Supporting information

A Systematic Study of the Physicochemical Properties of 3D Welan Gum-Graphene Oxide Composite Hydrogels with Efficient Dye Adsorption Capacity

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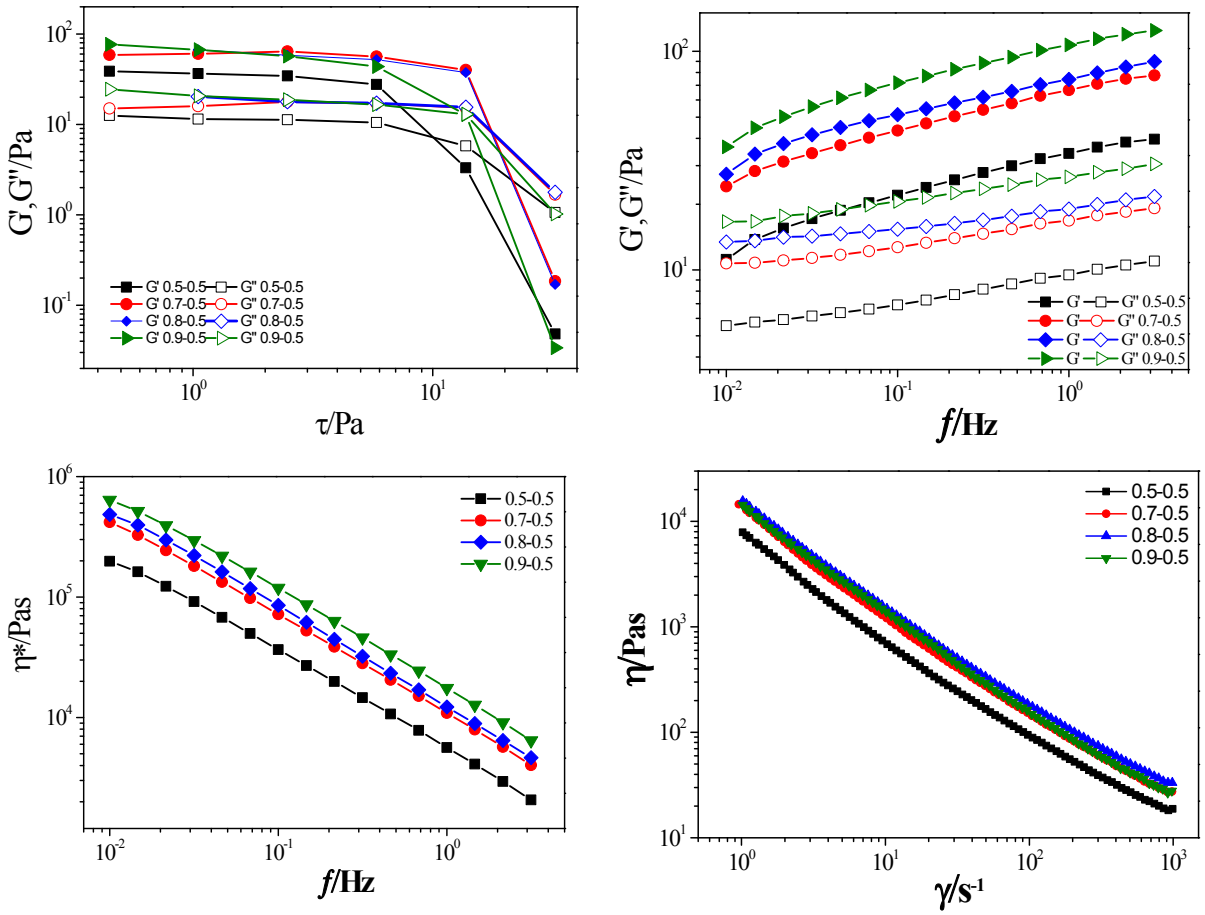


Figure S1 Rheological results for welan gum-GO composite hydrogels formed by 5 mg mL^{-1} GO with different concentration of welan gum measured at 20.0 ± 0.1 °C. (A) Elastic modulus (G′) and viscous modulus (G″) as a function of the applied stress at a constant frequency (1.0 Hz); variation of G′ and G″ (B) and complex viscosity (C) as a function of frequency. (D) Variation of shear

viscosity as a function of shear rate.

