

SUPPORTING INFORMATION

Near Room-Temperature, Fast-Response and Highly Sensitive Triethylamine Sensor Assembled with Au-Loaded ZnO/SnO₂ Core-Shell Nanorods on Flat Alumina Substrates

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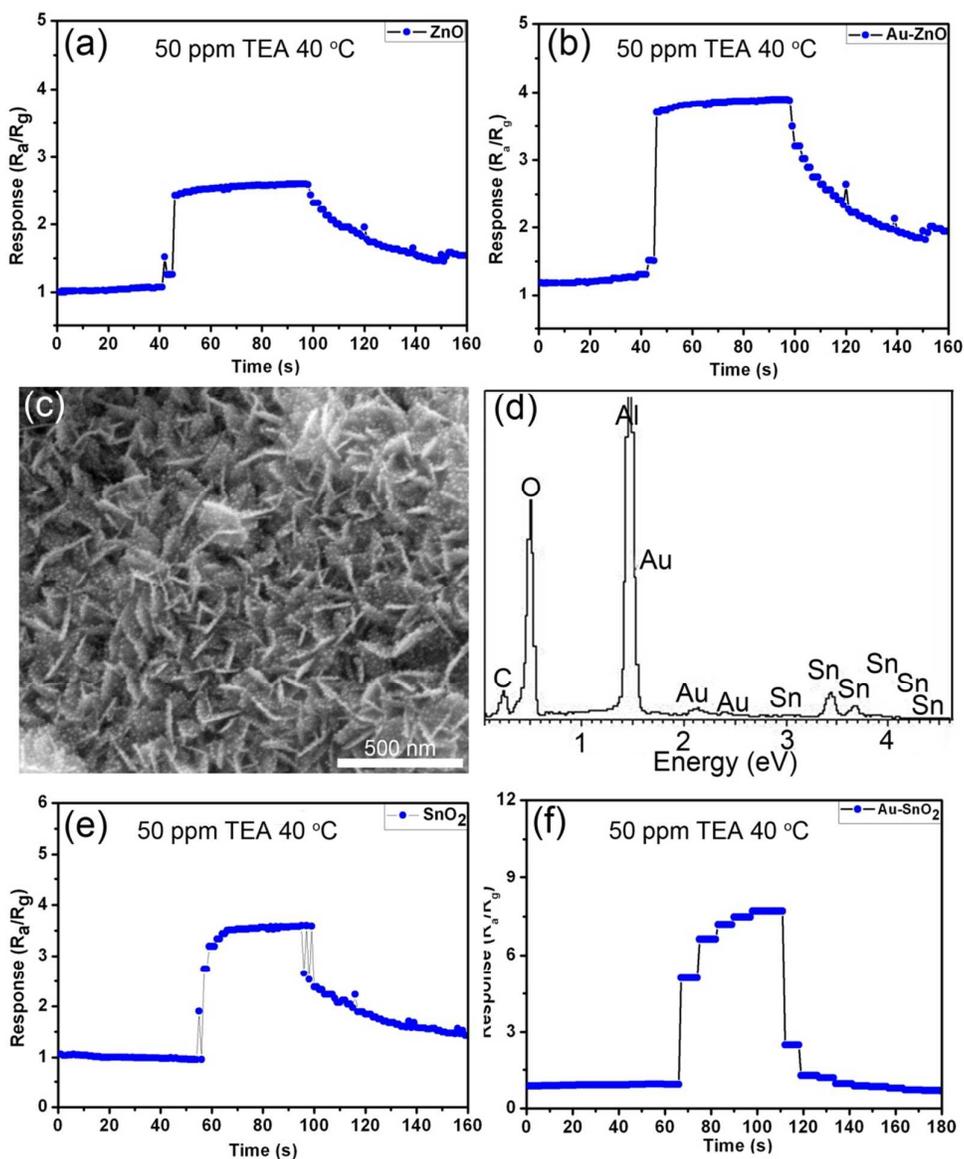


Figure S1. Response and recovery curve of three control sensors, (a) ZnO nanorod sensor; (b) Au-ZnO nanorod sensor; (c) SEM images of Au-SnO₂ nanosheets; (d) EDS spectrum of Au-SnO₂ nanosheets; (e) SnO₂ nanosheet sensor; (f) Au-SnO₂ nanosheet sensor.

The responses of three control ZnO, Au-ZnO and Au-SnO₂ sensors towards TEA gas were also investigated, as shown in Figure S1. With the similar hydrothermal protocol, the synthesis of SnO₂ nanorods was

difficult. But, SnO₂ nanosheets were synthesized by hydrothermal method and the SEM images of SnO₂ nanosheets is shown in Figure S1(c). The

response of pure ZnO or SnO₂ sensor to TEA gas is rather low. Au nanoparticles-loading can enhance their response. However, the response of Au-SnO₂/ZnO sensor is the highest, as shown in Table 1 and Figure 5-9.

