Supporting information

NH_3 sensor based on 3D hierarchical flower-shaped *n*-ZnO/*p*-NiO heterostructures yields outstanding sensing capabilities at ppb level

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S1: Gas response of the Zn_1Ni_5 under different working temperatures

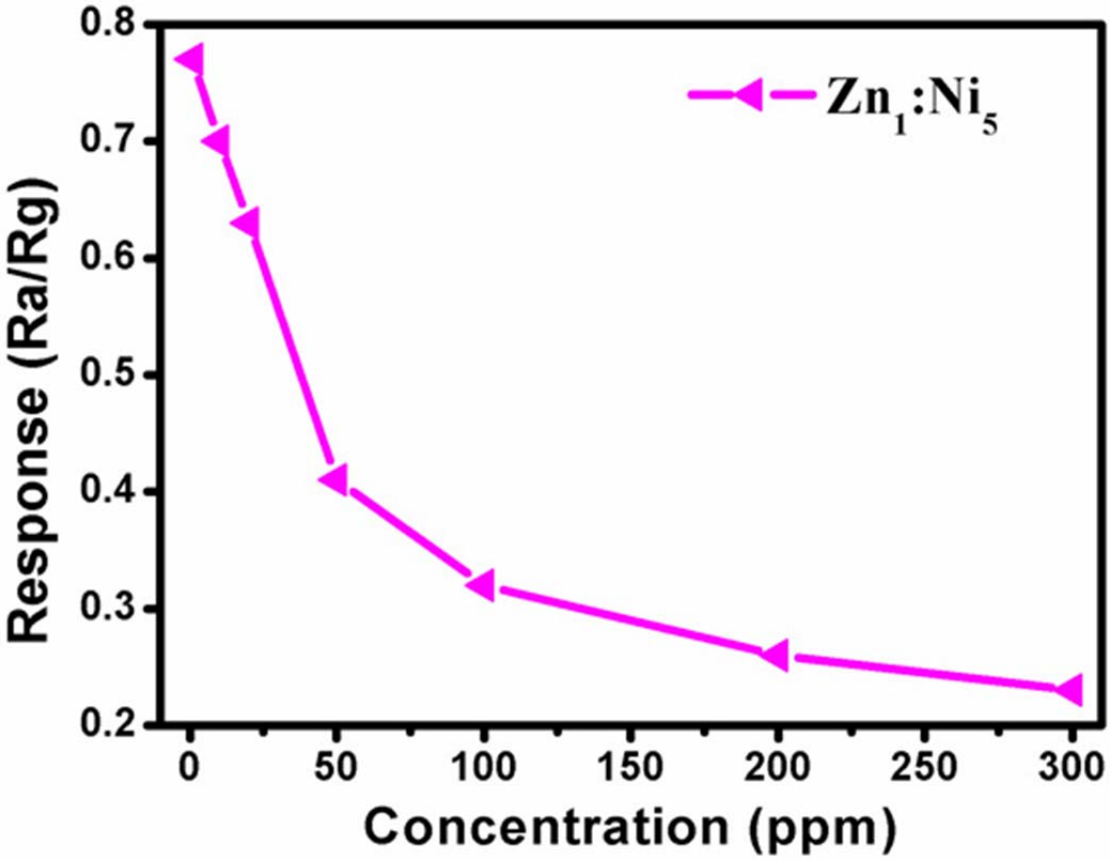

Figure. S1 Gas response of the Zn_1Ni_5 toward 200 ppm NH_3 under the different working temperatures.

