Electronic Supplementary Material (ESI) for Analytical Methods.

Supporting information

Engineering MOF-magnetic graphene oxide nanocomposite for enantioselective capture

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Contents:

Supplement of Experimental section

Synthesis of MOF $[Zn_2(BTC)(NO_3)(DMA)_3]_n$ (ZnBND). $Zn(NO_3)_2 \cdot 6H_2O$ (1.368 g) and H_3BTC (0.3192 g) and DMA (23 mL) were mixed in a 100 mL three-necked round-bottomed flask. The mixture was heated in oil-bath at 110 ºC for 60 h with mechanical agitation. Then colorless powder were collected, washed with ultrapure water and ethanol, and dried in vacuum oven to obtain the MOF (ZnBND).

Synthesis of Fe_3O_4@SiO_2@ZnBND composite. 7 Wt % of Fe_3O_4@SiO_2 were added into the mixed DMA of $Zn(NO_3)_2 \cdot 6H_2O$ (1.368 g) and H_3BTC (0.3192 g). The suspension was sonicated for 30 min, and then heated in oil-bath at 110 ºC for 60 h with mechanical agitation. Dark gray powder were collected, washed with ultrapure water and ethanol, and dried in vacuum oven to get the Fe_3O_4@SiO_2@ZnBND.

Synthesis of Fe_3O_4@SiO_2-NH_2@ZnBND composite. Same to the above synthetic step, 7 wt % of Fe_3O_4@SiO_2-NH_2 were added, and then gray powder Fe_3O_4@SiO_2-NH_2@ZnBND was gained.

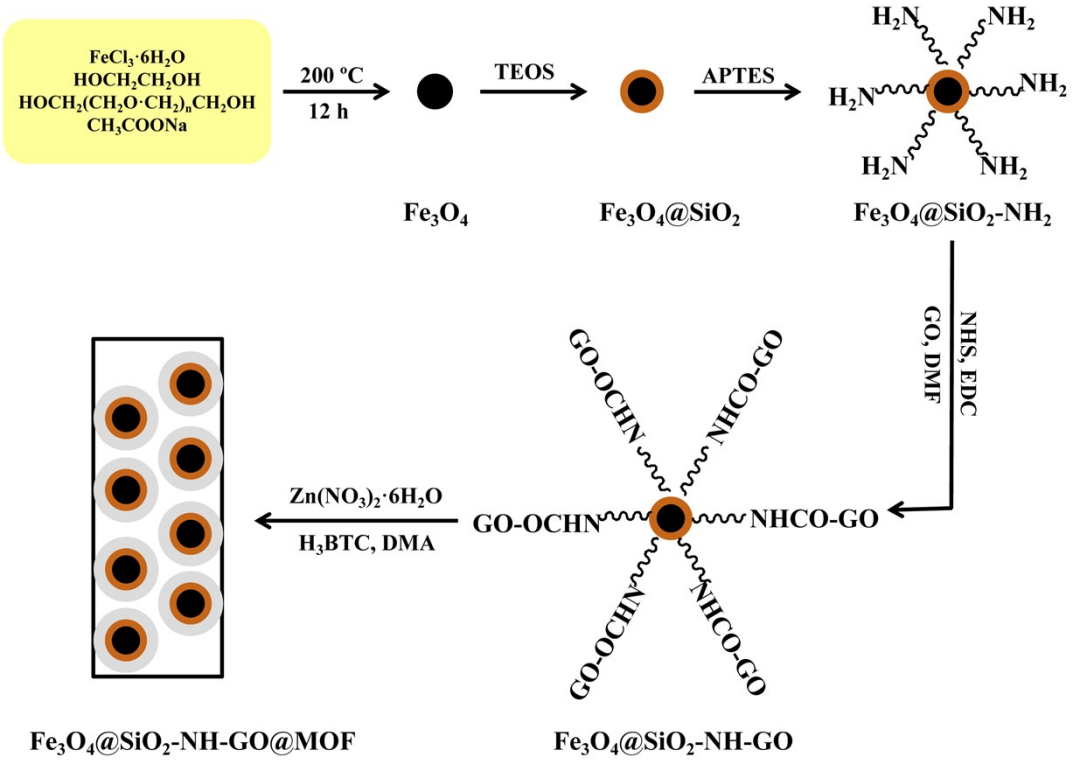

Figure S1. Preparation of Fe_3O_4@SiO_2-NH_2@ZnBND(MGO-ZnBND)

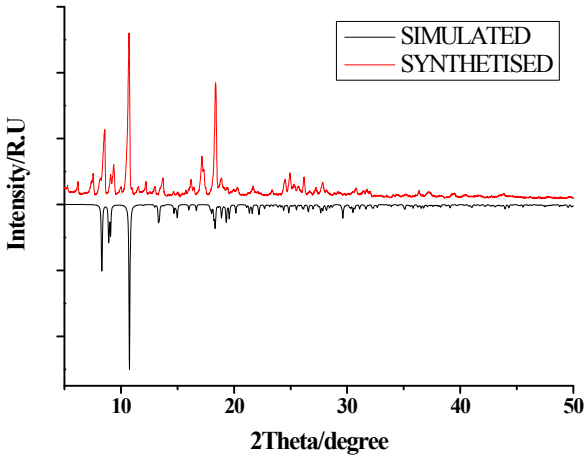

Figure S2. The experimental powder X-ray diffractogram of as-synthesised ZnBND (normal plot) and corresponding simulation result (inverted plot).

