

Electronic supplementary information

The influences of reaction conditions including reaction temperature, reaction time and the amount of ferrocene on the products.

1. The amount of ferrocene.

When the amount of ferrocene is 0.04g, the other conditions are same with the reported route. The quartz tube will bomb because of their higher pressure from ferrocene decomposition. We can't obtain any products.

When the amount of ferrocene is 0.01g, the other conditions are same with the reported route. The as-obtained products are composed of Fe nanoparticles and graphite just as shown in Figure S1a.

2. Reaction time.

When the reaction time is 2 h, the other conditions are same with the reported route. The as-obtained products are mainly composed of Fe nanoparticles and graphite just as shown in Figure S1b.

When the reaction time is 8 h, the other conditions are same with the reported route. The as-obtained products are mainly composed of magnetic carbon nanotubes just as shown in Figure S1c.

3. Reaction temperature

When the reaction temperature is 800 °C, the other conditions are same with the reported route. The as-obtained products are mainly composed of Fe nanoparticles and graphite just as shown in Figure S1d.

When the reaction temperature is 1100 °C, the other conditions are same with the reported route. The quartz tube will bomb because of their higher pressure from ferrocene decomposition. We can't obtain any products.

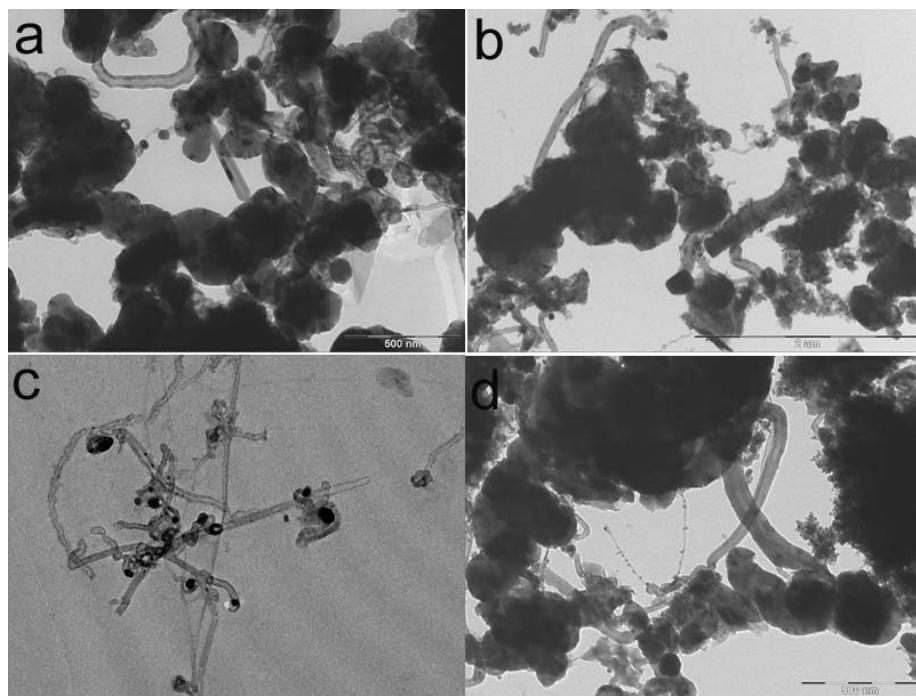


Figure S1. The influences of reaction conditions on the products.

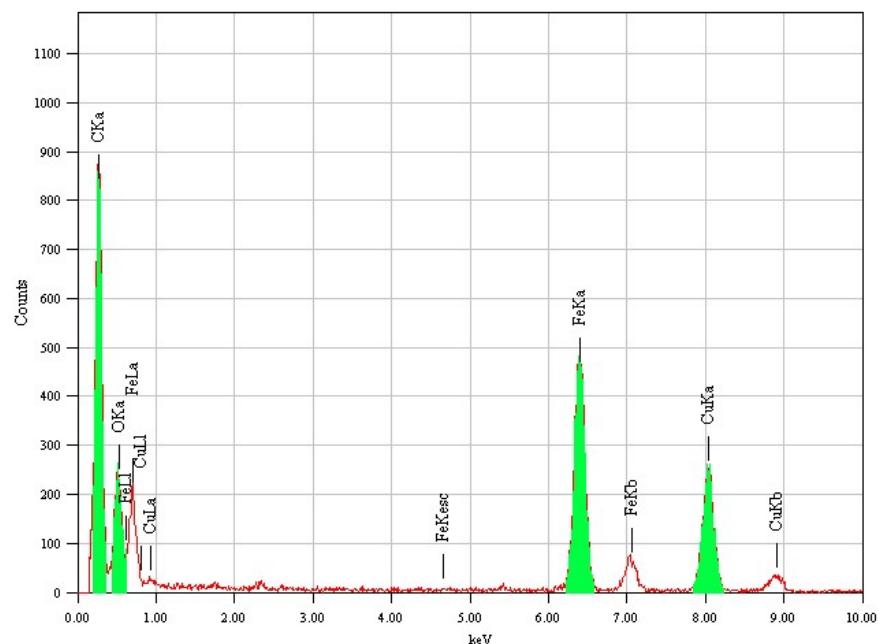


Figure S2. Energy-dispersive X-ray spectrum on the top of a multiwall nanotube.

