Electronic Supplementary Information

Electron Compensation in p-type 3DOM NiO by Sn Doping for Enhanced Formaldehyde Sensing Performance

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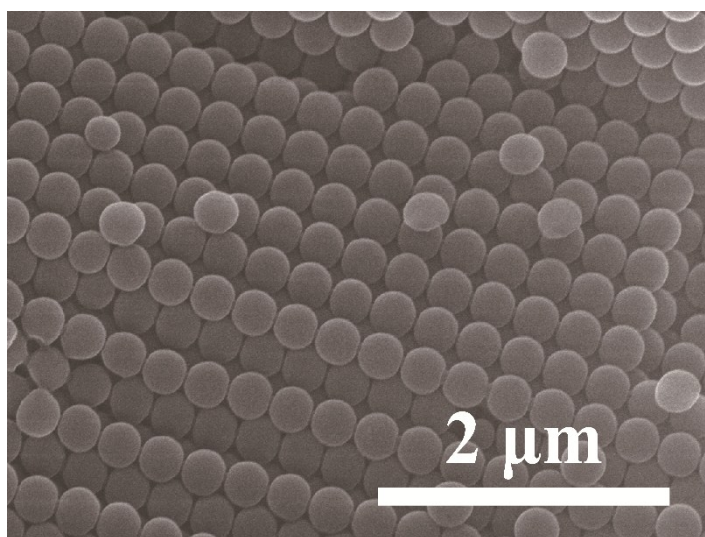
Technology, Beijing 100029, China

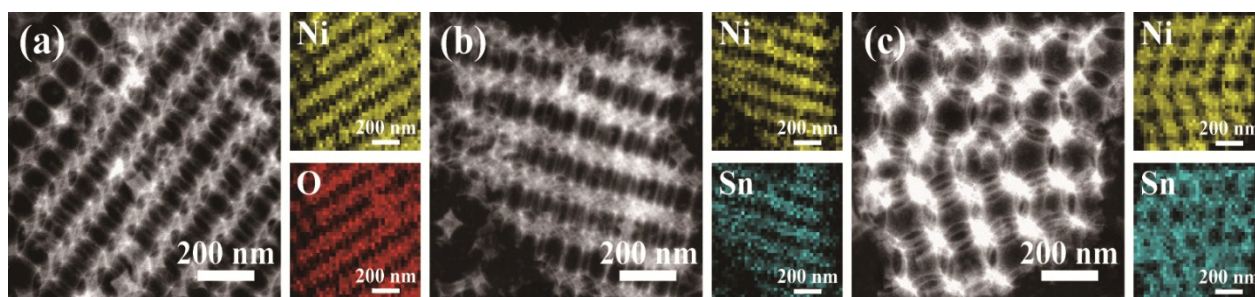**Fig.S1** SEM of well-arrayed template PMMA microspheres.

Fig.S2 Elemental mappings of the 3DOM samples obtained by STEM–EDS: (a) images of NiO; (b) images of NiO/4%Sn; and (c) images of NiO/10%Sn.
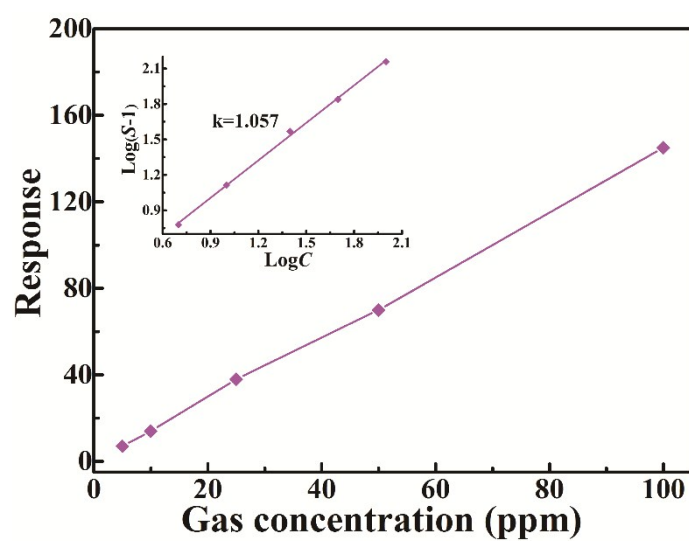

