

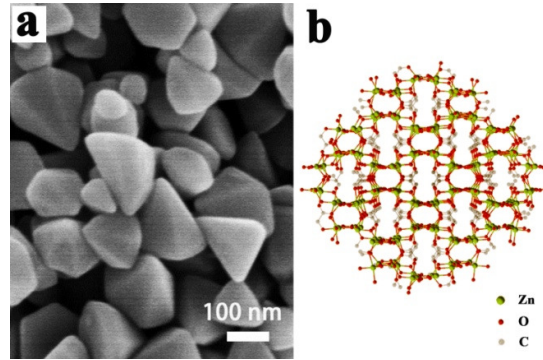
## Supplementary Information

### **Improving Photoelectrochemical Response of ZnO Nanowire Arrays by Coating with p-Type ZnO-Resembling Metal–Organic Framework**

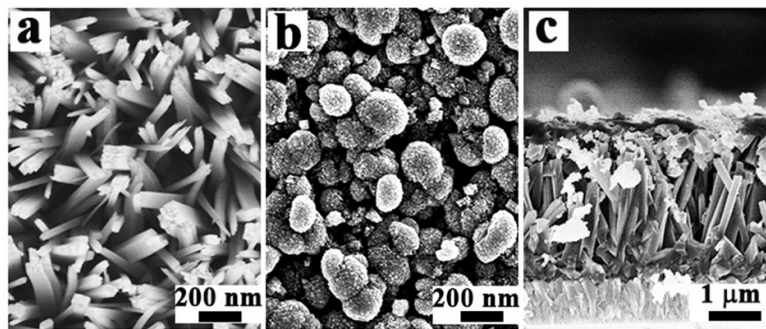
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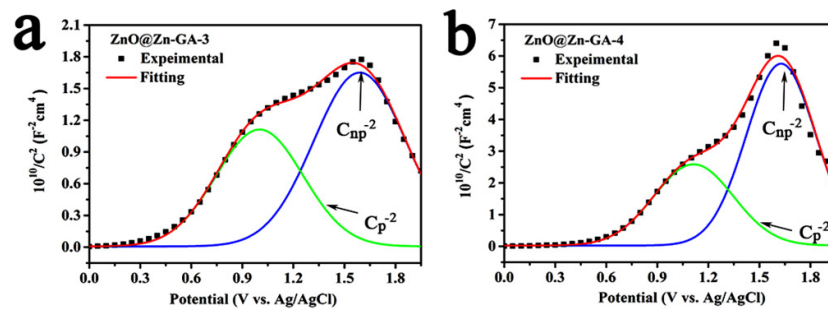
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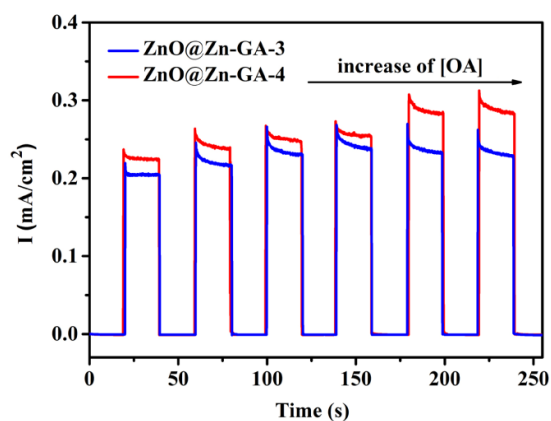
**Fig. S1** (a) SEM image of the Zn-GA crystalline powders; (b) Illustration of the Zn–O network embedded in Zn-GA.



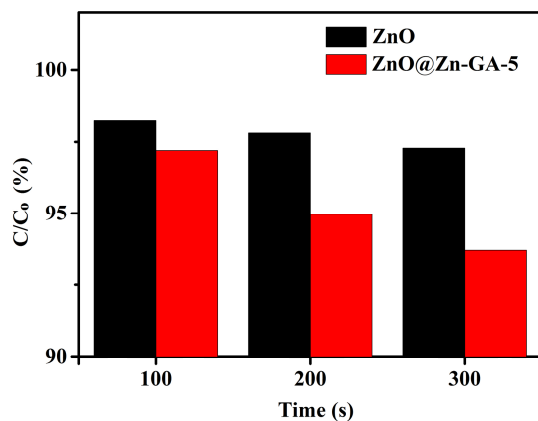
**Fig. S2** SEM top view of (a) TiO<sub>2</sub> NWAs and (b) TiO<sub>2</sub>@Zn-GA-5 NWAs; (c) SEM cross-sectional view of TiO<sub>2</sub>@Zn-GA-5 NWAs.



**Fig. S3** The measured and fitted M–S plots of (a) ZnO@Zn-GA-3 NWAs and (b) ZnO@Zn-GA-4 NWAs at a frequency of 3 kHz in the dark.



**Fig. S4** Photocurrent response curves of ZnO@Zn-GA-3 NWAs and ZnO@Zn-GA-4 NWAs in the presence of OA with concentrations starting from 0 to 50  $\mu\text{M}$  at a 10  $\mu\text{M}$  interval at bias of 0.5 V vs. Ag/AgCl.



**Fig. S5** PEC degradation of OA (70  $\mu\text{M}$ ) by primary ZnO NWAs and ZnO@Zn-GA-5 NWAs. The concentration of residual OA in the electrolyte solution was determined by monitoring the absorbance intensity of OA at 190 nm.