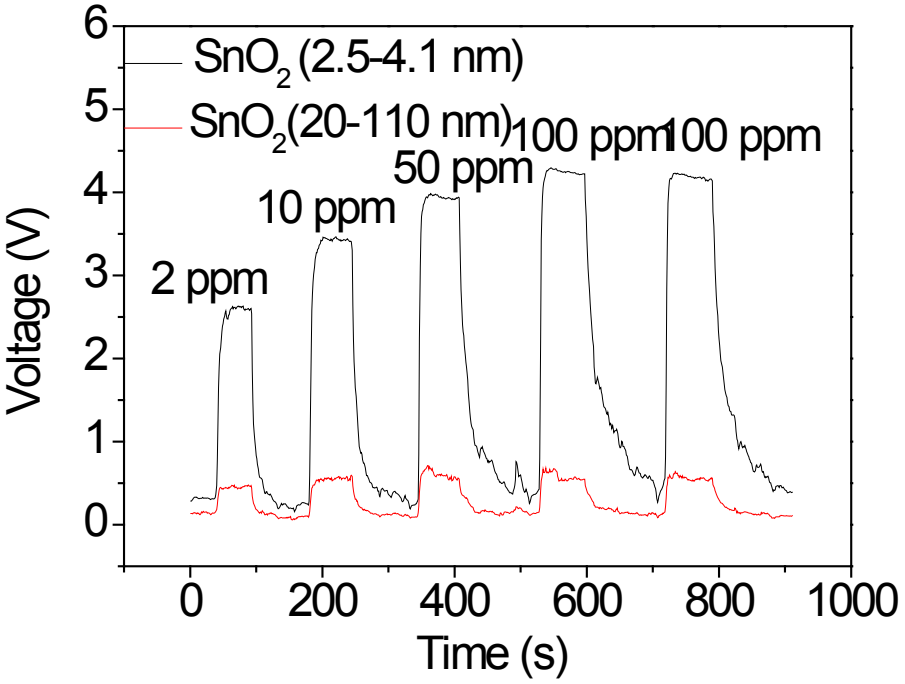

Fig. S4 Dynamic response–recovery curves of the sensors of SnO_2 with different sizes to different ethanol concentrations at 220 °C.

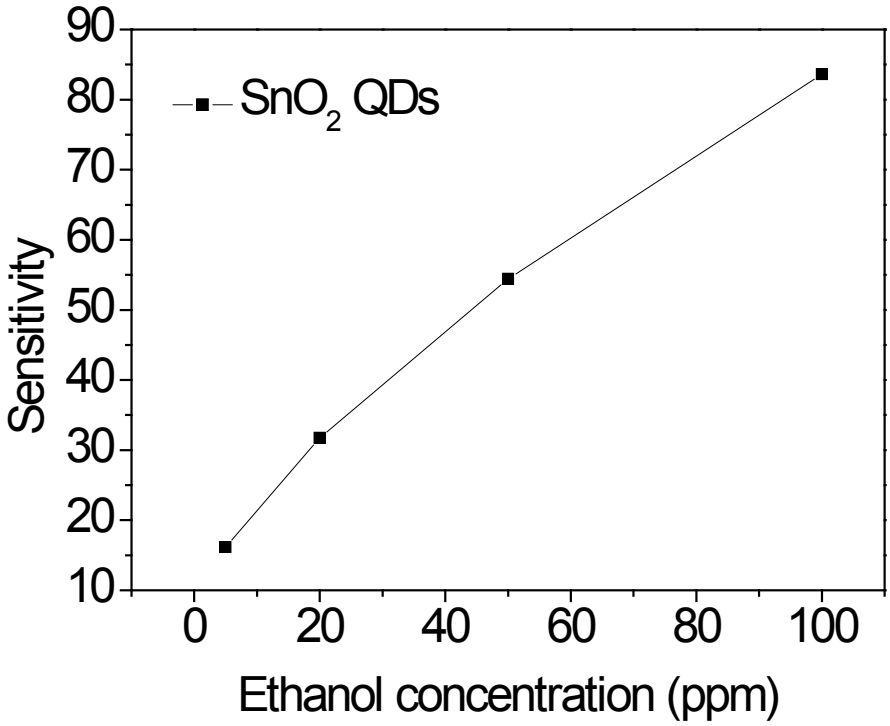

Fig. S5 Sensor response to different ethanol concentrations at 220 °C.

