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Facile crosslinking synthesis of hyperbranch-substrate nanonetwork magnetite nanocomposite for the fast and highly efficient removal of lead ions and anionic dyes from aqueous solutions

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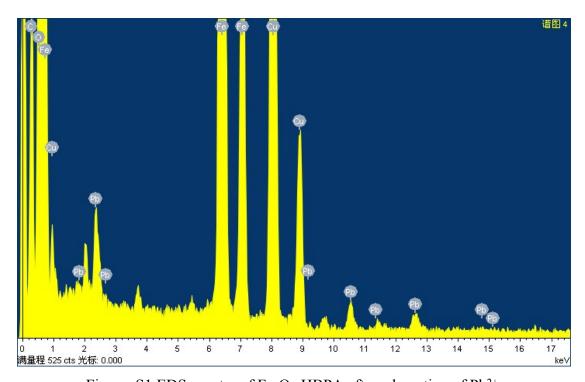


Figure. S1 EDS spectra of Fe₃O₄-HBPA after adsorption of Pb²⁺.

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Table S1. BET Surface Areas, Pore Volumes, and Average Pore Size of Fe_3O_4 -NH $_2$ and Fe_3O_4 -HBPA.

sample	$S_{BET}{}^a\left(m^2\!\cdot\!g^{1}\right)$	$V_t^{b}(cm^3\!\cdot\!g^{\text{-}1})$	D _p ^c (nm)
Fe ₃ O ₄ -NH ₂	29.525	0.046	3.013
Fe ₃ O ₄ -HBPA	36.599	0.055	2.805

a Specific surface area (BET).

$$\left(SO_3H - \left(\begin{array}{c} CH_3 \\ N=N - \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} NaOH \\ H^+ \end{array} \right) \\ SO_3Na - \left(\begin{array}{c} CH_3 \\ N=N - \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array} \right) + \left(\begin{array}{c} CH_3 \\ N-CH_3 \\ H \end{array}$$

Figure. S2. Form mechanism of methyl orange in aqueous solution.

b Total pore volume.

c Average pore size.