

Supplementary Data
for
Ultrahigh Rhodamin B adsorption capacities from aqueous solution
by activated carbon derived from *Phragmites australis* doped with
organic acid by phosphoric acid activation

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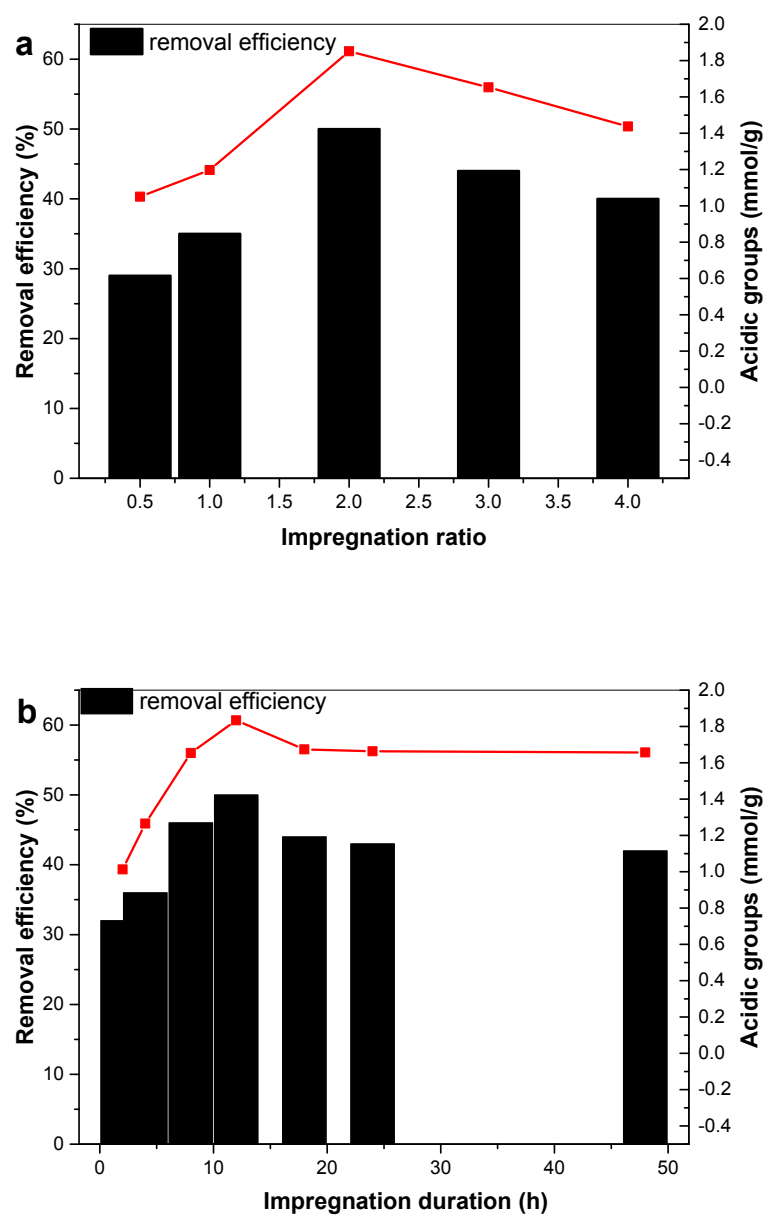


Fig. S1. Effects of (a) impregnation ratio and (b) duration on the acidic groups and RhB removal efficiency by activated carbons (RhB concentration = 400 mg/L, dosage = 0.6 g L⁻¹, temperature = 25 ± 1 °C, time = 12 h)

