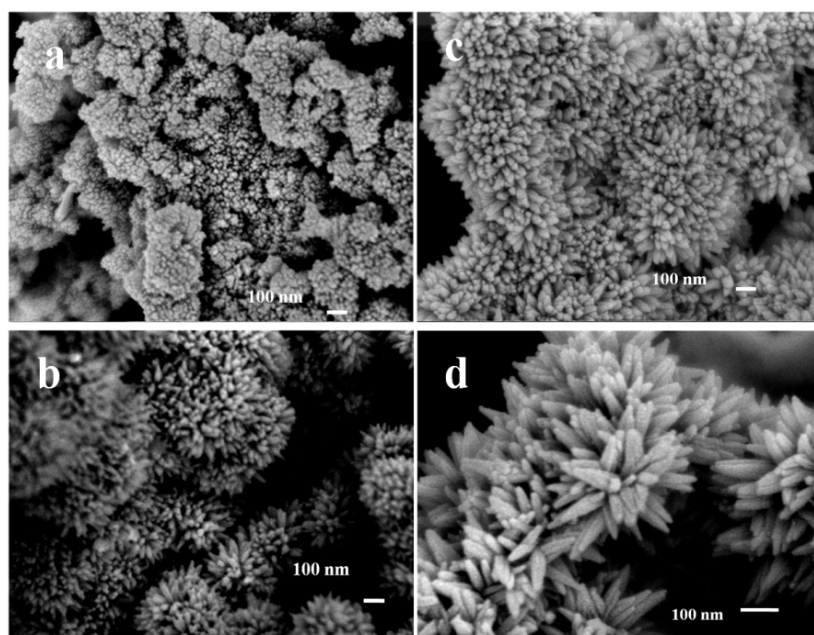


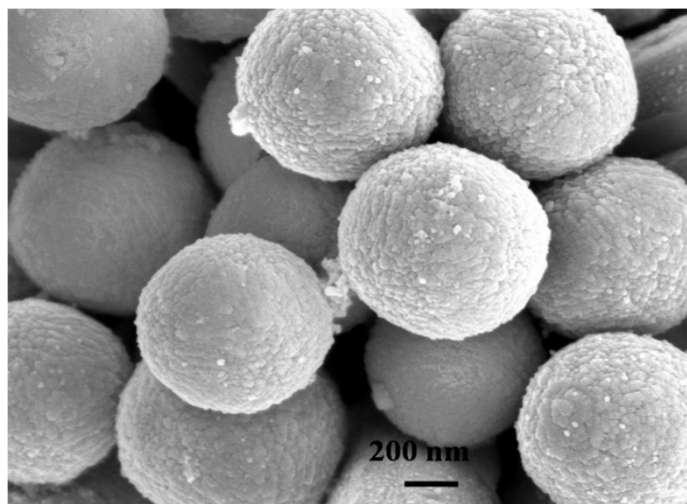
## Supporting Information

### One-step facile synthesis of coral-like Zn-doped SnO<sub>2</sub> and their cataluminescence sensing of 2-butanone

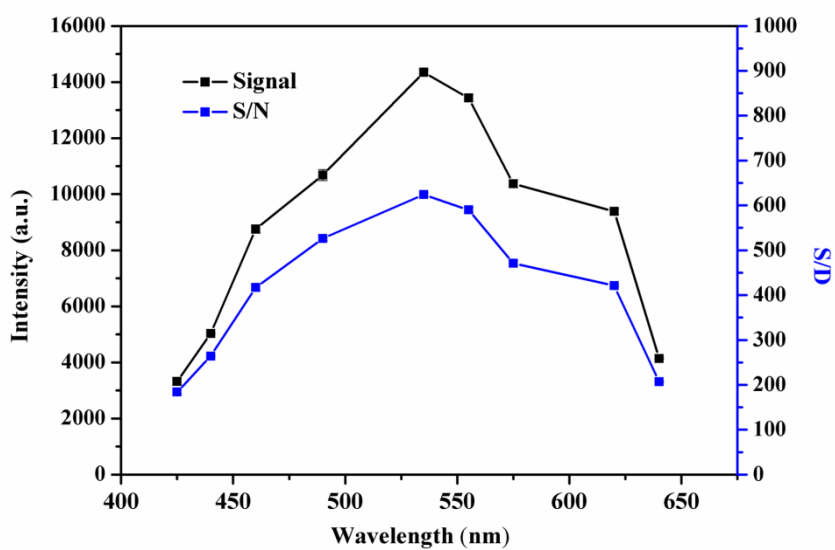
Yueyang Weng, Lichun Zhang, Wei Zhu, and Yi Lv\*



