

**Ppb-level detection of isopropanol based on porous ZnSnO<sub>3</sub>/Ag  
through the synergy effects of Ag and amorphous nanocubes  
structure**

Fangling Zhou,<sup>a</sup> Zhuangzhuang Mu,<sup>a</sup> Zhenyu Yuan,<sup>\*abcd</sup> Hongmin Zhu,<sup>a</sup> Xin Yan,<sup>\*a</sup>

Hongliang Gao<sup>abcd</sup> and Fanli Meng<sup>\*abcd</sup>

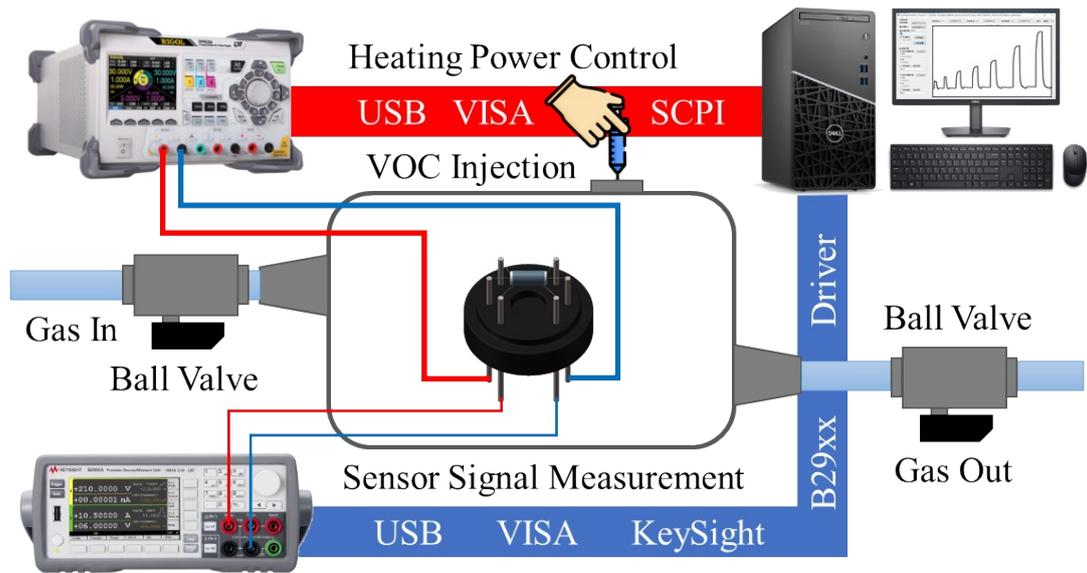
*a Key College of Information Science and Engineering, Northeastern University, Shenyang 110819, China. E-mail: mengfanli@ise.neu.edu.cn*

*b Hebei Key Laboratory of Micro-Nano Precision Optical Sensing and Measurement Technology, Qinhuangdao, 066004, China*

*c National Frontiers Science Center for Industrial Intelligence and Systems Optimization, Northeastern University, Shenyang 110819, China*

*d Key Laboratory of Data Analytics and Optimization for Smart Industry (Northeastern University), Ministry of Education, China*

