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Facile synthesis of $CaO-SnO_2$ nanocrystalline composites rods by electrospinning method with enhanced gas sensitive performance at room temperature

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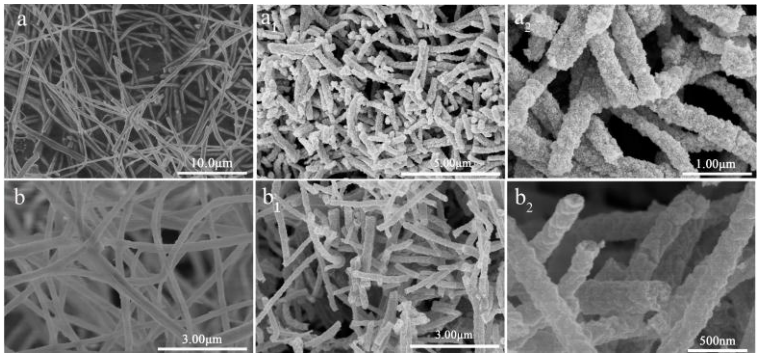

Fig. S1 SEM images of $CaO-SnO_2$ composites nanorods with different atomic ratios (a~a_2: Sn:Ca=100:4; b~b_2: Sn:Ca=100:8;)(a and b The fibers before calcination; a_1, a_2, b_1 and b_2 The fibers after calcination at 600°C for 5 h)

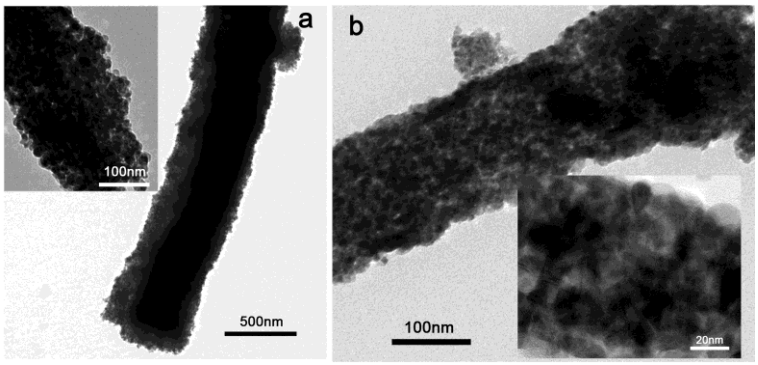

Fig. S2 TEM images of $CaO-SnO_2$ composites nanorods with different atomic ratios a) Sn:Ca=100:4; b) Sn:Ca=100:8.

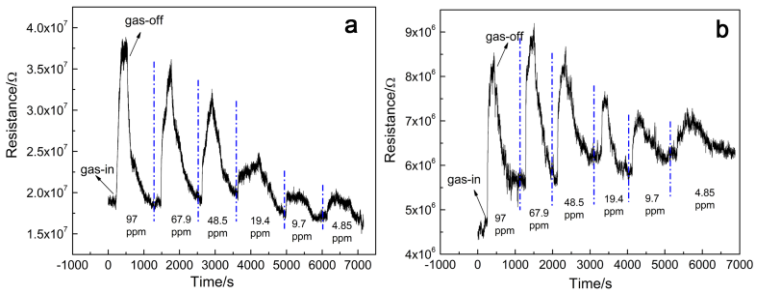

Fig. S3 Dynamic response-recovery curves of $CaO\text{-}SnO_2$ composites nanorods with different atomic ratios to 97 ppm-9.7 ppb NO_x at room temperature in air. a) Sn:Ca=100:4; b) Sn:Ca=100:8. (temperature 22 ℃; humidity 42 %)

Table S1 Comparison of the response-recovery results of $CaO\text{-}SnO_2$ composites nanorods with different atomic ratios to NO_x (temperature 22 ^oC; humidity 42 %)

Volume concentration	97 ppm	69.7 ppm	48.5 ppm	19.4 ppm	9.7 ppm	4.85 ppm	1.94 ppm	0.97 ppm	485 ppb	194 ppb	97 ppb	4.85 ppb	19.4 ppb	9.7 ppb
response (100:0)	3.49	2.31	1.92	1.08	0.66	0.39	0.24	0.19	----	----	----	----	----	----
response (100:2)	6.63	5.0	4.55	3.13	2.32	1.82	1.17	0.66	0.45	0.37	0.33	0.26	0.17	0.11
response (100:4)	1.00	0.84	0.62	0.22	0.13	0.12	----	----	----	----	----	----	----	----
response (100:8)	0.74	0.60	0.43	0.18	0.18	0.12	----	----	----	----	----	----	----	----

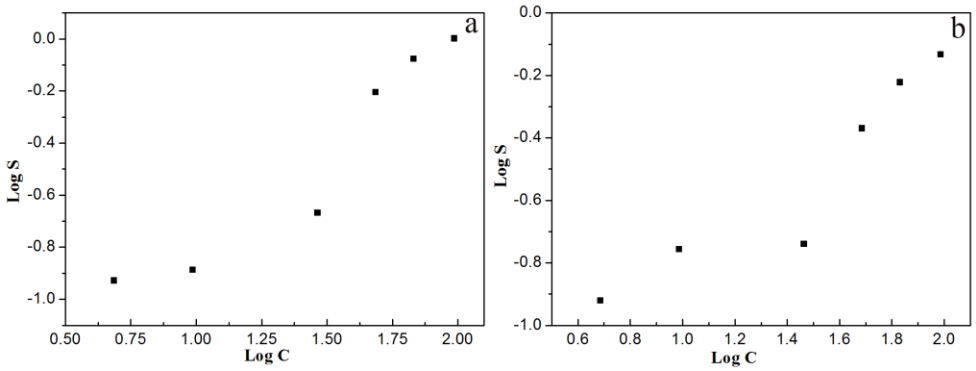

Fig. S4 NO_x calibration curve of the $CaO\text{-}SnO_2$ composites nanorods sensor.
(a: Sn:Ca=100:4; b: Sn:Ca=100:8)

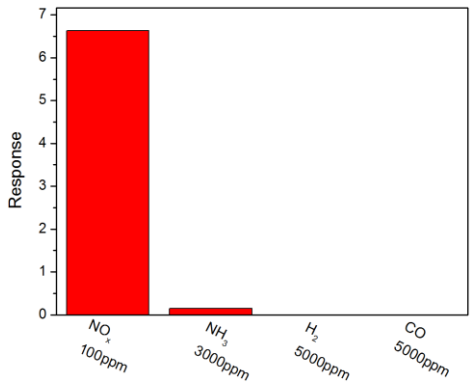

Fig. S5 The 2 at.% CaO-SnO_2 L-NRs with sensor response to various gases.