

Supporting Information
for
“Porous SnO₂ nanospheres as sensitive gas sensors for volatile
organic compounds detection”

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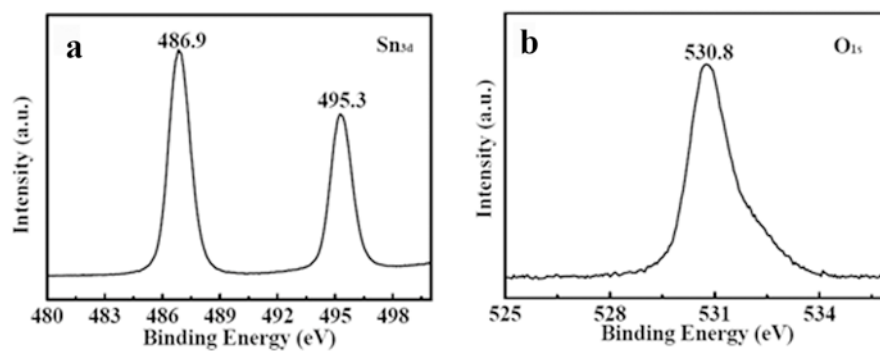


Fig. S1 XPS spectra of (a) Sn_{3d} and (b) O_{1s} of the porous SnO₂ nanospheres.

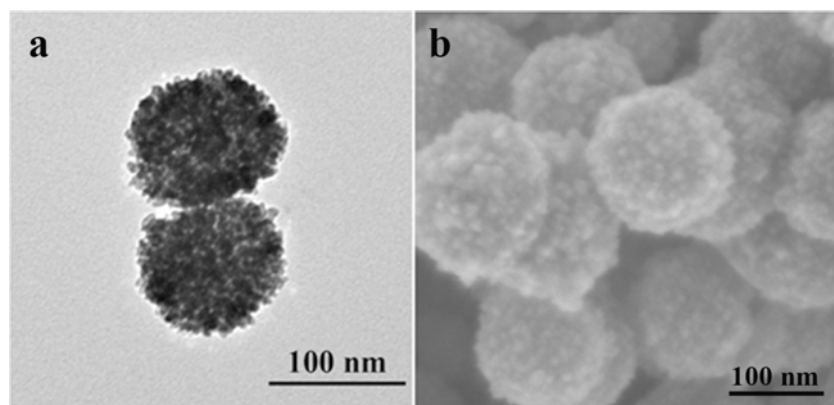


Fig. S2 (a) TEM and (b) SEM images of porous SnO_2 nanospheres after thermal treatment for 3 days at 300 °C.

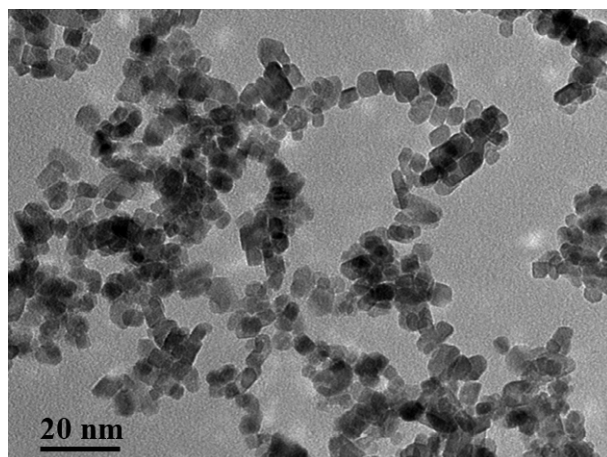


Fig. S3 TEM image of SnO₂ nanoparticles.

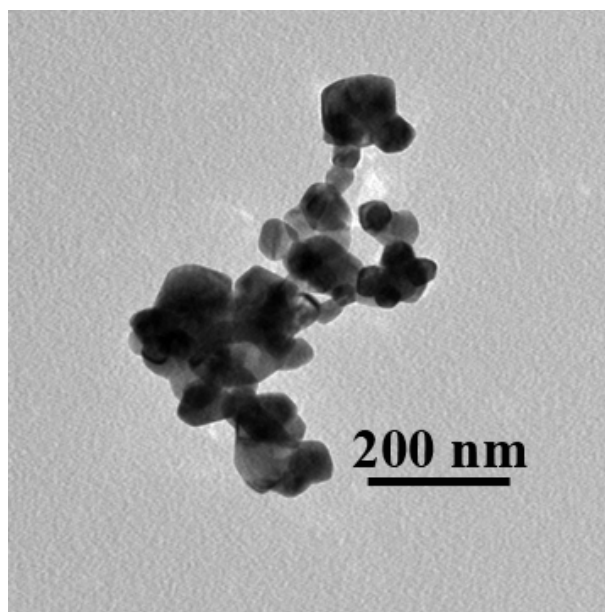


Fig. S4 TEM image of the SnO₂ commercial powders.

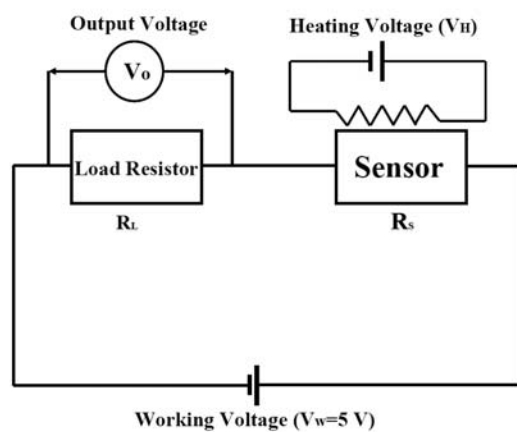


Fig. S5 Schematic diagram of the electrical circuit in the China HW-30A gas sensitivity instrument.

Table 1. The comparison on the SnO₂ nanomaterials sensing to VOCs vapor with some other reports.

SnO ₂ Sensing Materials	VOCs Sample	Operating Temperature (°C)	VOCs lowest Concentrations (ppm)	Response Time (s)	Recovery Time (s)	Ref.
Hollow nanospheres	HCHO/2-Chloroethanol	260	0.5	13/15	14/17	This work
Hierarchical SnO ₂	Ethanol / HCHO	170/210	5/1	—	—	[1]
Biomorphic SnO ₂	Ethanol	170	1	11	31	[2]
Nanoplates	Ethanol	350	1.5	—	—	[3]
Nanoparticles	Ethanol	220	1.7	18	44	[4]
Nanowires	Acetone	290	20	7	10	[5]
Nanorods	Ethanol	300	10	1	1	[6]
Microspheres	Ethanol	260	10	16	23	[7]
SnO ₂ spheres	Ethanol	400	10	1	—	[8]

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