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Supplementary Information

Nano Pt-decorated Transparent Solution-processed Oxide Semiconductor Sensor with ppm Detection Capability

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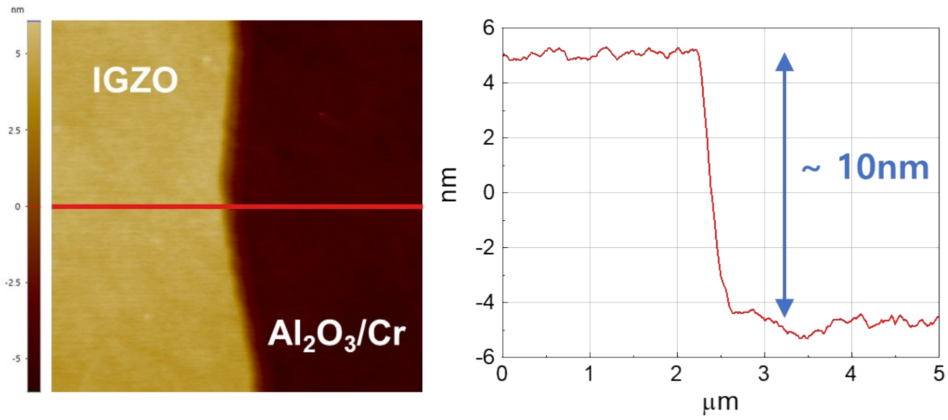


Fig. S1 The AFM image and its line profile for the IGZO film, which demonstrate the thickness of the sensing layer is about 10 nm.

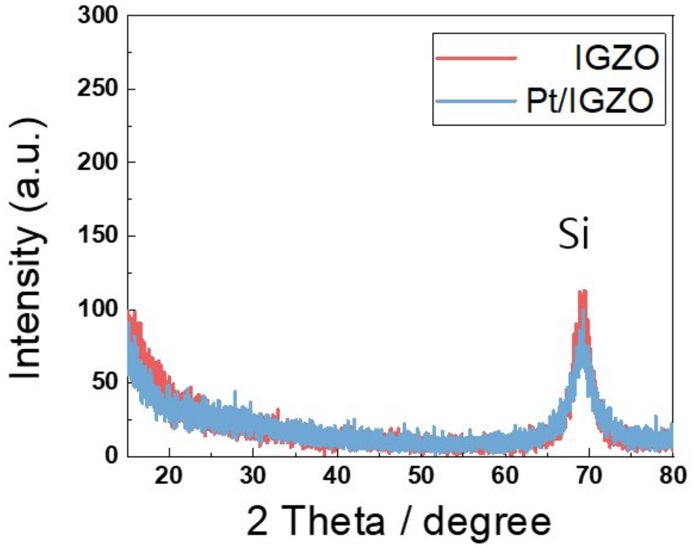


Fig. S2 The XRD spectrum of the pristine IGZO (red solid line) and Pt decorated IGZO (blue solid line). The solution processed IGZO film shows an amorphous phase after a thermal annealing process at 350 °C for 1 hr. There are no peaks related to crystalline formation or Pt

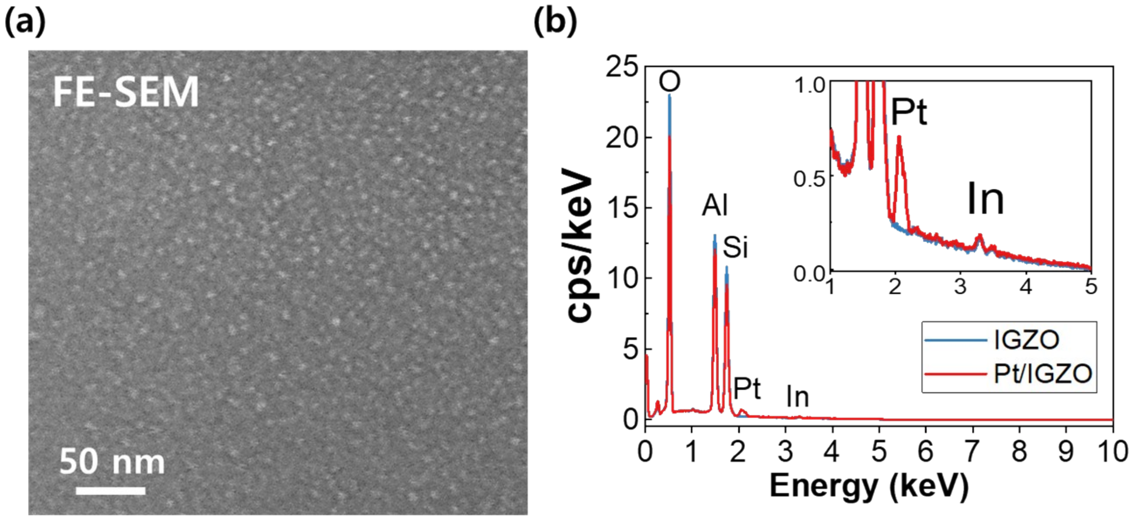
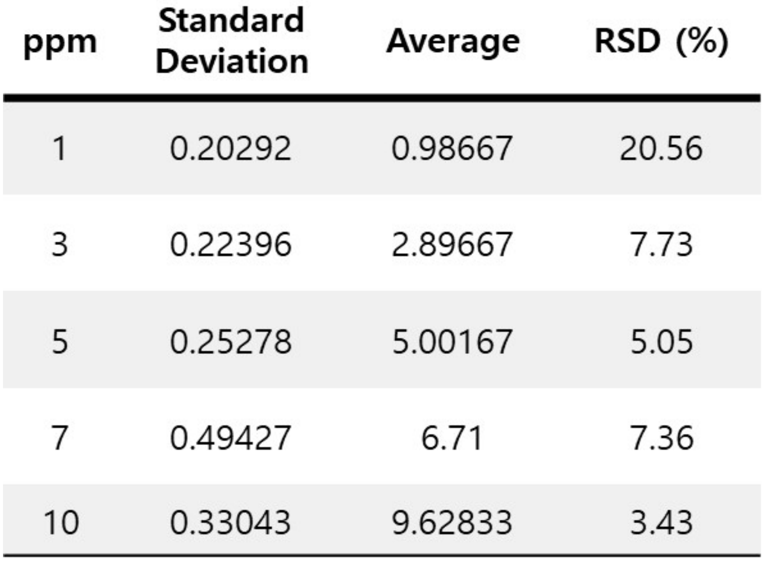


Fig. S3 (a) FE-SEM image of the Pt/IGZO film shows Pt grains. (b) EDS spectrum of the pristine IGZO (blue solid line) and Pt/IGZO (red solid line). The presence of Pt is clearly observed in Pt/IGZO film.



ppm	Standard Deviation	Average	RSD (%)
1	0.20292	0.98667	20.56
3	0.22396	2.89667	7.73
5	0.25278	5.00167	5.05
7	0.49427	6.71	7.36
10	0.33043	9.62833	3.43

Table S1 Summary of the standard deviation, average, and relative standard deviation (RSD). 60 points were recorded for each concentration of isobutylene from the display of the VOC monitoring system. [RSD= (standard deviation / average) ×100]