S2: Dynamic response of the Zn_1Ni_5 in presence of 1-300 ppm concentrations of NH_3

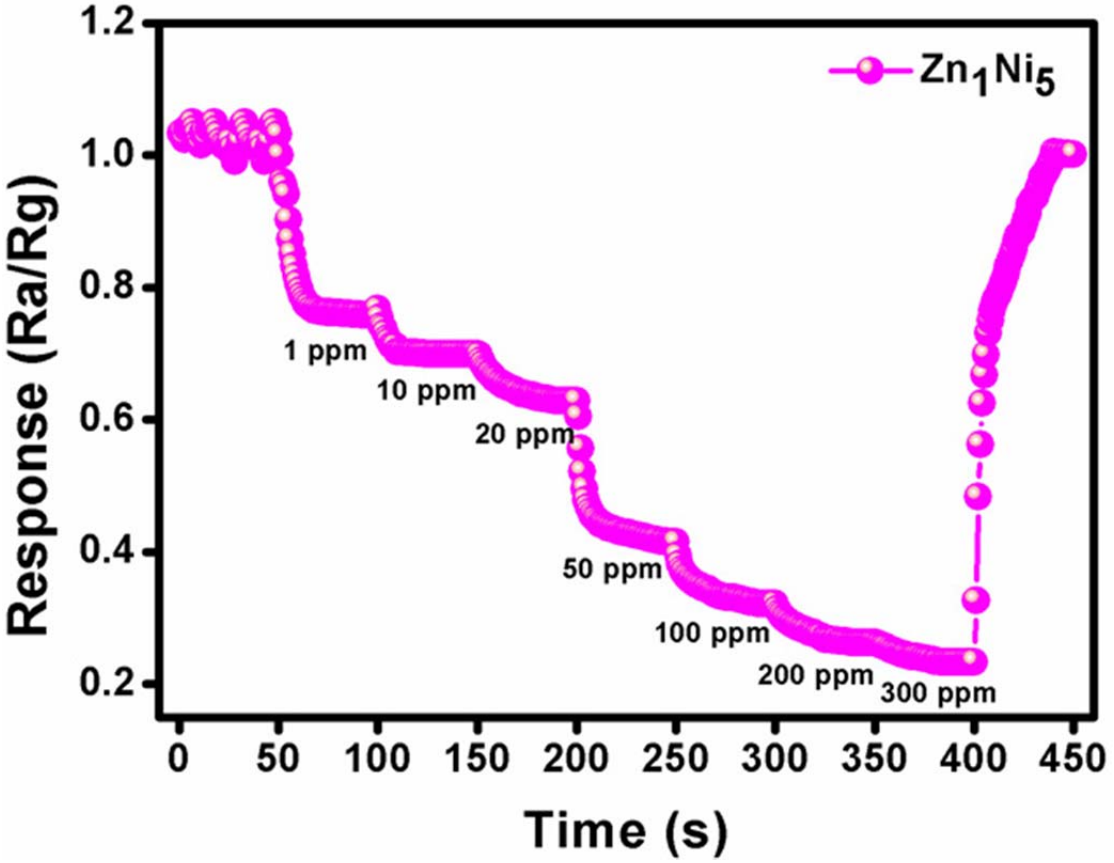

Figure. S2 Dynamic response of the Zn_1Ni_5 to 1-300 ppm concentrations of NH_3 at 280 ℃.

