## **Supporting Information**

## A Controllable Surface Etching Strategy for MOF-Derived Porous

## ZnCo<sub>2</sub>O<sub>4</sub>@ZnO/Co<sub>3</sub>O<sub>4</sub> Oxides and Their Sensing Properties

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## Results



Fig. S1 TEM image of (A)  $ZnCo_2O_4$ , (B)  $ZnCo_2O_4@ZnO/Co_3O_4-6h$ .( inset: metal oxide particle size distribution composed of  $ZnCo_2O_4$  and  $ZnCo_2O_4@ZnO/Co_3O_4-6h$ ).



Fig. S2 Temperature dependent sensing results of  $ZnCo_2O_4$  for 100 ppm ethanol, methanal, acetone, methanol, and ammonia at different temperatures from 100-300 °C.



Fig. S3 Temperature dependent sensing results of ZnCo<sub>2</sub>O<sub>4</sub>@ZnO/Co<sub>3</sub>O<sub>4</sub>-1h for 100 ppm ethanol, methanal, acetone, methanol, and ammonia at different temperatures from 100-300 °C.



Fig. S4 Temperature dependent sensing results of ZnCo<sub>2</sub>O<sub>4</sub>@ZnO/Co<sub>3</sub>O<sub>4</sub>-6h for 100 ppm ethanol, methanal, acetone, methanol, and ammonia at different temperatures from 100-300 °C.