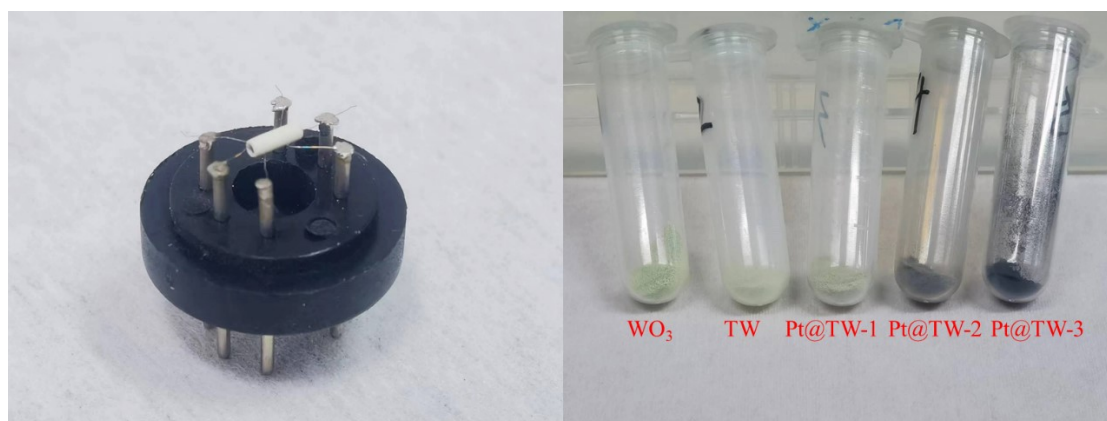


## Supplementary Information

# Enhanced performance NH<sub>3</sub> gas sensor for room temperature detection based on WO<sub>3</sub>/TiO<sub>2</sub> nanocrystals decorated with Pt NPs

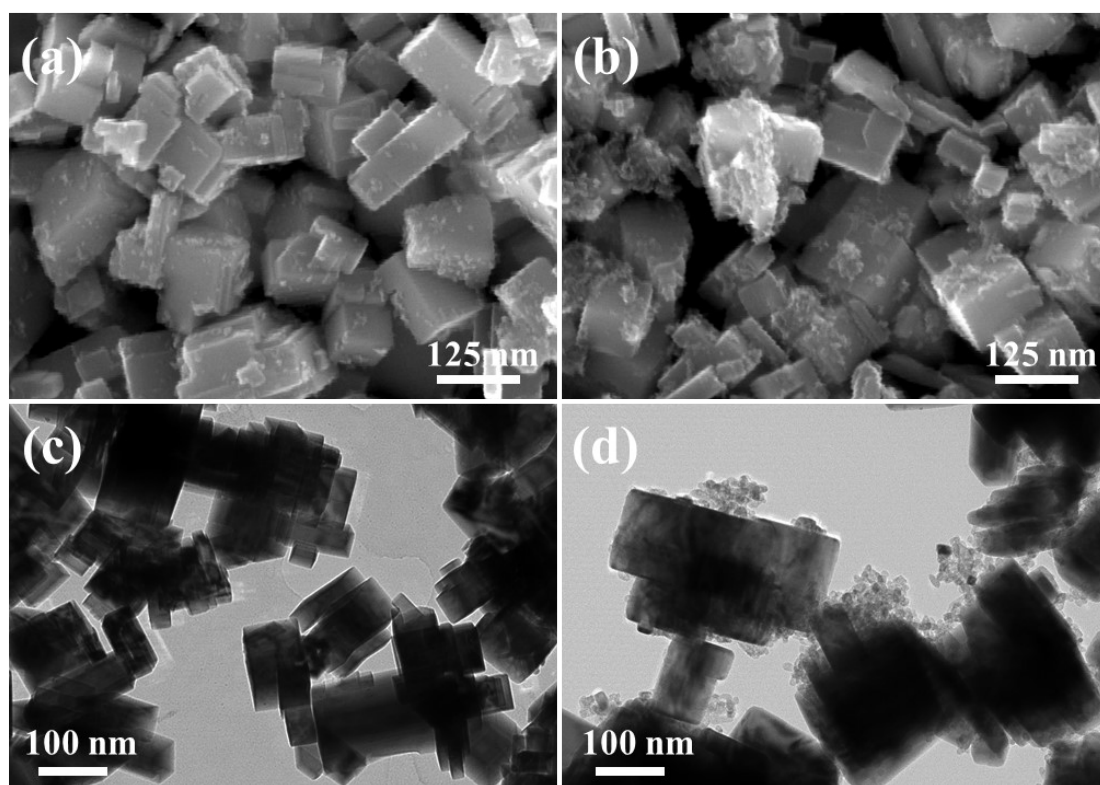
*Zhixuan Wu, Zhengai Chen, Zhixiang Deng, Ning Dai, Yan Sun\* and Meiyong Ge\**