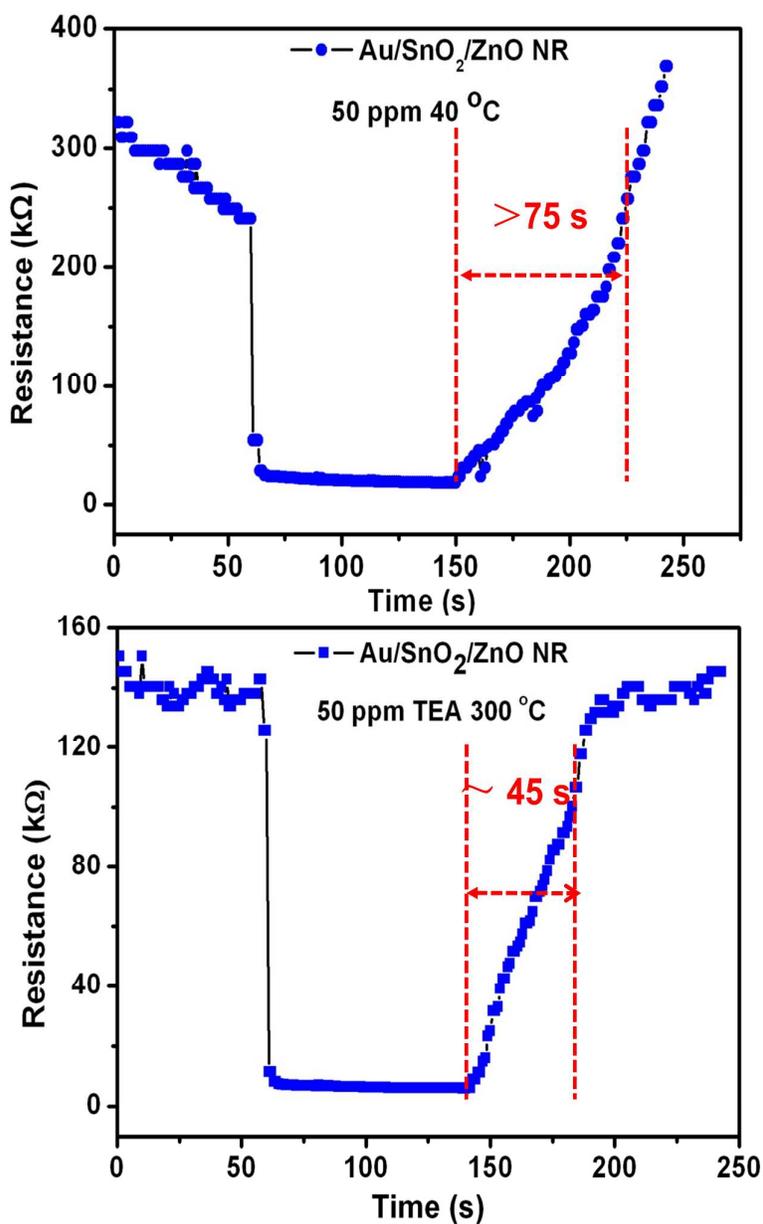


Figure S2. The response-recovery curves of the Au-SnO₂/ZnO nanorod sensor to 50 ppm TEA working at different temperature.

Figure S2 exhibits the response-recovery curves of the Au-SnO₂/ZnO nanorod sensor to 50 ppm TEA working at different temperature. It can be seen that the recovery time decrease clearly when the sensor worked at 300 °C.

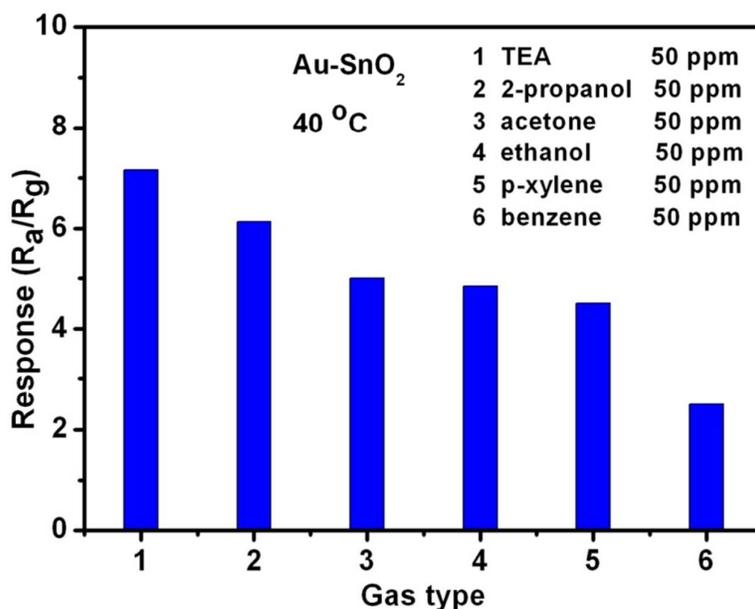


Figure S3. The selectivity of the Au-SnO₂ sensor towards different gases.

In order to further investigate the influence of Au nanoparticles on selectivity, we also measured the selectivity of Au-SnO₂ towards different gases, as shown in Figure S3. It can be seen clearly that there is a little difference of response among these gases, such as TEA, 2-propanol and acetone. But, the selectivity of Au-SnO₂/ZnO sensor in Figure 8 is more impressive.