**Corresponding authors.** E-mail: mengfanli@ise.neu.edu.cn



**Fig. S1** Schematic diagram of the static testing device.

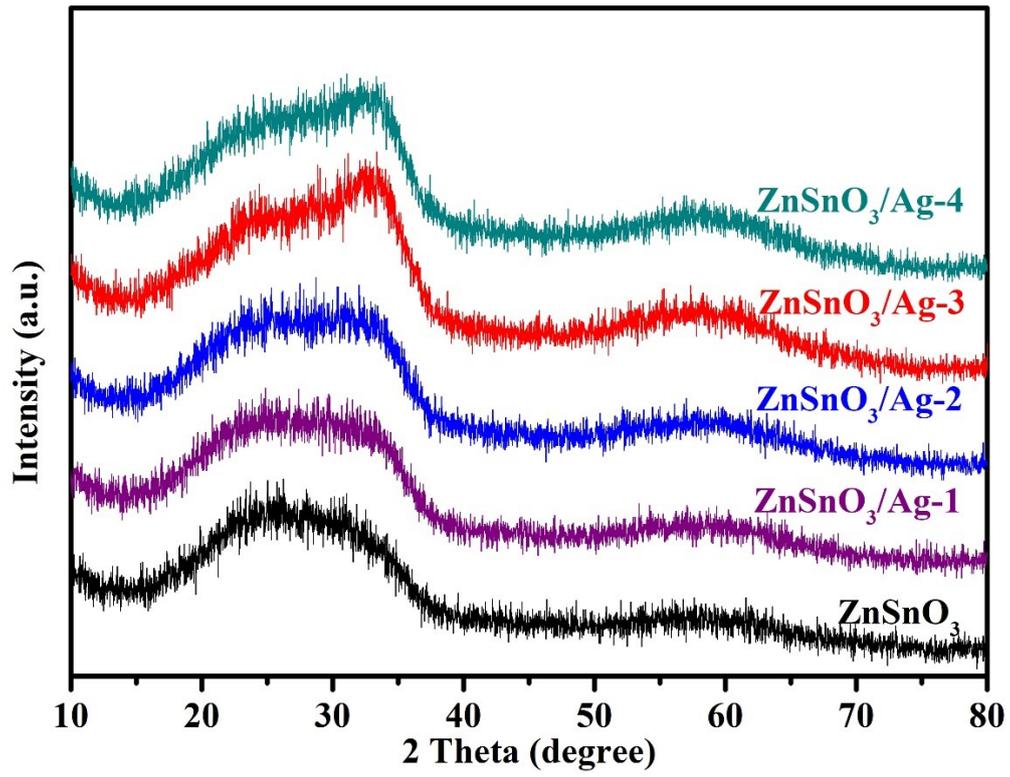


Fig. S2 XRD patterns of the as-prepared ZnSnO<sub>3</sub>/Ag and pure ZnSnO<sub>3</sub> samples.

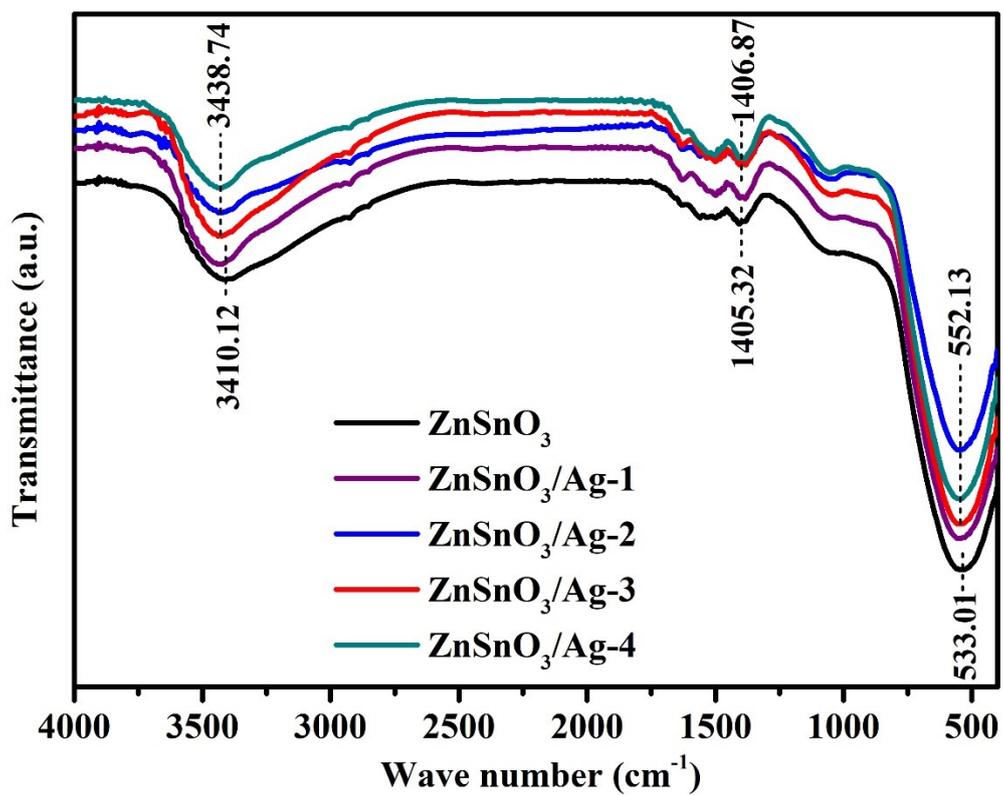


Fig. S3 FTIR spectra of ZnSnO<sub>3</sub>/Ag and pure ZnSnO<sub>3</sub> samples.

