Supporting Information

Selective Detection of Ethylene by MoS$_2$–Carbon Nanotube Networks Coated with Cu(I)–Pincer Complexes

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**Figure S1.** Experimental setup for gas-sensing measurements using wireless MoS$_2$-SCNT-based sensors. The masses of each fruit tested are as follows: bananas (1.09 kg), apples (1.2 kg), tomatoes (1.08 kg), oranges (1.19 kg), and strawberries (1.08 kg).

**Figure S2.** Functional block diagram and image of wireless ethylene sensor.
Figure S3. (a) Dynamic response curves of 2-MoS$_2$ to 10 ppm of ethylene (b) Electrical noise measurements of 2-MoS$_2$, MoS$_2$–SCNT, 1-MoS$_2$–SCNT, 2-MoS$_2$–SCNT during nitrogen exposure.

Figure S4. Real-time response to ethylene (C2; 10 ppm) by 2-MoS$_2$–SCNT using different carrier gases (N$_2$ and air).
**Figure S5.** Long-term stability of the 2-MoS$_2$-SCNT sensor, with exposure to 1 ppm ethylene for 5 minutes every two days over one month. Data points represent steady-state $-\Delta G/G_0$ values.

![Graph showing long-term stability of the 2-MoS$_2$-SCNT sensor](image)

(a) (b)

**Figure S6.** Atomic force microscopy (AFM) images of MoS$_2$–SCNT dropcast onto Si: (a) $R_{\text{max}} = 205$ nm; (b) $R_{\text{max}} = 392$ nm.

![AFM images of MoS$_2$–SCNT dropcast onto Si](image)