Fig.S3 Response of 3DOM NiO/10%Sn to HCHO concentration at the optimum working temperature (225 °C), inset: the corresponding log $(S-1)$ versus log C_g curves.
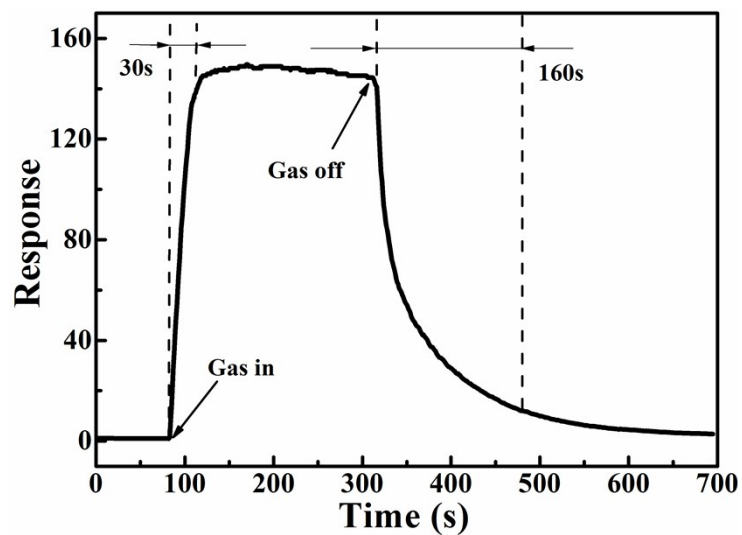
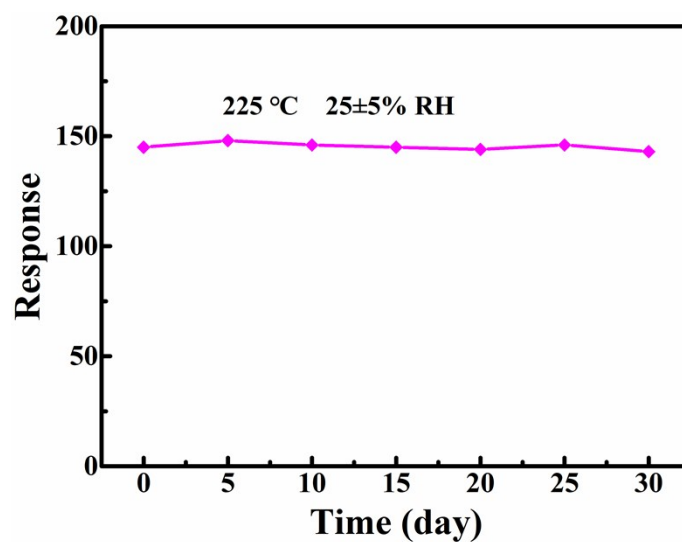**Fig.S4** Gas response-recovery curves of the 3DOM NiO/10%Sn.

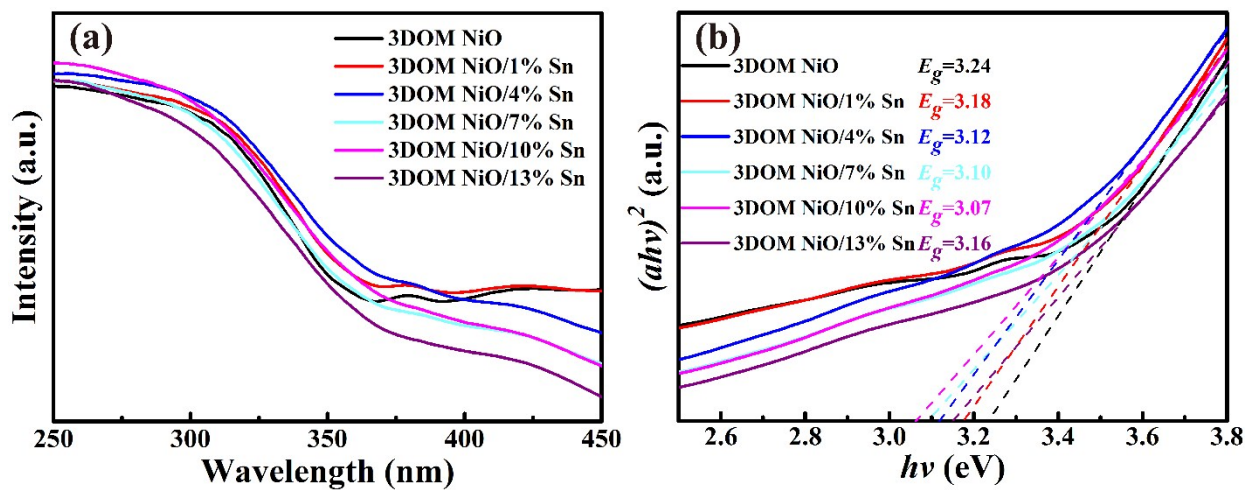**Fig.S5** Sensing stability of 3DOM NiO/10%Sn for nearly one month.

Fig.S6 The diffuse reflectance spectra and (b) the plots of *(ahv)²* versus photon energy *hv* of the 3DOM samples.