High-Capacity Strong Cation Exchanger Prepared From An Inactivated Immobilized Enzyme And Its Application To The Removal Of Methylene Blue From Water

Jingxiang Yuan, Chaozhan Wang*, Yinmao Wei*

Synthetic and Natural Functional Molecule Chemistry of Ministry of Education Key Laboratory, College of Chemistry and Materials Science, Northwest University, Xi'an 710127, China

Fig. S1. Effect of pH on the adsorption of MB
(Initial MB concentration: 2 g/L; adsorbent dosage: 2 g/L; temperature: 298 ± 2 K; equilibrium time: 30 min)

Fig. S2. Spectral changes before and after adsorption
(Initial MB concentration: 2 g/L; adsorbent dosage: 2 g/L; pH 7.0; temperature: 298 ± 2 K; Spectra were traced after diluted the solutions 625-fold.)
Fig. S3. Pseudo-second order kinetics for adsorption of MB

Fig. S4. Pseudo-first order kinetics for adsorption of MB

Fig. S5. Effect of temperature on the adsorption of MB

(Initial MB concentration, 2 g/L; adsorbent dose, 2 g/L; pH 7.0; adsorption time, 1 min.)
Fig. S6. Desorption of Adsorbed dyes from cation exchanger in varying composition of eluent solution

(Initial MB concentration, 2 g/L; adsorbent dose, 2 g/L; pH 7.0; temperature, 298 K±2)

1, 1 mol/L HCl + 30% ethanol; 2, 2 mol/L HCl + 30% ethanol;
3, 3 mol/L HCl + 30% ethanol; 4, 5 mol/L HCl + 30% ethanol;
5, 1 mol/L HCl + 50% ethanol; 6, 1 mol/L HCl + 70% ethanol;
7, 1 mol/L HCl + 1 mol/L NaCl