Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supporting information

Humidity-Tolerant NO_2 Sensor Based on Ag_3PO_4-$SnSe_2$ Heterostructures

Juanyuan Hao[a*], Wen Lu[a], Dongmin Yin[a], Weixun Hao[b], You Wang[a*]

[a] *School of Materials Science and Engineering, Harbin Institute of Technology, Harbin 150001, P. R. China. E-mail: jyhao@hit.edu.cn and y-wang@hit.edu.cn.*

[b] *State Key Laboratory of Efficient and Clean Coal-fired Utility Boilers, Harbin Boiler Company Limited, Harbin 150046, P. R. China.*

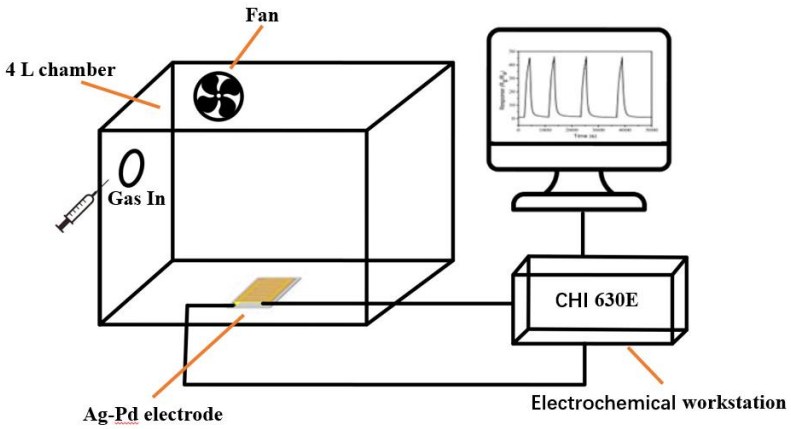

Fig. S1. Schematic diagram of the sensor measurement.

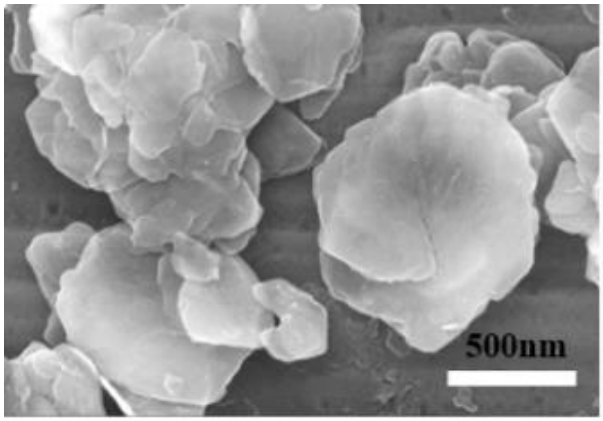

Fig. S2. SEM image of pristine $SnSe_2$ nanosheets.

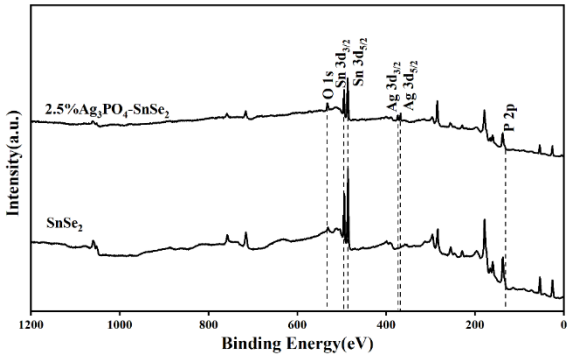

Fig. S3. The full XPS survey spectra of pure $SnSe_2$ and 2.5%Ag_3PO_4-$SnSe_2$.

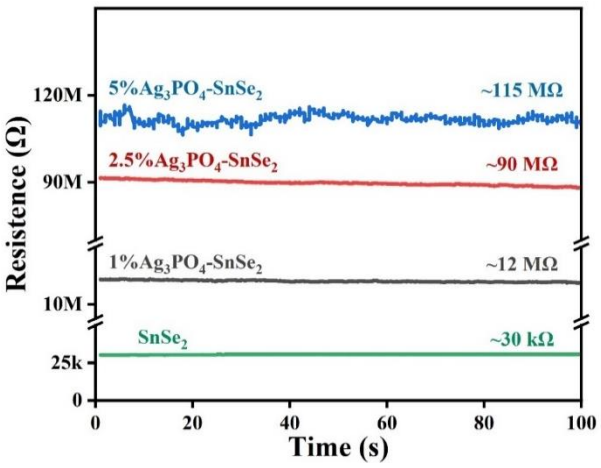

Fig. S4. Resistances of the films of pure $SnSe_2$ and Ag_3PO_4-$SnSe_2$ heterostructures.

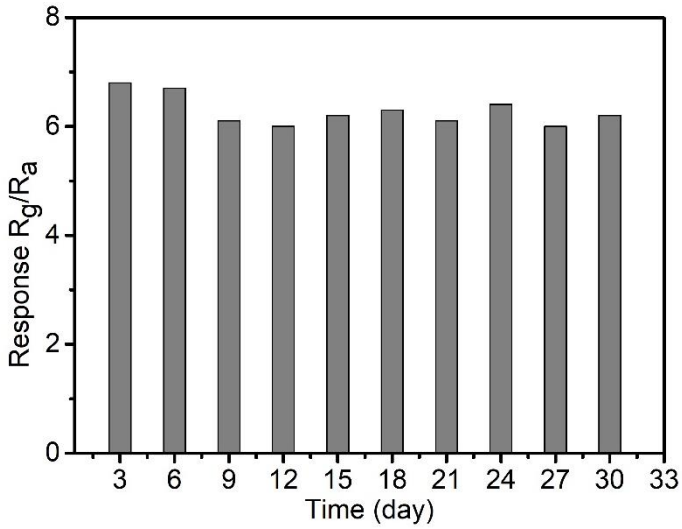

Fig. S5. Long-term stability test toward 5 ppm NO_2 for 1 month.

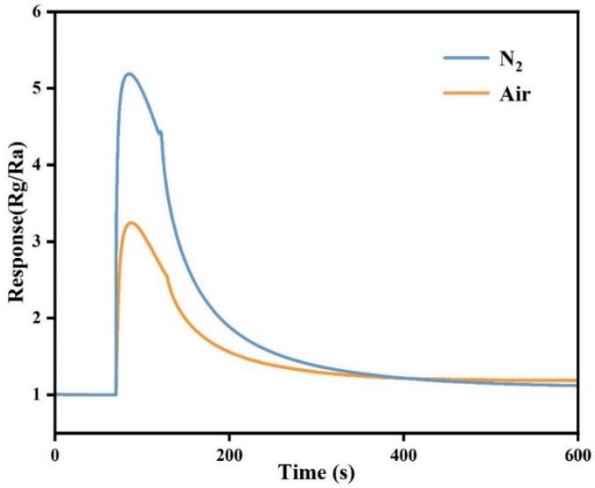

Fig. S6. The sensing response curve of the 2.5% Ag_3PO_4-$SnSe_2$ sensor towards 5 ppm NO_2 with air and N_2 as the background gases.