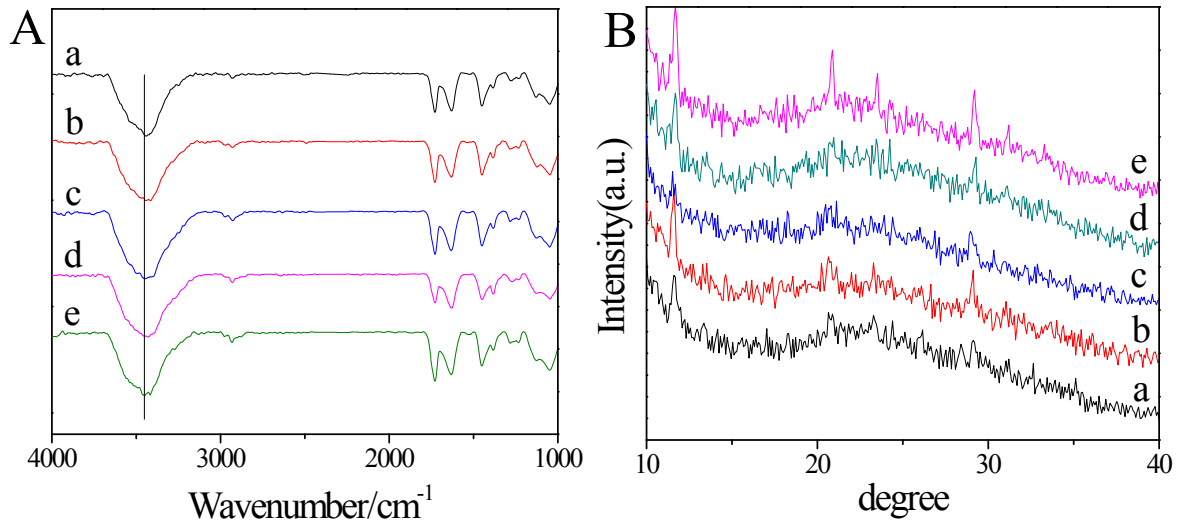


Figure S2 (A) FT-IR spectra and (B) XRD results of freeze-dried samples composed of (a) 5 mg mL^{-1} welan gum/5 mg mL^{-1} GO, (b) 6 mg mL^{-1} welan gum/5 mg mL^{-1} GO; (c) 7 mg mL^{-1} welan gum/5 mg mL^{-1} GO; (d) 8 mg mL^{-1} welan gum/5 mg mL^{-1} GO, (e) 9 mg mL^{-1} welan gum/5 mg mL^{-1} GO composite hydrogels.

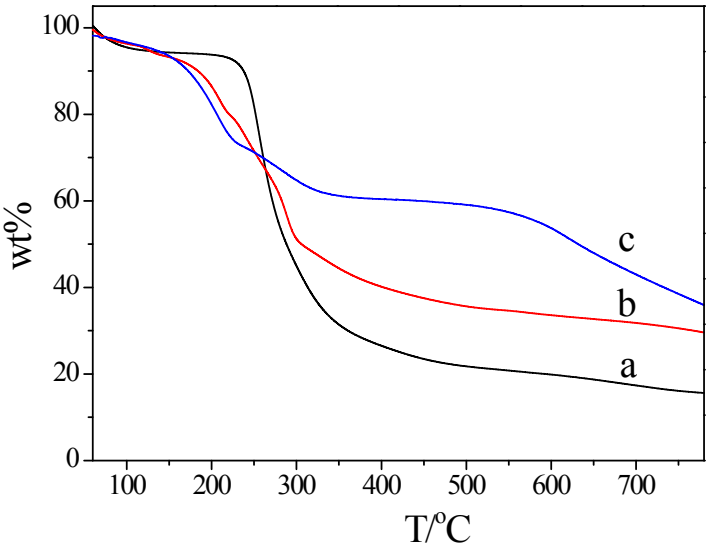
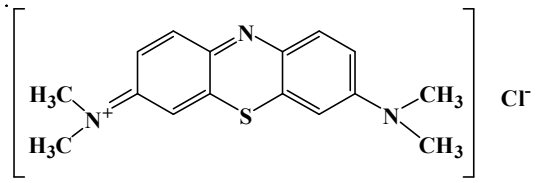
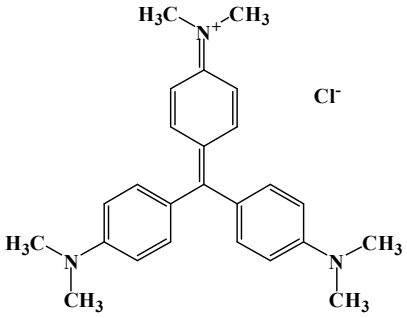


