

One-step synthesis of polyethyleneimine grafted styrene-maleic anhydride copolymer adsorbents for effective adsorption of anionic dyes

Yao Xu^a, Qinwen Wang^a, Yuanbo Wang^b, Falu Hu^{*a}, Bin Sun^{a, c}, Tingting Gao^{*a, c},

Guowei Zhou^a

^a Key Laboratory of Fine Chemicals in Universities of Shandong, Jinan Engineering Laboratory for Multi-scale Functional Materials, School of Chemistry and Chemical Engineering, Qilu University of Technology (Shandong Academy of Sciences), Jinan 250353, China

^b Shandong Land and Space Ecological Restoration Center, Jinan, China

^c Shandong Laboratory of Advanced Materials and Green Manufacturing at Yantai, Yantai, China

*Corresponding author at: Daxue Road, Western University Science Park, Jinan

250353, Shandong, China. Tel: +86-13573103906

E-mail address: faluhu@qlu.edu.cn; ttgao@qlu.edu.cn

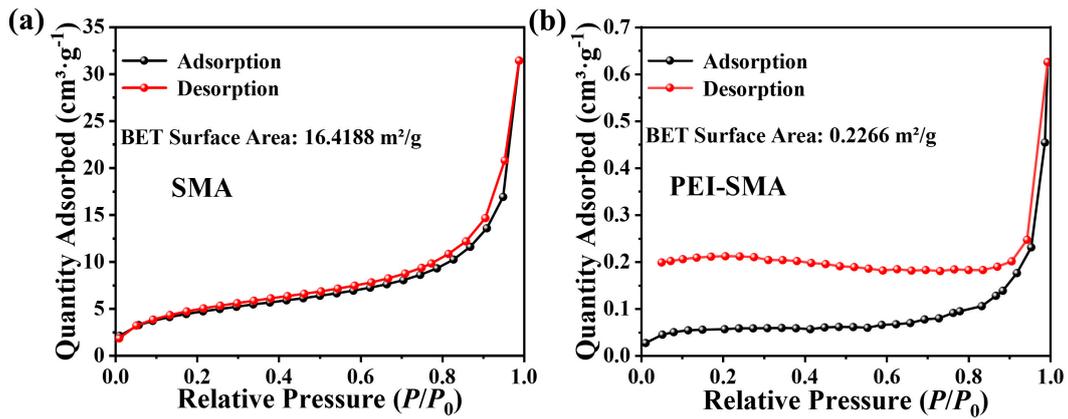


Figure S1. Characterization of N₂ adsorption–desorption isotherms: (a) SMA, (b) PEI-SMA.

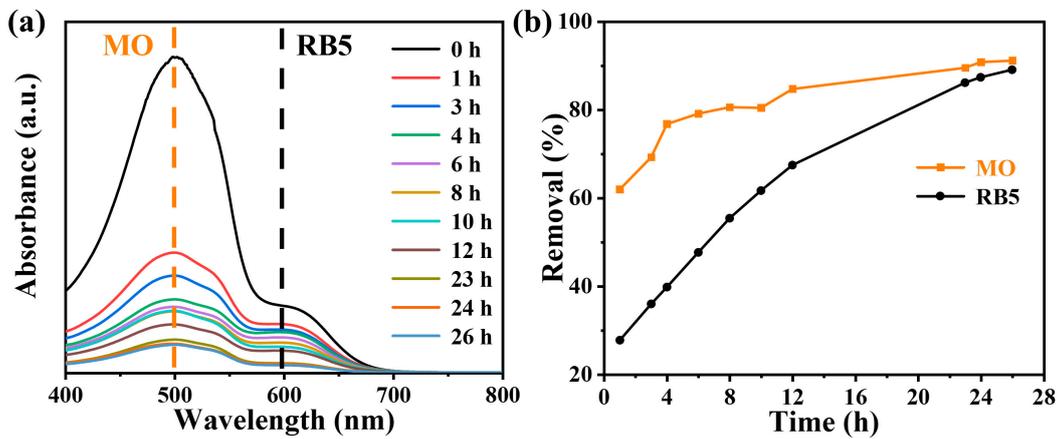


Figure S2. UV-vis spectra of (a) RB5/MO mixed solution with different contact time (RB5 and MO concentration = 600 mg L⁻¹, respectively; V = 200 mL, dosage = 35 mg, contact time = 1560 min, temperature = 308 K, and pH = 2.0); (b) The relationship between the removal percentage of RB5 and MO in the mixed dye solutions and time.

Table S1. The BET specific surface area, pore volume, average pore diameter, meso- and micropore volume data of SMA and PEI-SMA.

Parameters	SMA	PEI-SMA
surface area	16.4188 m ² /g	0.2266 m ² /g
pore volume	0.014067 cm ³ /g	0.000928 cm ³ /g
average pore diameter	43.084 Å	30.8479 nm
mesopore volume	0.005105 cm ³ /g	0.000605 cm ³ /g
micropore volume	0.001723 cm ³ /g	0.000004 cm ³ /g