## **Electronic Supplementary Information**

## The effect of noble metal (Au, Pd, Pt) nanoparticles on the gas sensing performance of $SnO_2$ -based sensors: a case study on the $\{221\}$ high-index faceted $SnO_2$ octahedra

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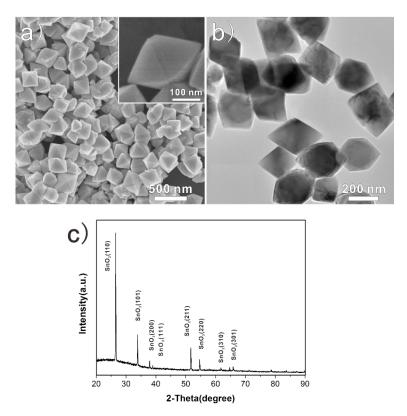


Fig. S1 (a) SEM image, (b) TEM image and (c) XRD patterns of  $\{221\}$  faceted SnO<sub>2</sub> octahedral NCs.

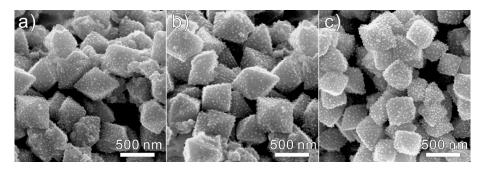


Fig. S2 SEM images of  $SnO_2/Au$ , (b)  $SnO_2/Pd$ , and (c)  $SnO_2/Pt$ .

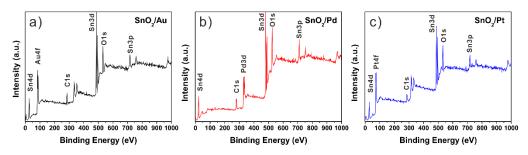


Fig. S3 XPS survey spectra of (a)  $SnO_2/Au$ , (b)  $SnO_2/Pd$ , and (c)  $SnO_2/Pt$ .