Electronic Supplementary Material

Surface-initiated SET-LRP mediated by mussel-inspired polydopamine chemistry for controlled building novel core-shell magnetic nanoparticles for highly-efficient uranium enrichment

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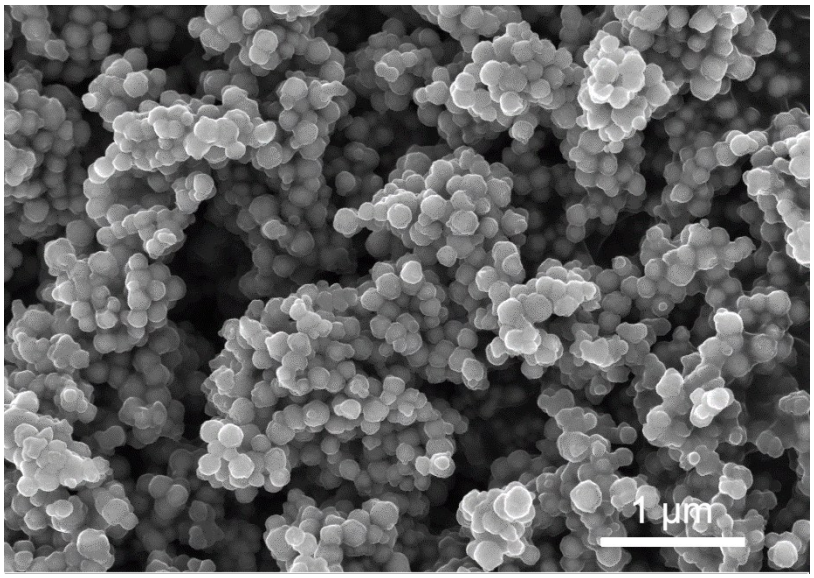

