

Supporting Information

Microwave-solvothermal synthesis of mesoporous CeO_2/CNCs nanocomposite for room temperature NO_2 detection

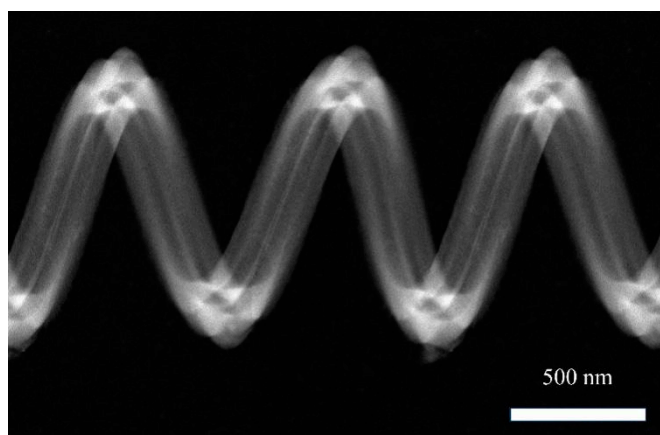


Figure S1. TEM image of CNCs

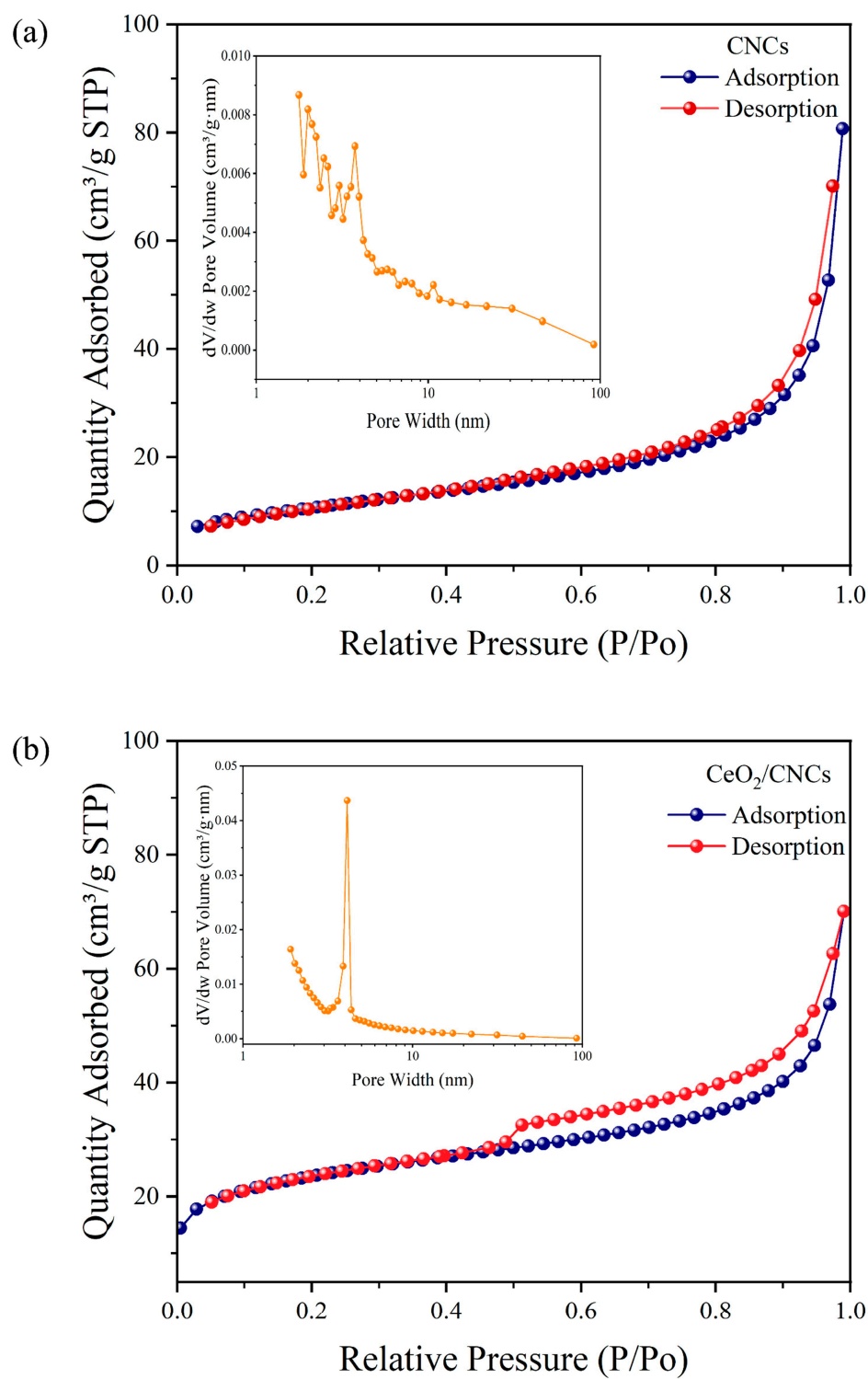


Figure S2. The N₂ adsorption and desorption isotherms and pore size distribution (the inset) curve of bare CNCs (a) and (b) CeO₂/CNCs nanocomposite

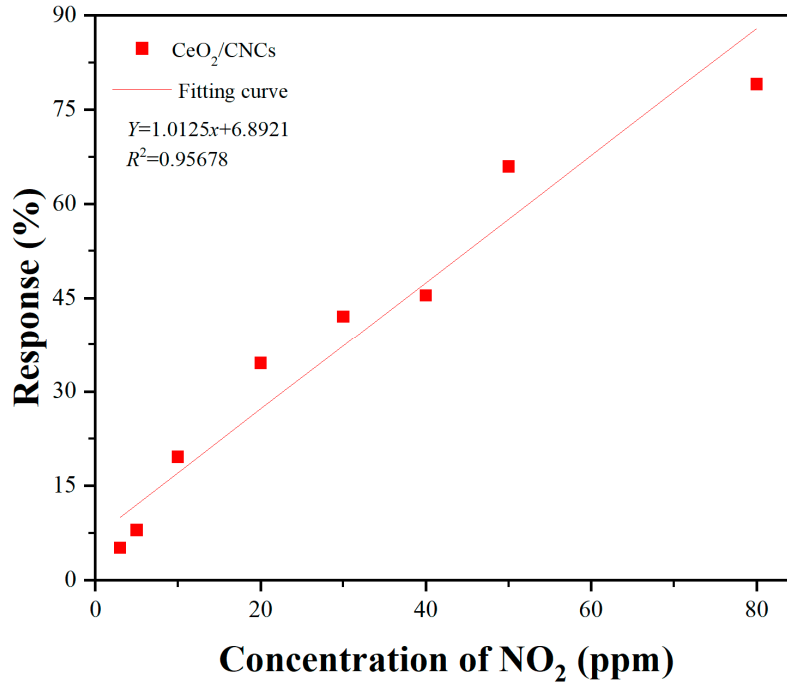


Figure S3. Fitting curve of the CeO₂/CNCs composites

The process of calculation of noise level (RMS_{Noise}) and limit of detection (LOD):^[S1]

$$RMS_{Noise} (ppm^{-1}) = \sqrt{V_x^2 / n} \quad \text{where} \quad V_x^2 = \sum (Y_i - \bar{Y})^2 \quad (1)$$

$$Limit\ of\ detection\ (ppm) = 3 \times \frac{RMS_{Noise}}{Slope} \quad (2)$$

[S1] Duy, L. T.; Kim, D. J.; Trung, T. Q.; Dang, V. Q.; Kim, B. Y.; Moon, H. K.; Lee, N. E. High Performance Three-Dimensional Chemical Sensor Platform Using Reduced Graphene Oxide Formed on High Aspect-Ratio Micro-Pillars. *Adv. Funct. Mater.* 2015, 25, 883–890.

Table S1. The ratios of cerium and oxygen of as-prepared samples.

Sample	O _{lat}	O _{vac}	O _{ads}	Ce ³⁺	Ce ⁴⁺
Sample 1	84.6	14.11	1.29	47.98	52.02
Sample 2	65.25	29.52	5.23	37.36	62.64
Sample 3	56.49	35.6	7.91	22.42	77.58
Sample 4	53.02	34.69	12.29	19.38	80.62