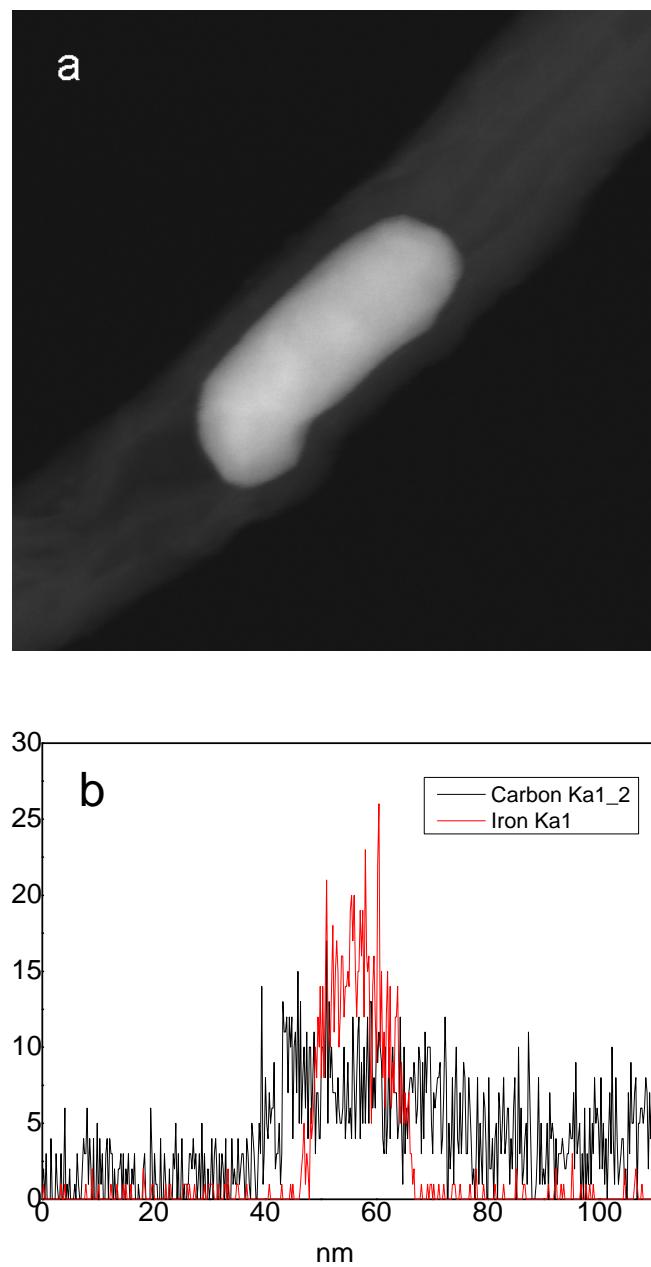


Figure S3. (a) Scanning TEM image and (b) EDS line scan patterns of Fe nanoparticles-functionalized MWCNTs.

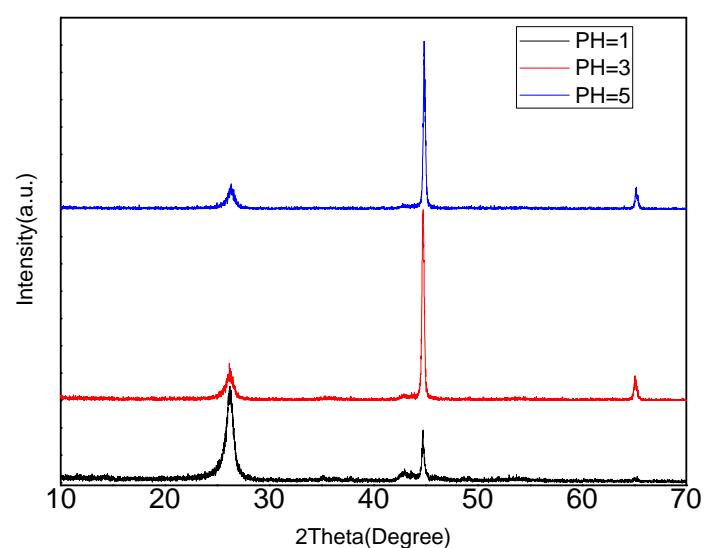


Figure S4. X-ray diffraction patterns of the magnetic-functionalized MWCNTs after being stayed in solutions with different pH values.

