Supporting information

MOF – cation exchange resin composites and their use for water decontamination

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Fig. S1 UV-vis absorption spectra of MB (left) and OTC (right) solutions at various concentrations.

Fig. S2 Plots of absorbance of the MB (left) and OTC (right) solutions with respect to the concentrations at $\lambda_{\text{max}}$ of 600 and 368 nm, respectively.
**Fig. S3** Nitrogen sorption isotherms of resin beads, ZB-W-1.5 and ZIF-8. (Adsorption - full symbols; Desorption - empty symbols).

**Fig. S4** Analyses of adsorption isotherm of MB by (a) Langmuir, (b) Freundlich and (c) Temkin isotherms (25 °C, $C_0 = 5$–250 mg L$^{-1}$, ZIF-8=0.2 g L$^{-1}$, resin beads=1 g L$^{-1}$, ZB-W-1.5=1 g L$^{-1}$).
**Fig. S5** Pseudo-first-order kinetics (left) and pseudo-second-order kinetics (right) for the adsorption of MB molecule.

**Fig. S6** Powder XRD patterns of the initial ZB-W-1.5 and ZB-W-1.5 after 5 and 10 adsorption-desorption cycles.
Fig. S7 Optical photograph of the composite adsorbent collected after adsorption at the initial concentrations ranging from 5 to 250 mg L\(^{-1}\) (from left to right).

Fig. S8 Molecule structures of methyl blue (left) and oxytetracycline (right).