Supplementary Information for

Superior Gas-Sensing Performance of Amorphous CdO Nanoflake Arrays Prepared at Room Temperature

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Fig. S1. XPS survey spectrum of the a-NFAs.

Fig. S2. XPS narrow-scan spectrum showing the binding energies of Cd 3d.
Fig. S3. EELS spectrum of a-NFAs.

Fig. S4. (a) Mott–Schottky plot of CdO a-NFAs, (b) fitting of the linear region of the plot.
**Fig. S5.** Gas response of CdO NFAs to 200 ppm of DEE measured at different operating temperatures.

**Fig. S6.** Response of sensor with a-NFAs repeatedly exposed to DEE with concentration of 200 ppm.
Fig. S7. Effect of humidity on sensor’s performance. Response at different humidity values is shown.

Fig. S8. Sensing performance of amorphous CdO nanoparticles CBD-prepared on a rough surface. The target gas was 200 ppm of DEE.
Fig. S9  Extremely low response of sensor with a-NFAs to (a) isopropanol, (b) ethanol and (c) acetone.

Fig. S10  SEM images of (a) as-prepared a-NFAs and (b) a-NFAs after being heated for 24 h (at 175 °C) and tested for 12 h. (c) XRD patterns of the samples shown in (a) and (b).
Fig. S11  Long-term performance (base resistance and response) of the sensor over 30 cycles, each consisting of non-stop run for 8 h with 200 ppm DEE at 175 °C and 16 h of exposure to air.

Fig. S12  Response of sensor annealed at 275 °C to 200 ppm of (a) isopropanol, (b) ethanol and (c) DEE.
Fig. S13  Response of sensor annealed at 350 °C to 200 ppm of (a) isopropanol and (b) ethanol.

The operation temperature was 270 °C (optimum working temperature).