

## Supplementary Information

### **Synthesis and formation mechanism of morphology-controllable indium containing precursors and optical properties of the derived In<sub>2</sub>O<sub>3</sub> particles**

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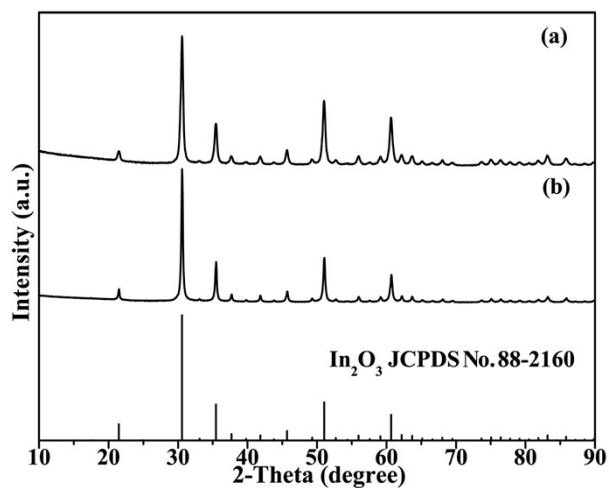


Fig. S1 XRD patterns of the  $\text{In}_2\text{O}_3$  oxides obtained by calcining (a) rods (S1) and (b) cubes (S2), respectively at 600 °C for 1h.

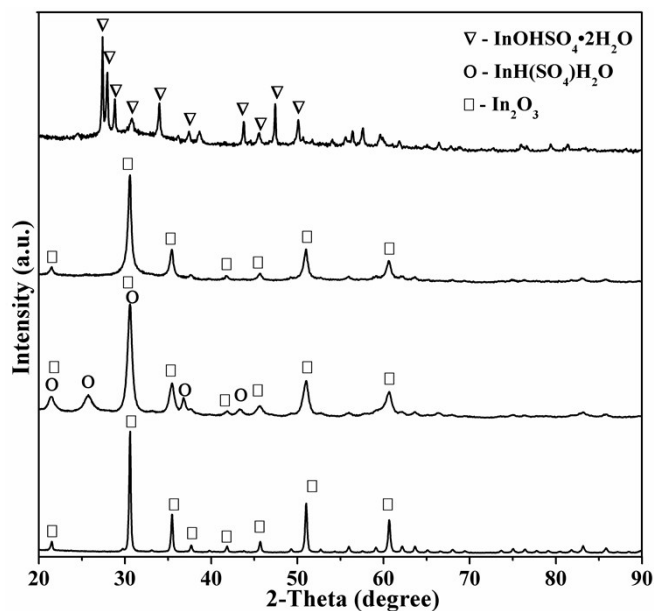


Fig. S2 XRD spectra showing the phase evolutions during calcination of the precursor at various temperatures in air.

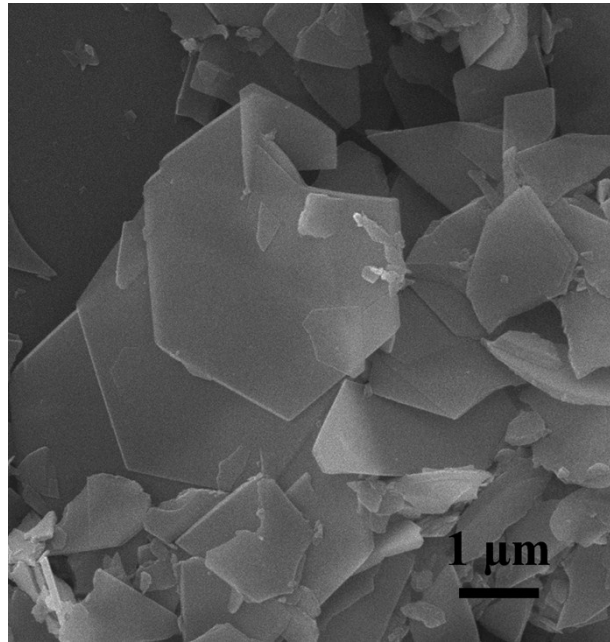


Fig. S3 FE-SEM images of the precursor synthesized with 0.06 M urea and 9 M  $\text{K}_2\text{SO}_4$  at 90 °C for 1 h.