**Figure S1:**



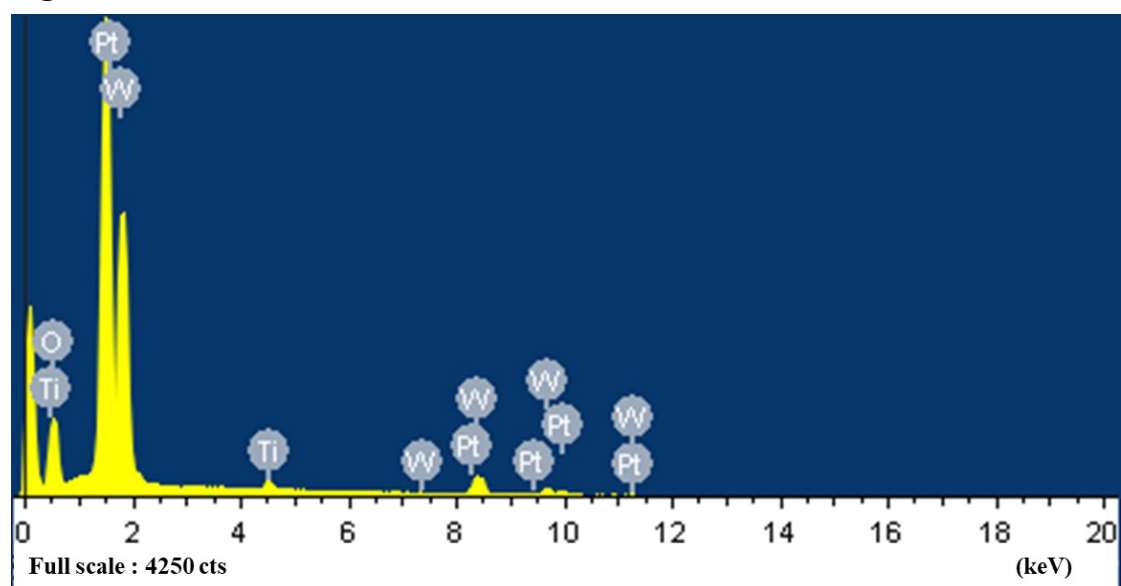
**Fig. S1.** Physical photos of (a) gas-sensitive testing element, (b) all material samples

**Figure S2:**



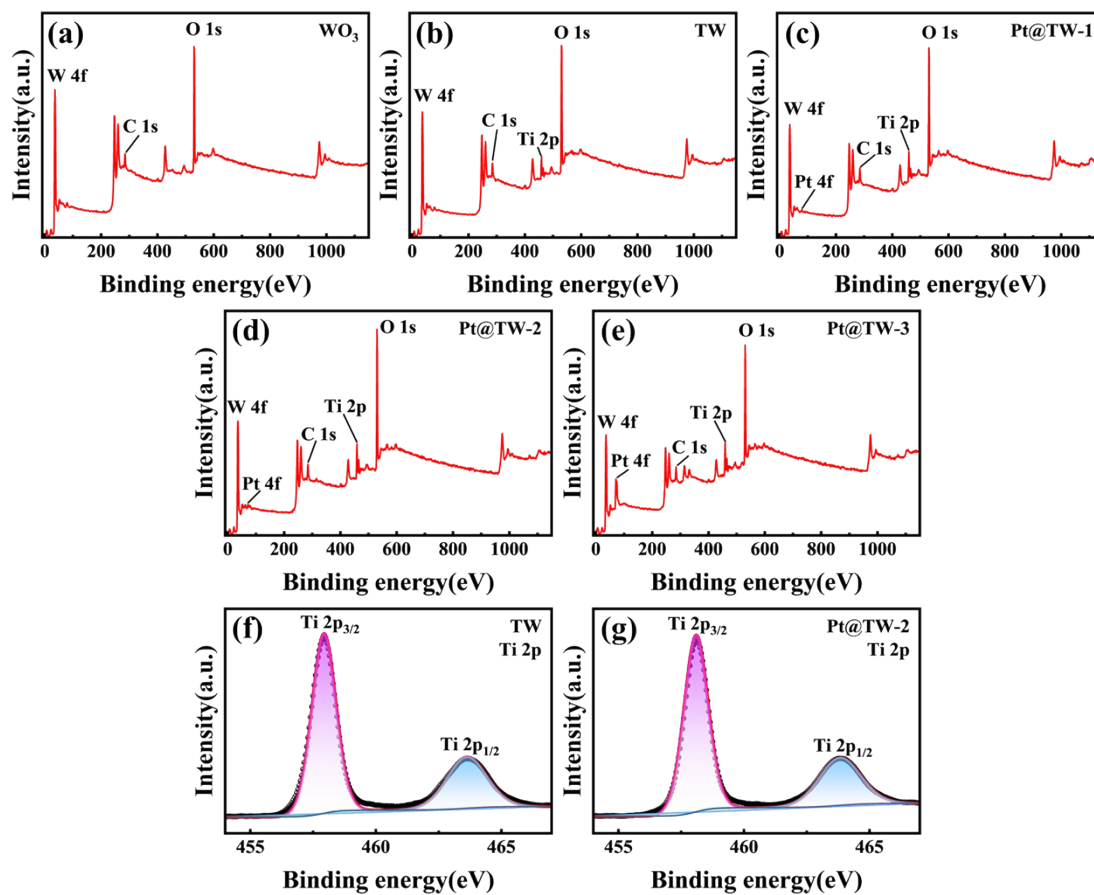
**Fig. S2.** SEM images of (a) Pt@TW-1 and (b) Pt@TW-3 samples. TEM images of (c) WO<sub>3</sub> and (d) TW samples.