Fig. S1 SEM image of Fe_3O_4@PDA MNPs

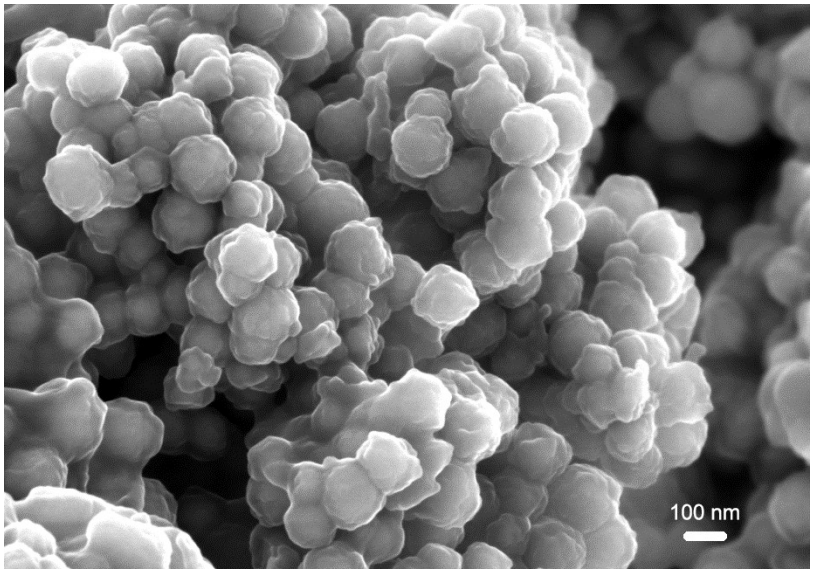

Fig. S2 SEM image of Fe_3O_4@PDA@PAN MNPs

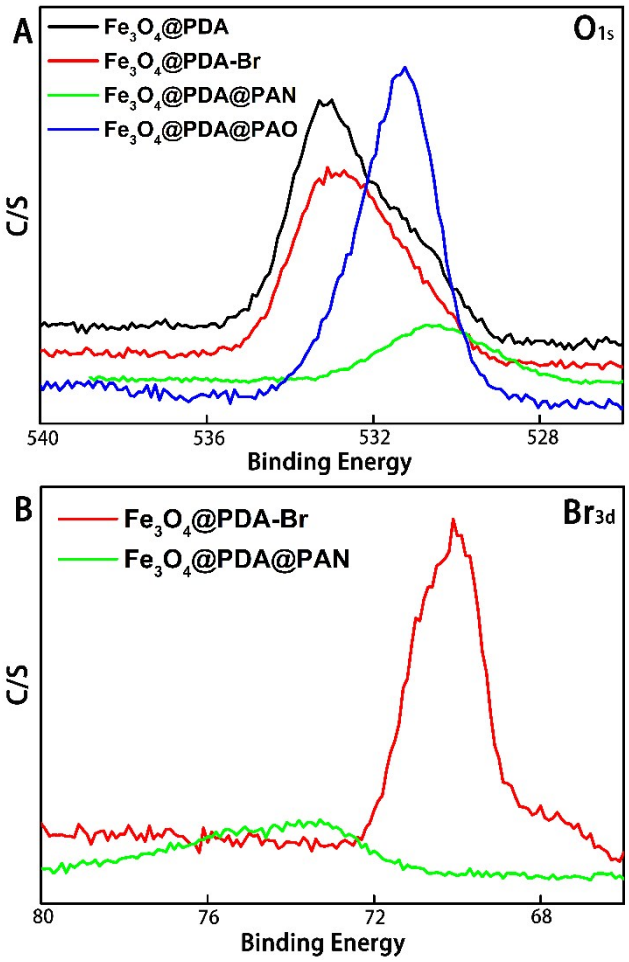

Fig. S3 Narrow scan XPS spectra of Fe_3O_4@PDA, Fe_3O_4@PDA-Br, Fe_3O_4@PDA@PAN, and Fe_3O_4@PDA@PAO at (A) O 1s region and (B) Br 3d region

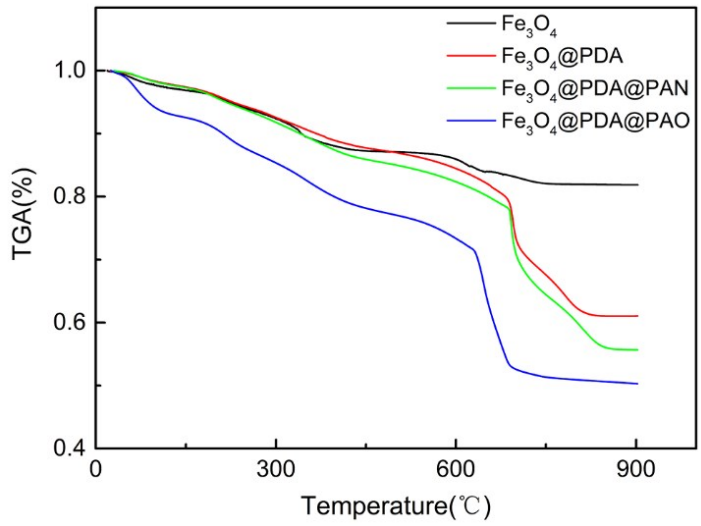

Fig. S4 TGA curves of Fe_3O_4, Fe_3O_4@PDA, Fe_3O_4@PDA-Br, Fe_3O_4@PDA@PAN and Fe_3O_4@PDA@PAO

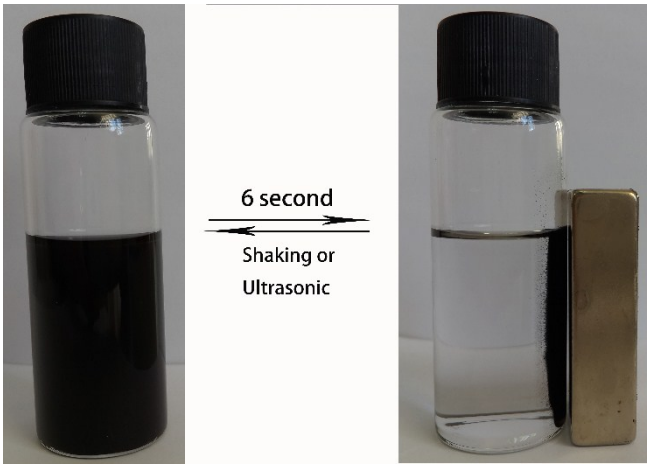

Fig. S5 Magnetic separation and re-dispersion of Fe_3O_4@PDA@PAO under an external magnetic field.

Table S1 Comparison of U(VI) absorption capacity of Fe_3O_4@PDA@PAO with other adsorption materials

Absorbents	Experimental condition	q_{max} (mg g^{-1})	Ref
Colloidal magnetite	Ambient temperature, pH=7.0	1.4	1
Amine modified silica gel	T=302 K, pH=7.0	21.4	2
Salicylaldehyde modified Fe_3O_4@SiO_2	Ambient temperature, pH=7.0	49.0	3
Amidoxime modified Fe_3O_4@SiO_2	T=298 K, pH=5.0	105.0	4
Fe_3O_4@TiO_2 core–shell Magnetic composites	T=298 K, pH=6.0	98.0	5
Bi-functionalized Fe_3O_4@SiO_2	T=298 K, pH=9.0	70.7	6
Fe_3O_4@SiO_2@APTES/PVA Nanofiber	T=318 K, pH=5.0	69.0	7
Magnetic chitosan resins	T=293 K, pH=6.0	166.6	8
Fe_3O_4@PDA@PAO	T=298 K, pH=5.0	162.5	This work

Supporting references

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