Electronic Supplementary Material (ESI) for Inorganic Chemistry Frontiers.

Supplementary content

Construction of flower-like $ZnSnO_3/Zn_2SnO_4$ hybrids for enhanced phenylamine sensing performance

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Synthesis of $ZnSnO_3$ nanosheets: $ZnSnO_3$ nanosheets were synthesized based on literature with a few modification [1]. Typically, 0.002 mol $Na_2SnO_3 \cdot 4H_2O$ and 0.002 mol $Zn(CH_3COO)_2 \cdot 2H_2O$ were dissolved in 20 ml of mixed solutions (5 ml ethanol and 15 ml DI water), respectively. Then Na_2SnO_3 solution was slowly dropped into the $Zn(CH_3COO)_2$ solution under vigorous stirring for 15 min. Next, the above solution was transferred into Teflon-lined autoclave and kepted at 180^{o}C at 12 h. After cooled to room temperature, the precipitate was collected by centrifugation and washed by DI water and ethanol several times, then dried for a ninght. Finally, the sample was annealed at 500^{o}C for 4 h.

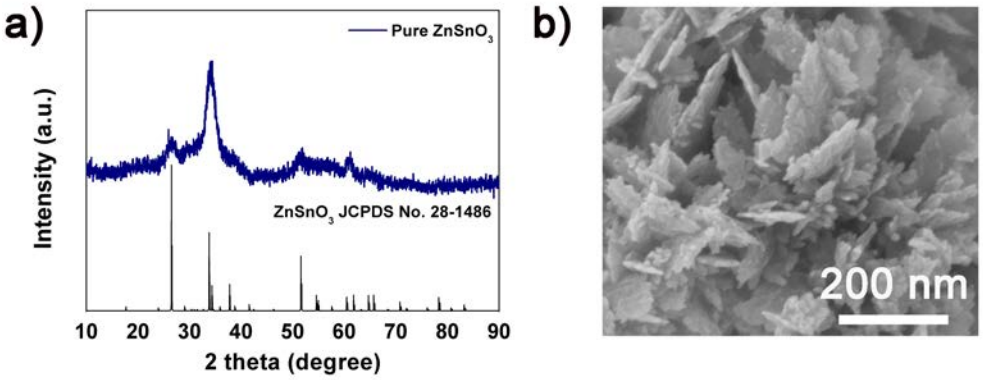

Fig. S1 (a, b) XRD pattern and SEM image of pure $ZnSnO_3$ nanosheets, respectively.

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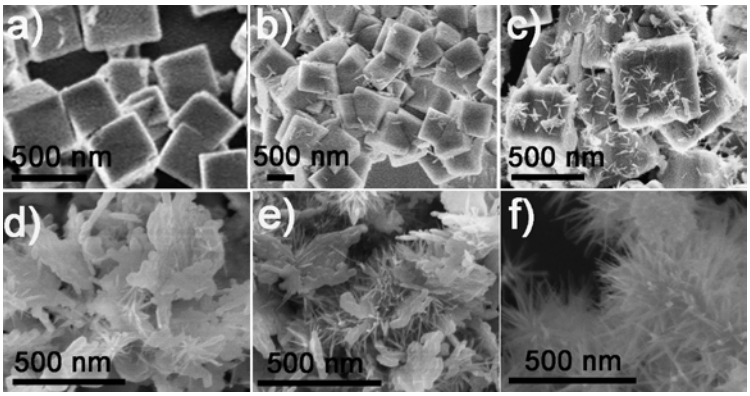

Fig. S2 SEM images of the as-obtained $ZnSn(OH)_6$ cubes at hydrothermal reactions of (a) 0 h, (b) 6 h, (c) 10 h, (d) 18 h, (e) 20 h and (f) 24 h.

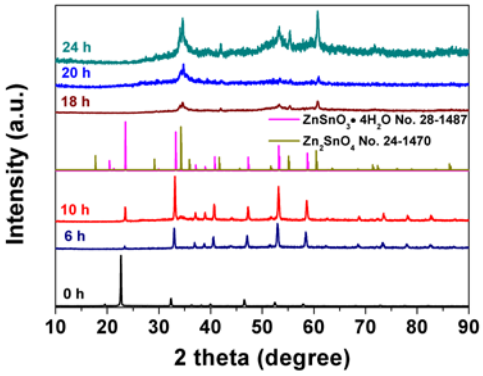

Fig. S3 XRD pattern of precursors at different reaction time

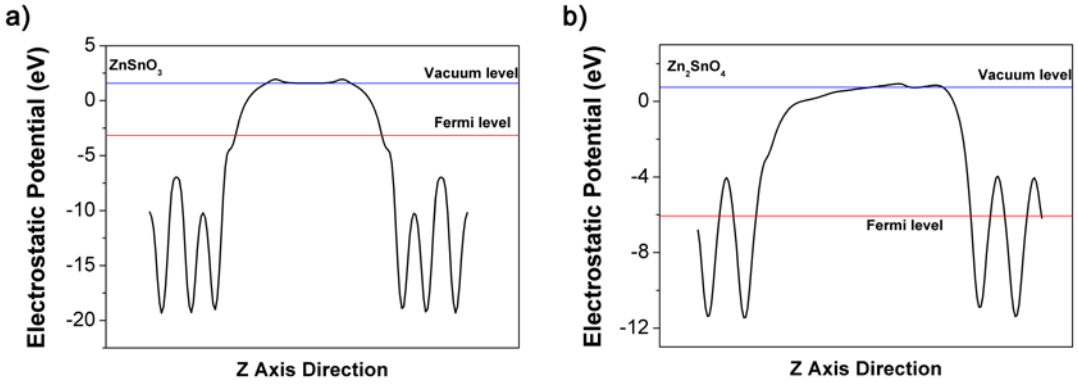

Fig. S4. Electrostatic potentials for the (a) $ZnSnO_3$ and (b) Zn_2SnO_4.

References

[1] Y. J. Chen, B. H. Qu, L. Mei, D. N. Lei, L. B. Chen, Q. H. Li, T. H. Wang, Synthesis of $ZnSnO_3$ mesocrystals from regular cube-like to sheet-like structures and their comparative electrochemical properties in Li-ion batteries†, J. Mater. Chem. 22 (2012) 25373-25379.