**Figure S3:**



**Fig. S3.** The energy-dispersive spectroscopy (EDS) spectra for Pt@TW-2 sample.

**Figure S4:**



**Fig. S4.** The comprehensive X-ray photoelectron spectroscopy survey(XPS) spectrum of (a) WO<sub>3</sub>, (b) TW, (c) Pt@TW-1, (d) Pt@TW-2 and (e) Pt@TW-3. XPS spectra of W 4f for (f) TW and (g) Pt@TW-2.

Figure S5:

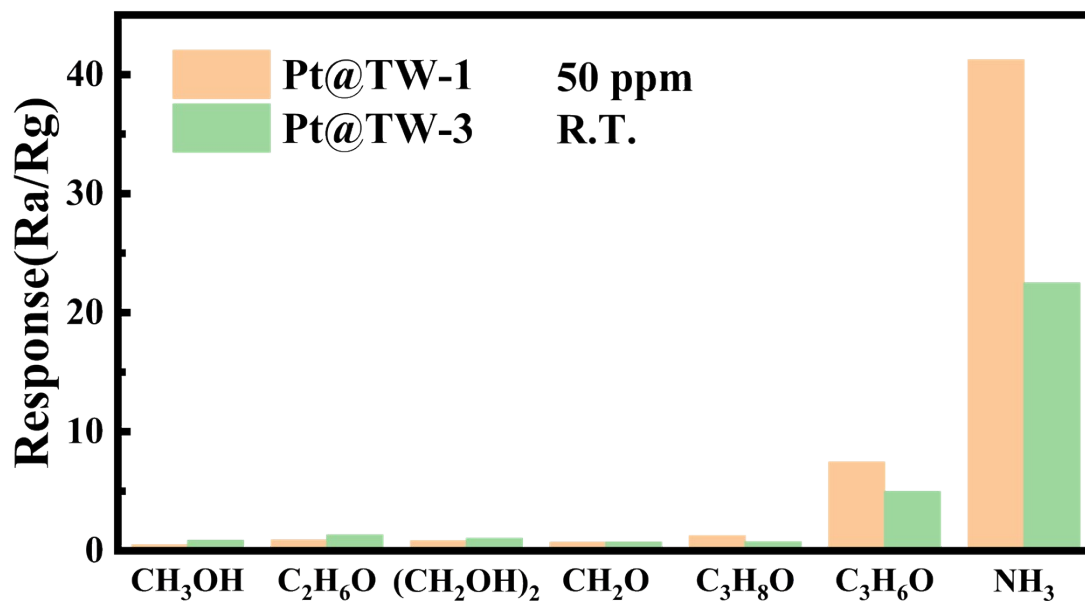


Fig. S5. The selectivity test results for Pt@TW-1 and Pt@TW-3 samples.