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Supporting Information

SnO_2 nanorods based sensing material as an isopropanol vapor sensor

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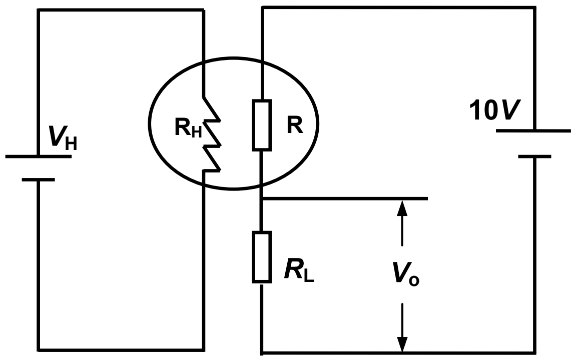


Scheme S1. Schematic diagram of testing principle for SnO_2 nanorods gas sensors. V_H is heating voltage and R_H is heating resistance.

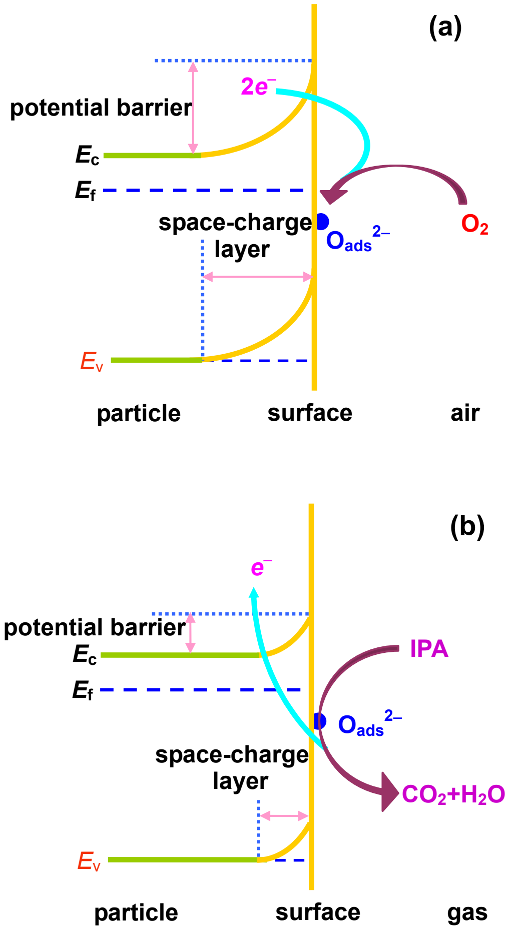
According to Scheme S1, the electrical resistance of sensor can be obtained as following:

$$R = \frac{10 - V_o}{V_o} \cdot R_L$$

where R is the resistance of the sensor, R_L is a constant load resistance unchanged with the surrounding gas partial pressure, V_o is the sensor export voltage. The gas response β was defined as the ratio of the electrical resistance in air (R_o) to that in gases (R_g):

$$R_o = \frac{10 - (V_o)_{air}}{(V_o)_{air}} \cdot R_L , \qquad R_g = \frac{10 - (V_o)_g}{(V_o)_g} \cdot R_L , \qquad \beta = \frac{R_o}{R_g}$$

where $(V_o)_{air}$ is the export voltage in air, and $(V_o)_{gas}$ is in gases.



Scheme S2. A schematic diagram of the proposed reaction mechanism of porous SnO_2 nanorods based sensor to IPA. (a) in dry air, (b) in IPA.

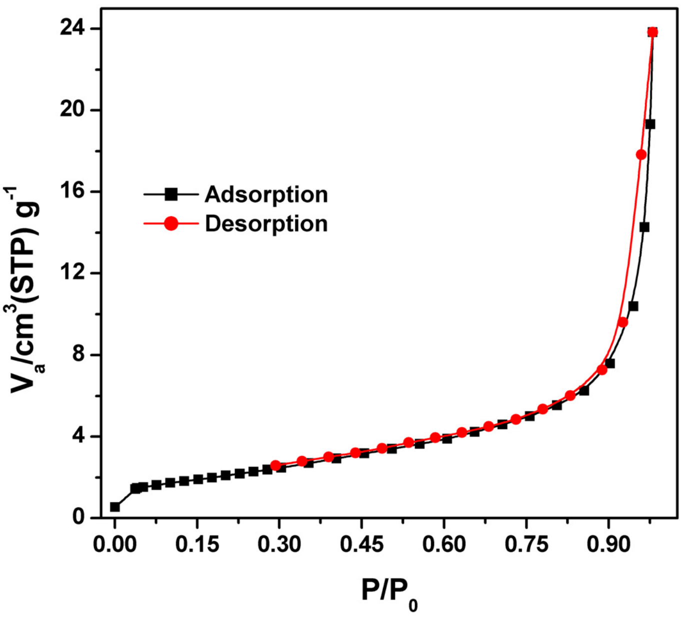


Figure S1 Nitrogen adsorption/desorption isotherm of SnO_2 nanorods