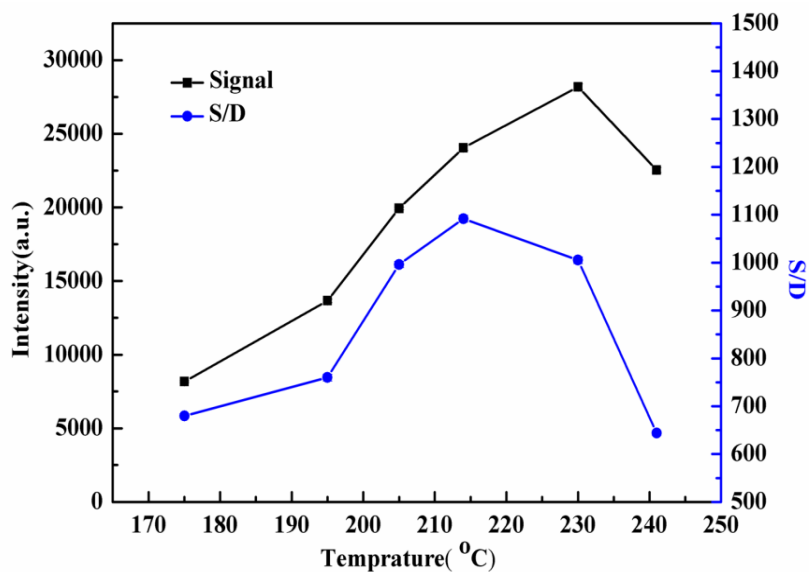
**Figure S1.** The prepared 1:10 Zn-doped SnO<sub>2</sub> samples at different hydrothermal times: (a) 5 h; (b) 10 h; (c) 15 h; (d) 20 h.



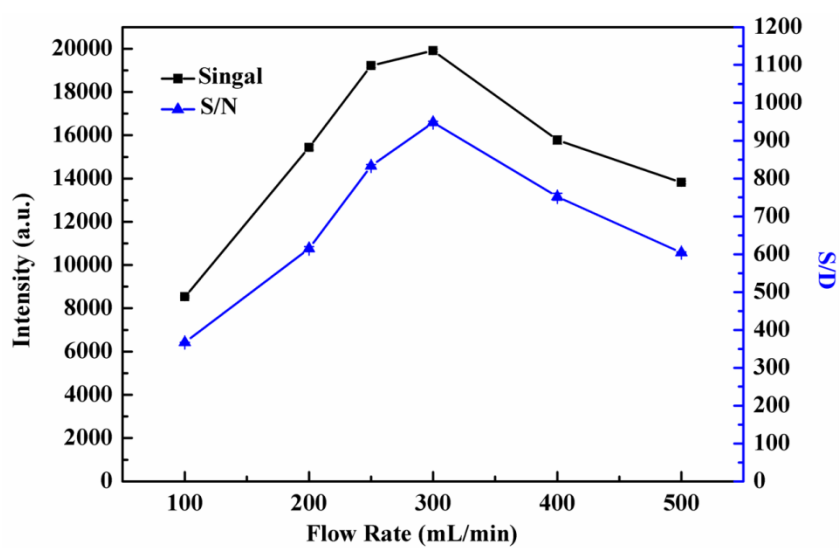
**Figure S2.** SEM image of the 1:10 Zn-doped SnO<sub>2</sub> in the absence of urea.



**Figure S3.** The sensor based on 1:10 Zn-doped SnO<sub>2</sub> response towards 46.3  $\mu\text{g mL}^{-1}$  2-butanone at different wavelengths. Temperature: 195  $^{\circ}\text{C}$ , flow rate of carrier gas: 250  $\text{mL min}^{-1}$ .



**Figure S4.** Comparison of CTL behavior and S/N ratio of 1:10 Zn doped SnO<sub>2</sub> to 46.3 µg mL<sup>-1</sup> 2-butanone at different temperatures. Wavelength: 535 nm, flow rate carrier gas: 300 mL min<sup>-1</sup>.



**Figure S5.** The sensor based on 1:10 Zn-doped SnO<sub>2</sub> response towards 46.3 µg mL<sup>-1</sup> 2-butanone at different air flow rates. Temperature: 214 °C, wavelength: 535 nm.