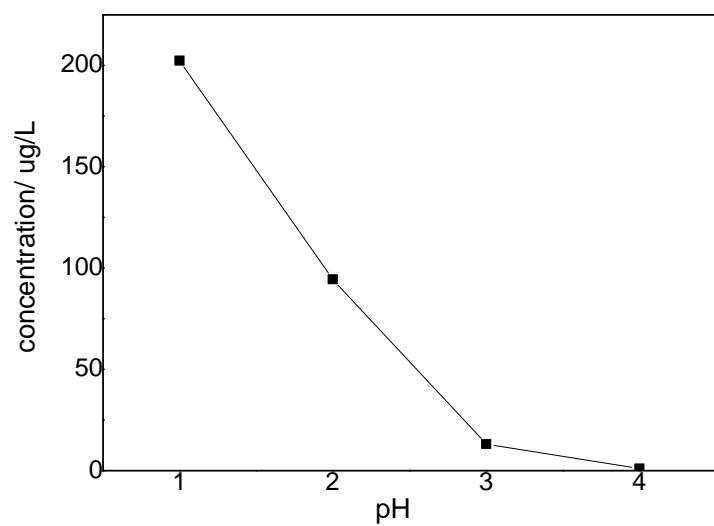


Figure S5. The concentration of Fe in acid aqueous solution after adsorption treatment.

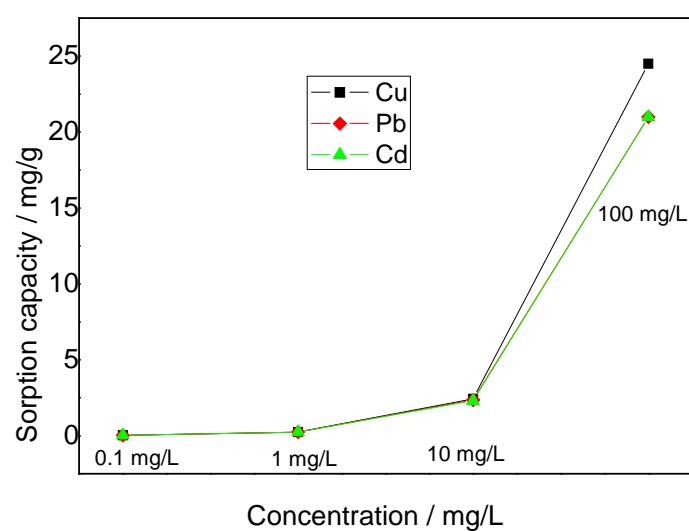


Figure S6. Heavy metal ions adsorption isotherms on magnetic-functionalized MWCNTs.

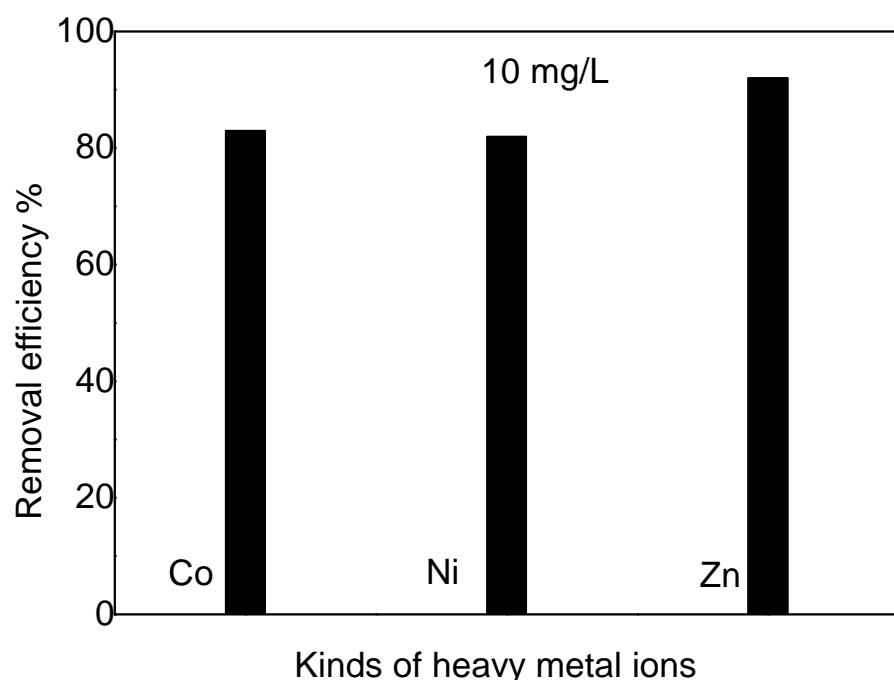


Figure S7. The removal efficiency of the magnetic-functionalized MWCNTs for metal ions with initial concentration of 10 mg/L.