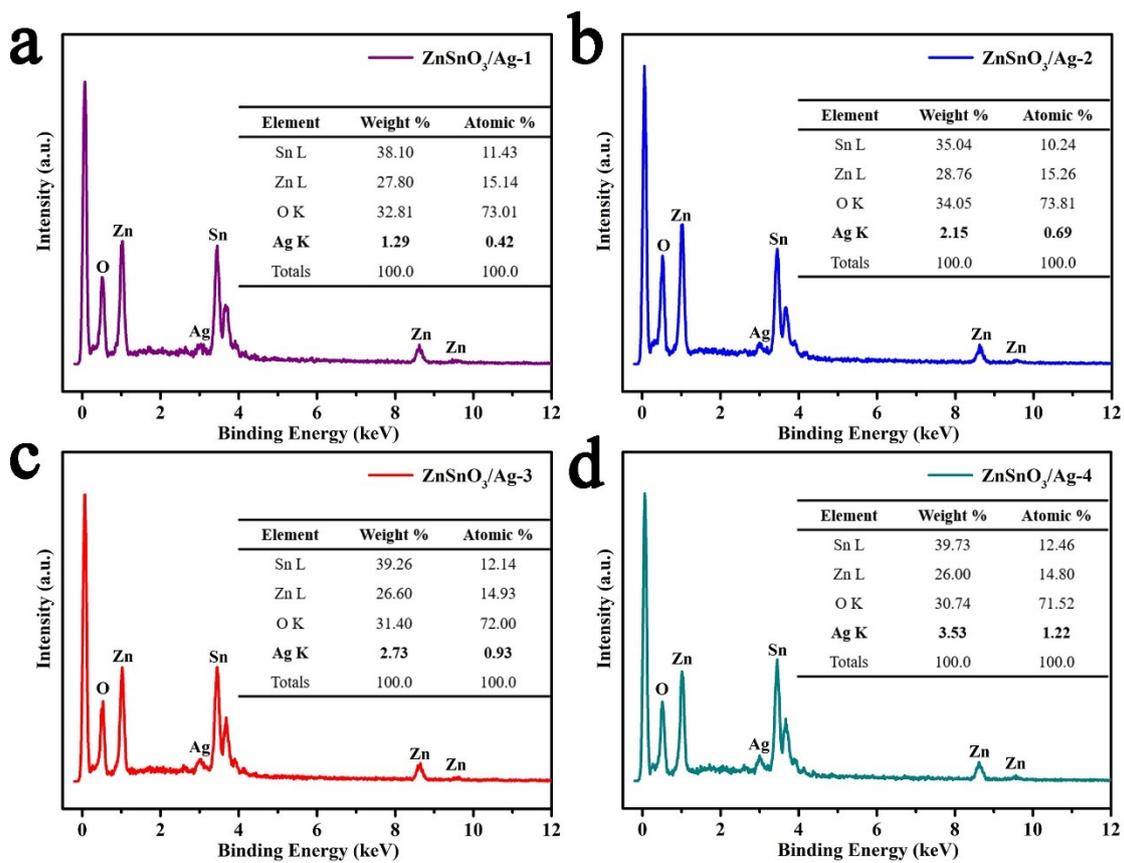


Fig. S4 EDS of  $\text{ZnSnO}_3/\text{Ag}$ .

