

Supporting Information

Controllable generation of ZnO/ZnCo₂O₄ arising from bimetal-organic frameworks for electrochemical detection of naphthol isomers

Lei Peng^{a, b}, Sheying Dong^{a, *}, Yaqi An^a, Mengnan Qu^{b, *}

^a School of Chemistry and Chemical Engineering, Xi'an University of Architecture and Technology, Xi'an 710055, People's Republic of China

^b College of Chemistry and Chemical Engineering, Xi'an University of Science and Technology, Xi'an 710054, People's Republic of China

*Corresponding author. Phone: (+86)-29-82201203. Fax: (+86)-29-82205332.

E-mail address: dongsyy@126.com (S.Y. Dong)

Experimental section

Electrochemical measurements

All electrochemical measurements were carried out with a CHI660D electrochemical workstation (Shanghai Chenhua Co.). A three-electrode system was used, where a saturated calomel electrode (SCE) served as the reference electrode, a platinum wire electrode as the auxiliary electrode and a modified CPE as the working electrode. Cyclic voltammetric measurements were done in an undivided 30 mL electrochemical teflon cell at 25 ± 0.5 °C. AC impedance experiments were carried out in 5.0 mM $K_3Fe(CN)_6/K_4Fe(CN)_6$ (1:1) containing 0.1M KCl, while the applied perturbation amplitude was 0.005 V, the frequencies swept from 10^5 to 10^{-2} Hz, the number of points per frequency decade was 12 and the initial potential was 0.20 V vs. RE (SCE).

Preparation of CPE electrodes

0.6 g of liquid paraffin and 3.4 g of graphite powder were hand-mixed to produce a homogenous paste. Then the prepared carbon paste was firmly packed into a PVC tube (3 mm internal diameter) and a copper wire (1.5 mm external diameter) was introduced into the other end for electrical contact.

Results and discussion

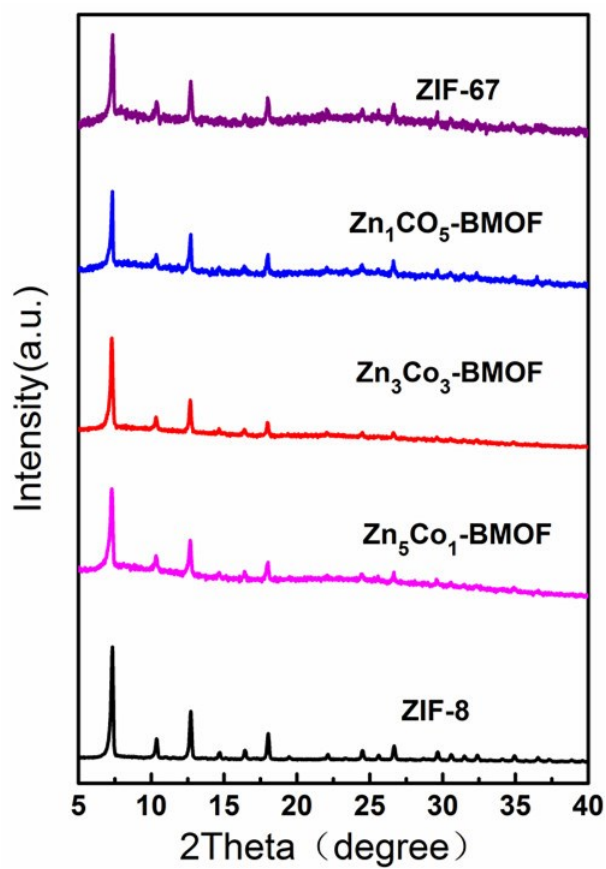


Fig. S1 The XRD pattern of Zn₆Co₀-BMOF (ZIF-8), Zn₅Co₁-BMOF, Zn₃Co₃-BMOF, Zn₁Co₅-BMOF and Zn₀Co₆-BMOF (ZIF-67)

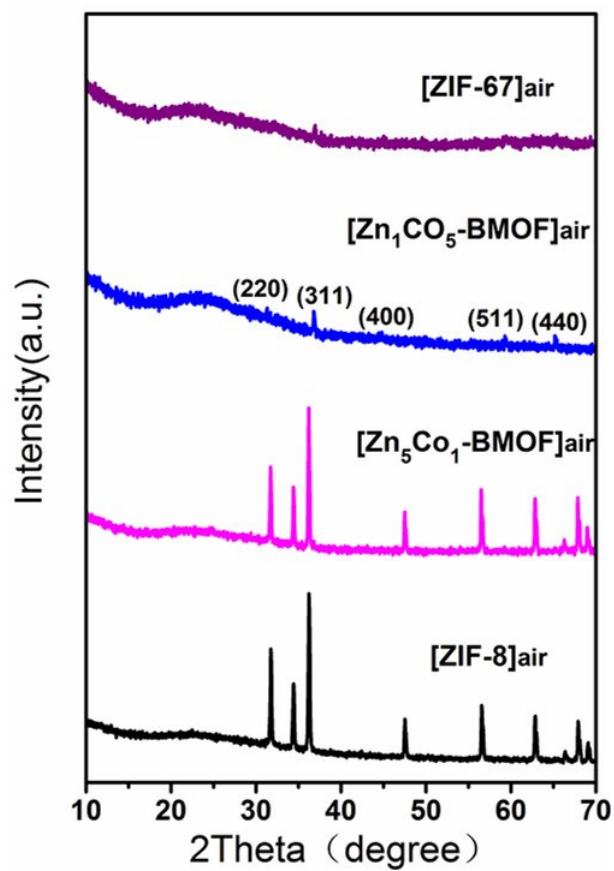


Fig. S2 The XRD pattern of $[\text{Zn}_x\text{Co}_{6-x}\text{-BMOF}]_{\text{air}}$ ($x=0, 1, 5, 6$)

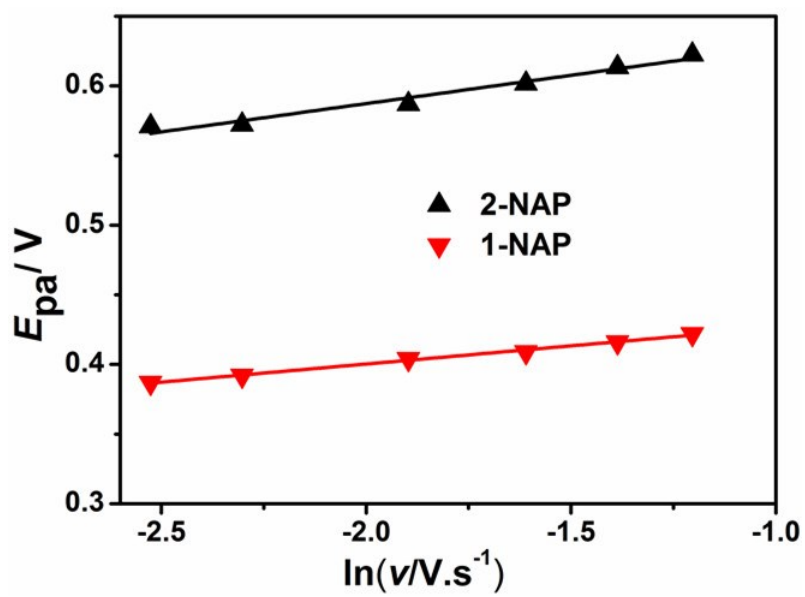


Fig. S3 The plots of $E_{p,a}$ vs. natural logarithm of scan rate ($\ln v$)