## Reusable Magnetic Nanoparticle Immobilized Nitrogen-Containing Ligand for Classified and Easy Recovery of Heavy Metal Ions

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Figure S1. XRD pattern of prepared the Fe<sub>3</sub>O<sub>4</sub> NP.



Figure S2. Standard curve of UV-Vis adsorption of CrCl<sub>3</sub>·6H<sub>2</sub>O in water.



Figure S3. Standard curve of UV-Vis adsorption of CuSO<sub>4</sub> in water.



Figure S4. Standard curve of UV-Vis adsorption of Pb(NO<sub>3</sub>)<sub>2</sub> in water.



Figure S5. Standard curve of UV-Vis adsorption of Cd(NO<sub>3</sub>)<sub>2</sub> in water.





a)



c)

Figure S6. a-c) refers to EDX analysis of  $Fe_3O_4@Me_6TREN NPs$ ,  $Fe_3O_4@Me_6TREN NPs$  with adsorption of Cr(III) and  $Fe_3O_4@Me_6TREN NPs$  after desorption of Cr(III) respectively.