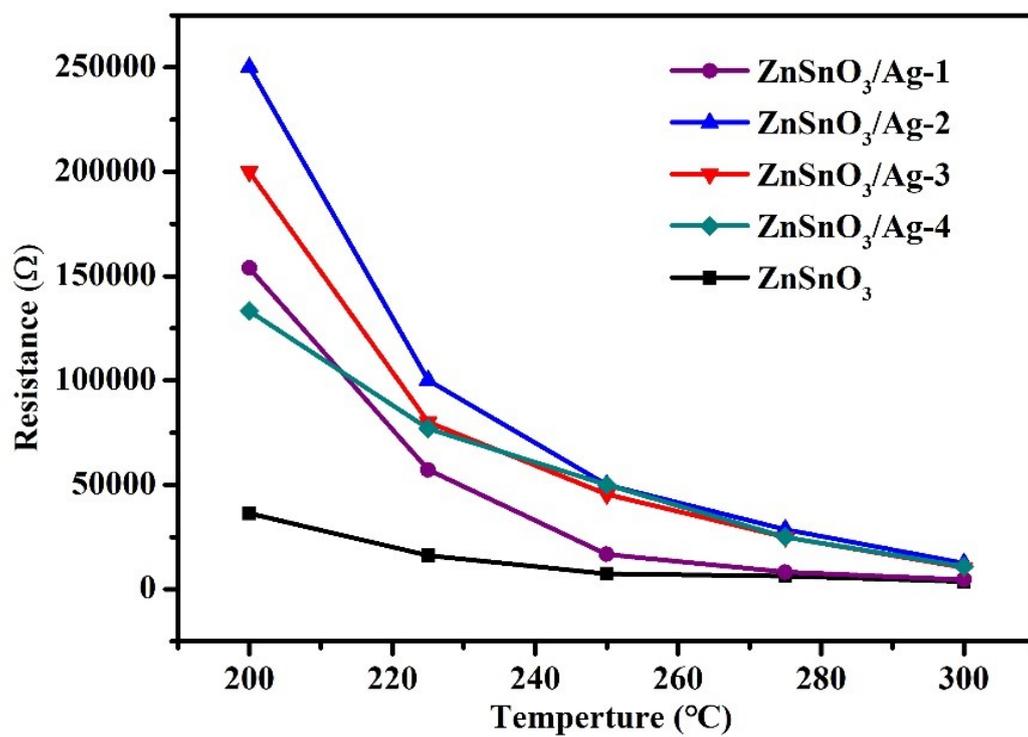
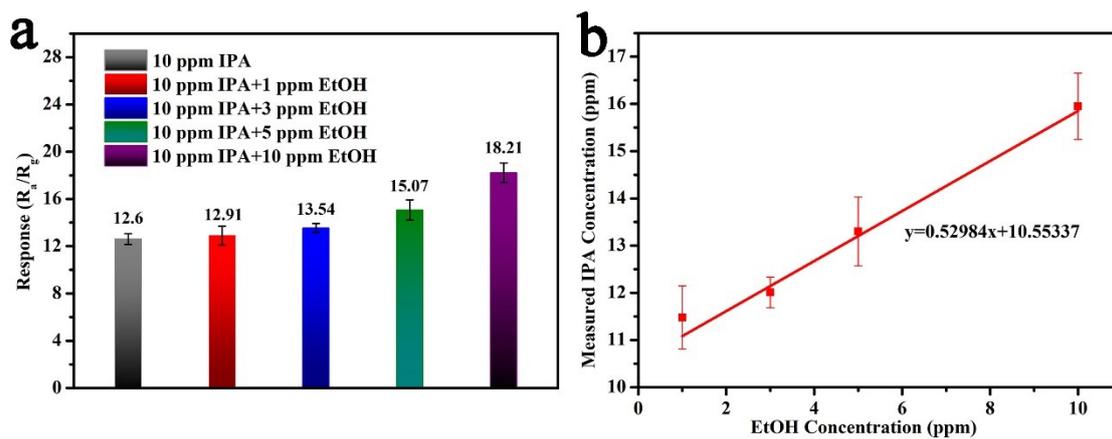


Fig. S5 Baseline resistance values of ZnSnO<sub>3</sub>/Ag and ZnSnO<sub>3</sub> sensors at different temperatures.



**Fig. S6** (a) Comparison of response to 10 ppm isopropanol in the presence of 1, 3, 5, 10 ppm ethanol at 250 °C for the ZnSnO<sub>3</sub>/Ag-3 sensor. (b) Measured isopropanol concentrations corresponding to the presence of different concentrations of ethanol.