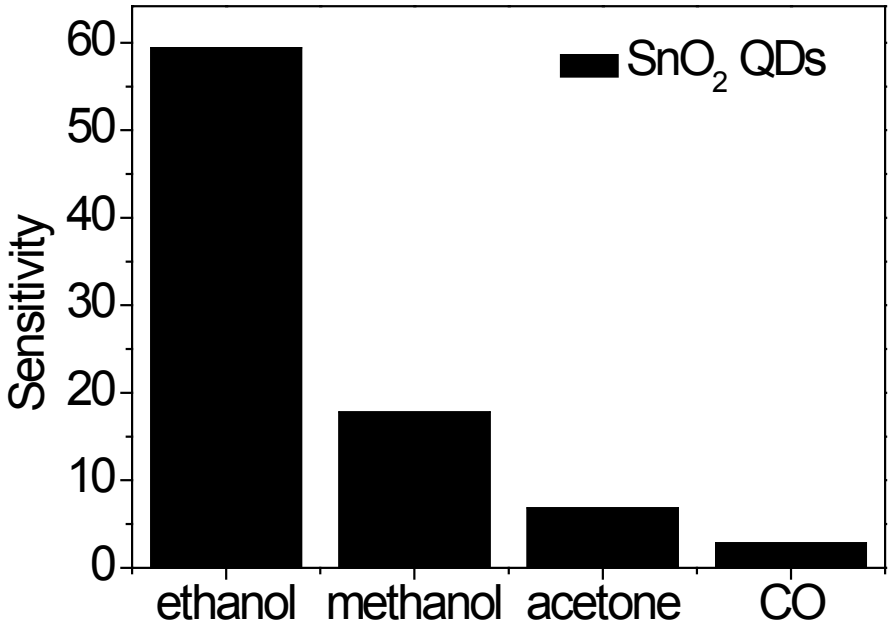

Fig. S6 Sensor response to different gases at 220 °C.

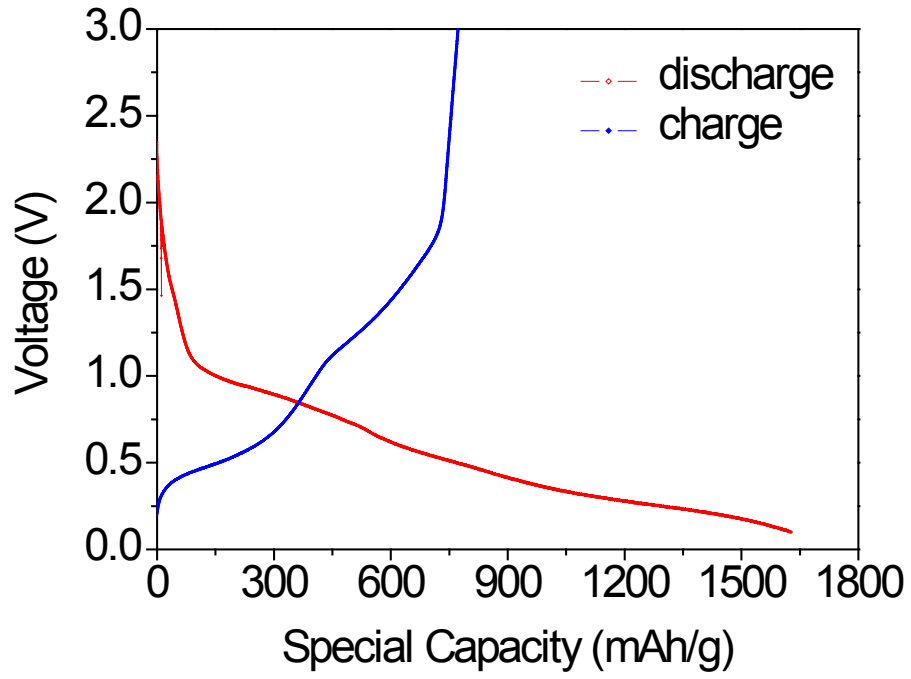

Fig. S7 The initial charge and discharge curve of the as-synthesized SnO_2 nanocrystals electrode.