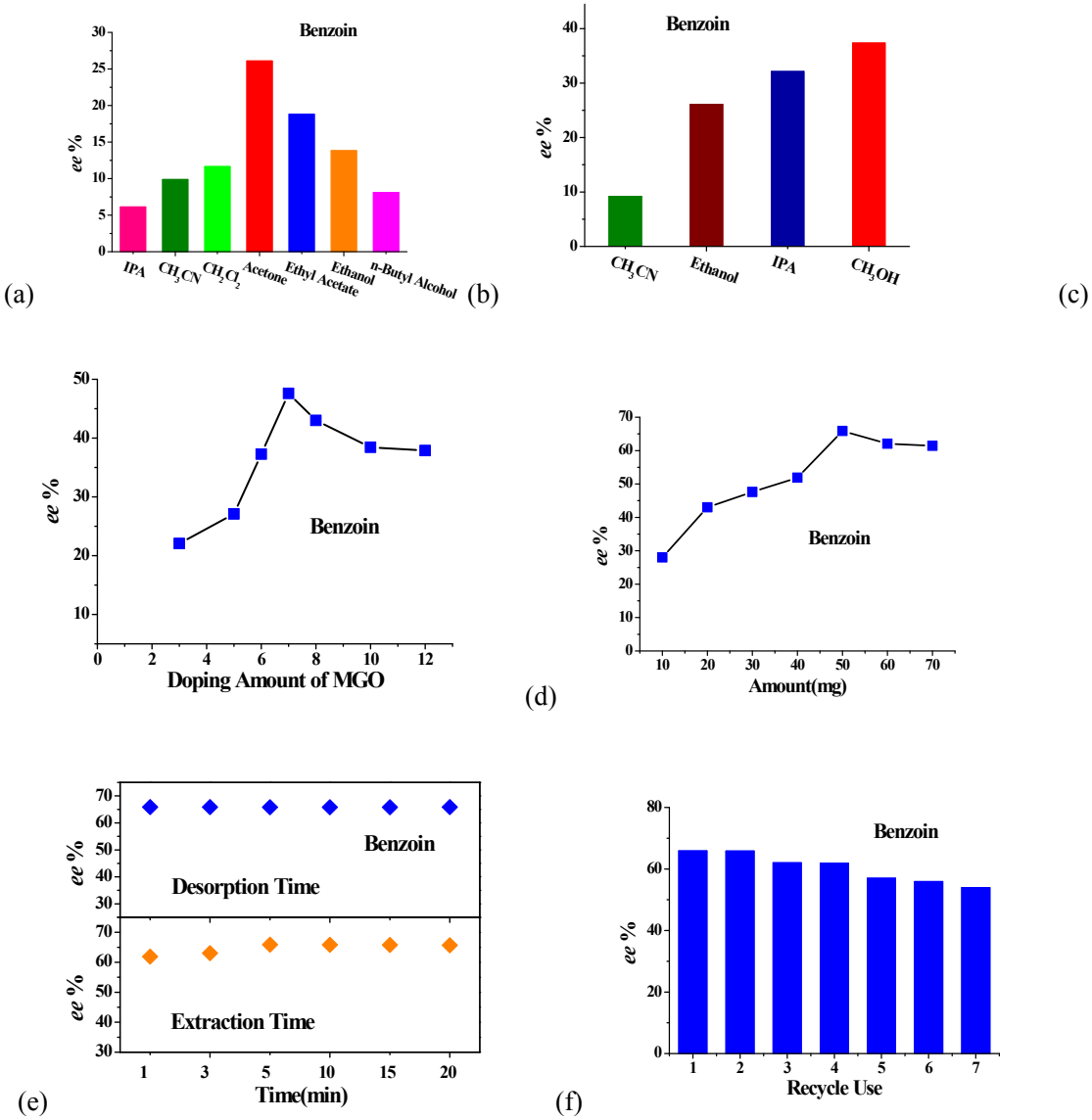

Figure S3. “Enantioselective capture” process for benzoin using MGO-ZnBND. (a) Optimization of the extraction solvent; (b) Optimization of the elution solvent; (c) Optimization of the percentage of MGO; (d) Optimization of the dosage of MGO-ZnBND; (e) Optimization of the extraction time and desorption time; (f) Recycle use of MGO-ZnBND composite.