S3: Relationship of NH_3 concentration vs. response

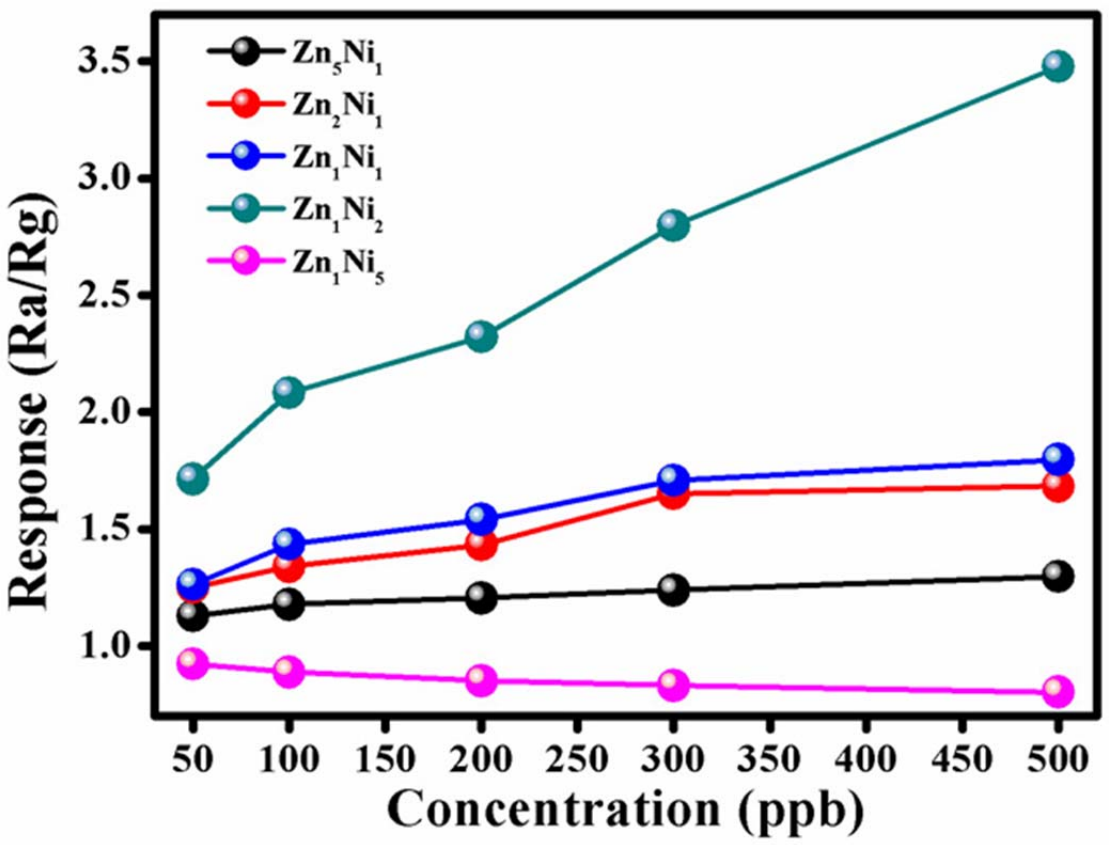

Figure. S3 Response of the 3D *n*-ZnO/*p*-NiO with the different Zn-to-Ni molar ratio to 50-500 ppb NH_3 concentrations at 280 ℃.

S4: Energy band structure of p-type NiO and n-type ZnO before and after contact

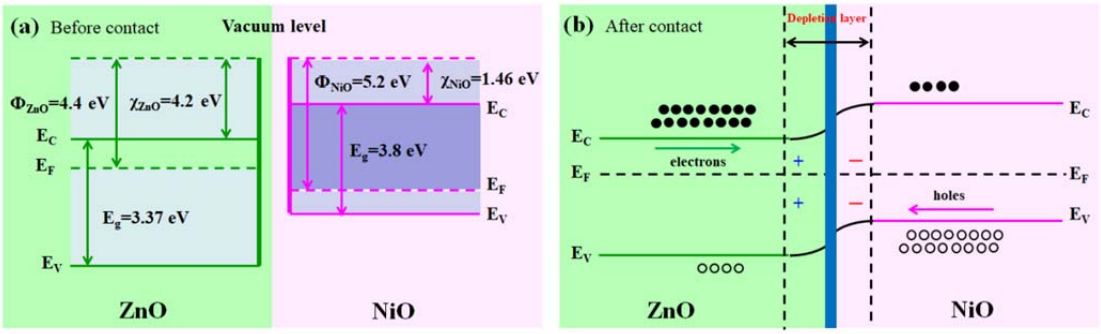

Figure. S4 Schematic diagram of the energy band structure of p-type NiO and n-type ZnO before (a) and after (b) contact.