

## Supporting information

**Table S1.** Comparison of gas-sensing characteristics and response time of disordered porous SnO<sub>2</sub> matrix material and CuO/SnO<sub>2</sub> aerogel composite material.

NO <sub>x</sub> conc. (ppm) →	100	50	30	10	5	3	2	1	100	50	30	10	5	3	2	1
	Response (%)								Response Time (s)							
Disordered porous SnO <sub>2</sub> material	54	52	50	44	40	-	-	-	19.5	21	25	25.5	26	-	-	-
Disordered porous CuO/SnO <sub>2</sub> aerogel composite material	74	67	66	64.8	47	40.7	23	15	7	8	8	8	16	24	25	26

**Table S2.** Comparison of gas-sensing characteristics of disordered porous CuO/SnO<sub>2</sub> sensor towards the different gas.

Gas Conc.(ppm)→	100	50	30	20	10	5	3	2	1
	Response (%)								
NO <sub>x</sub>	74	67	66	65	64.8	47	40.7	23	15
NH <sub>3</sub>	51	44	38	29	28	27	26	20	0
H <sub>2</sub>	0	0	0	0	0	0	0	0	0
O <sub>2</sub>	0	0	0	0	0	0	0	0	0
N <sub>2</sub>	0	0	0	0	0	0	0	0	0