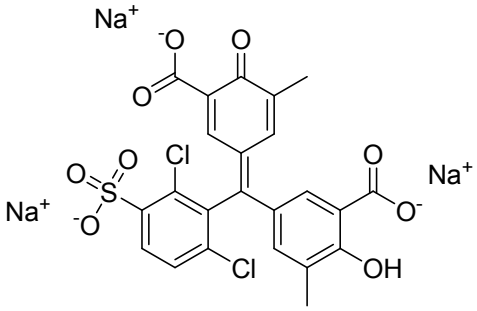
Figure S3 TGA curves of (a) welan gum, (b) welan gum/GO nanocomposite with 5 mg mL^{-1} GO loading and (c) GO.



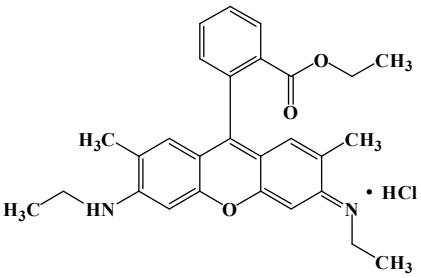
Methylene blue (MB)



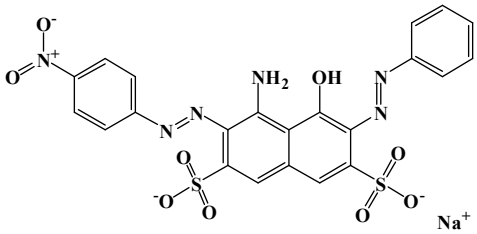
Methyl violet (MV)



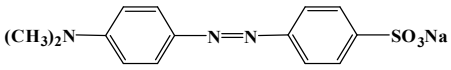
Chrome azurol S (CAS)



Rhodamine 6G (R6G)



Amido black 10B (AB10B)



Methyl orange (MO)

Figure S4 The chemical structures of MB, MV, MO, AB10B, R6G and CAS.

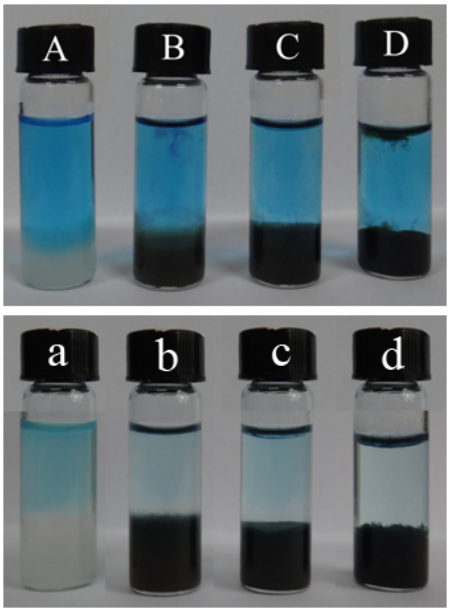


Figure S5 Photos of the dye solutions before (A-D) and after (a-d) the removal by the welan gum–GO hybrid hydrogels: (A, a) 8 mg mL^{-1} welan gum, (B, b) 8 mg mL^{-1} welan gum/1 mg mL^{-1} GO, (C, c) 8 mg mL^{-1} welan gum/5 mg mL^{-1} GO, (D, d) 5 mg mL^{-1} welan gum/5 mg mL^{-1} GO.