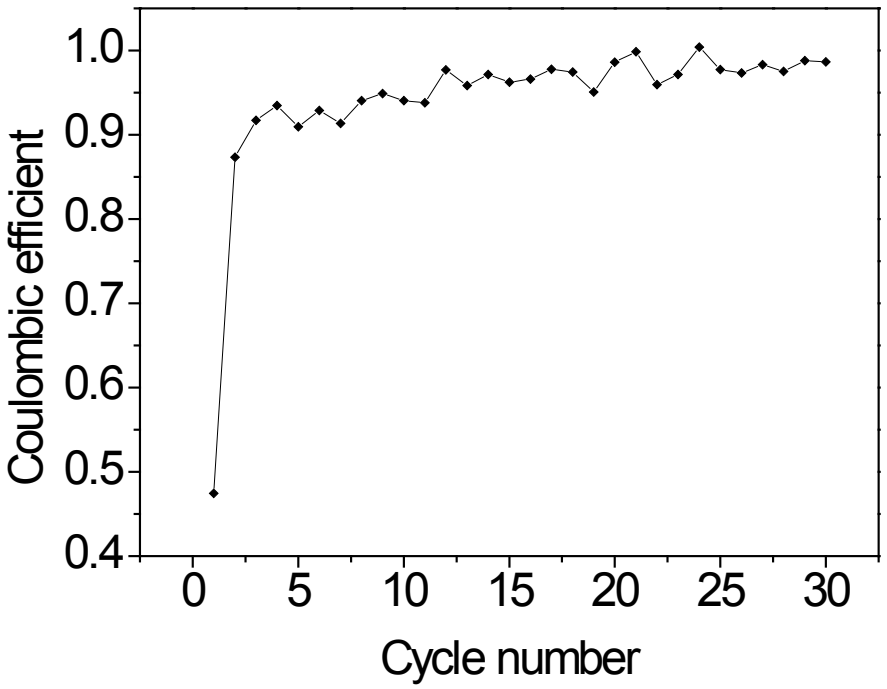

Fig. S8 Coulombic efficiency vs. cycle number for the as-synthesized SnO_2 nanocrystals electrode.

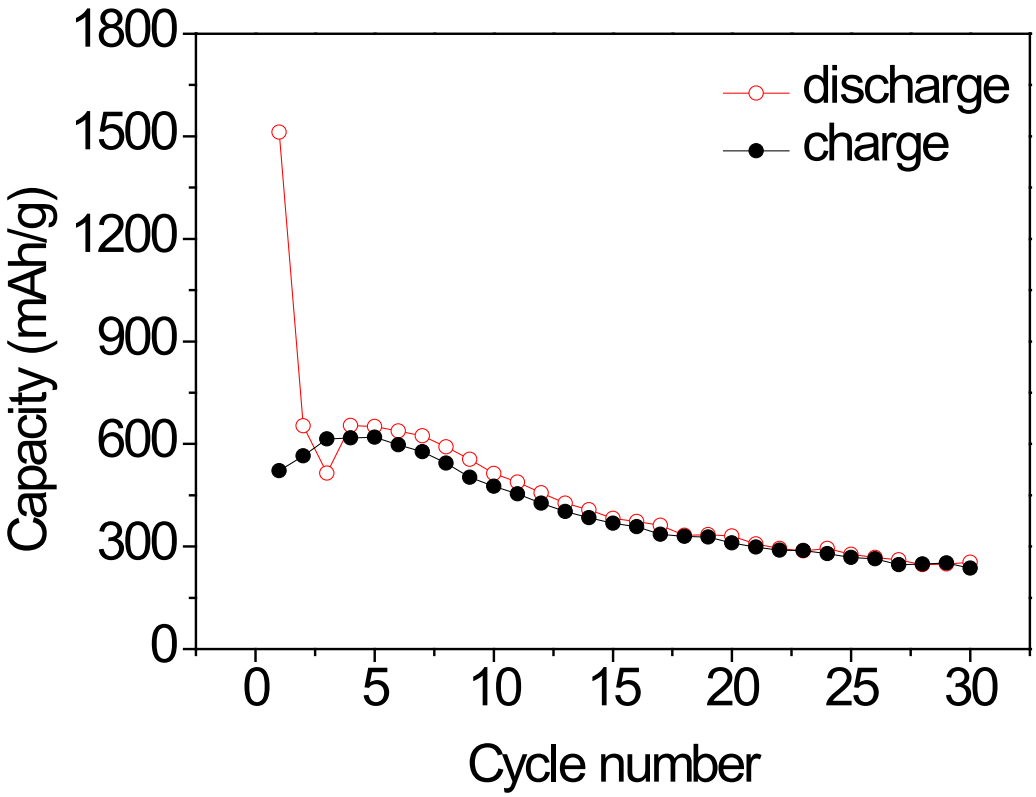

Fig. S9 Variation of Li intercalation-deintercalation capacity vs. cycle number for the SnO_2 nanoparticles with size of 20-110 nm.