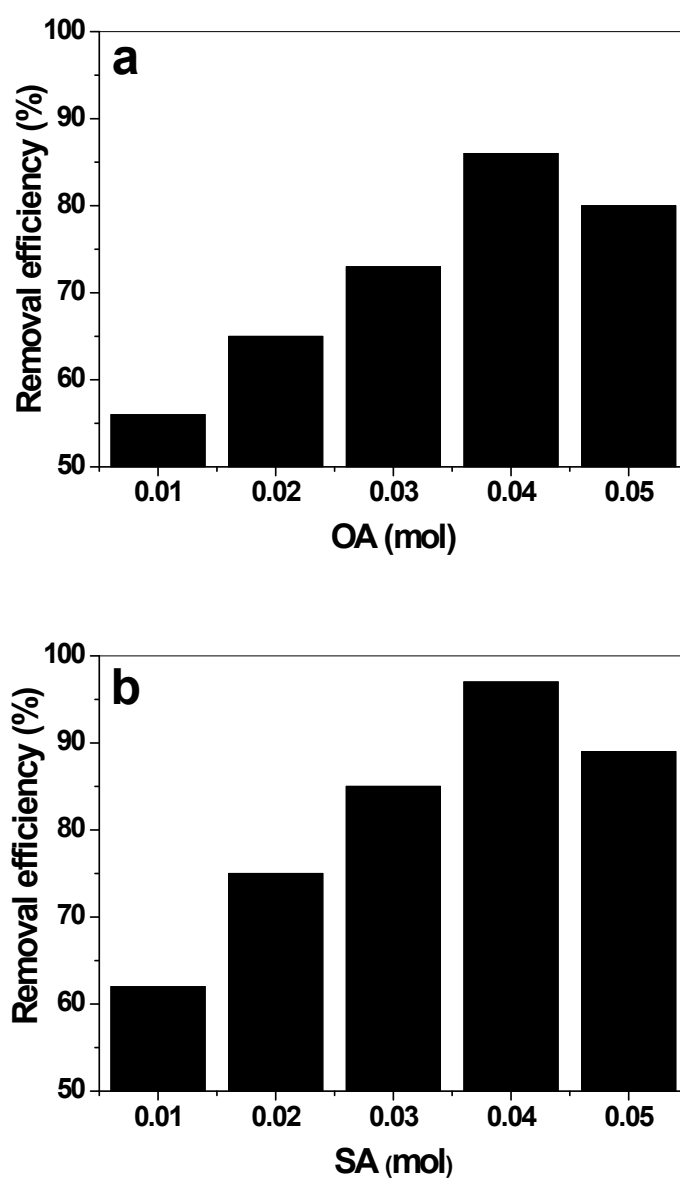


Fig. S2. Effects of (a) OA and (b) SA ratios on the RhB removal efficiency by activated carbons (RhB concentration = 400 mg/L, dosage = 0.6 g L⁻¹, temperature = 25 ± 1 °C, time = 12 h)

Table S1 The physical characteristics and molecular structure of RhB

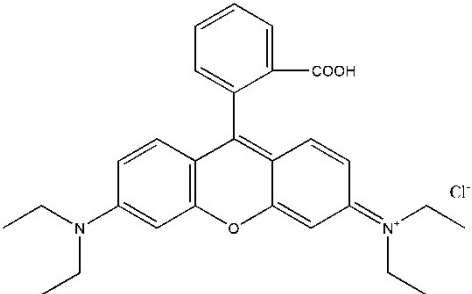
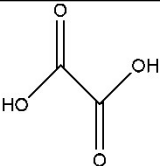
Parameter	Value
Dye name	Rhodamine B
Abbreviation	RhB
C.I. number	45170
C.I. name	Basic violet 10
Class	Rhodamine
Ionization	Basic
Color	Red
$\lambda_{\max}$	552 nm
Empirical formula	$C_{28}H_{31}N_2O_3Cl$
Formula weight	479.029
Chemical Structure	

Table S2 Characteristics of OA and SA

Modified agent	Molecular formula	Abbreviation	Molecular weight	Melting point	Structure
			(g/mol)	(°C)	
Oxalic acid	HOCCOOH	OA	90.04	102	
Succinic Acid	HOOCCH ₂ CH ₂ COOH	SA	118.09	185	