

Magnetic Chitosan/TiO₂ Composite for V(V) Adsorption Simultaneously Being Transformed an Enhanced Natural Photocatalyst for Degradation of Rhodamine B

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1. Determination of the maximum absorption wavelength

The RhB solution was scanned by a UV-752N spectrophotometer in the range of 180-1020 nm to obtain the maximum absorption wavelength. The 4 mg/L RhB solution was added into a 1cm quartz cuvette for direct measurement, with water as reference. It showed in **Figure S1 (a)**, the maximum absorption wavelength was 540 nm.

2. Determination of the standard curve

Prepared a series of RhB solutions (the concentrations were 1, 2, 4, 8, 12, 16 and 20 mg/L, respectively), which added into a 1cm quartz cuvette at the maximum absorption wavelength (540 nm) for direct measurement, with water as reference. **Fig. S1 (b)** showed the standard curve of Rhodamine B at 540 nm.

3. Figures

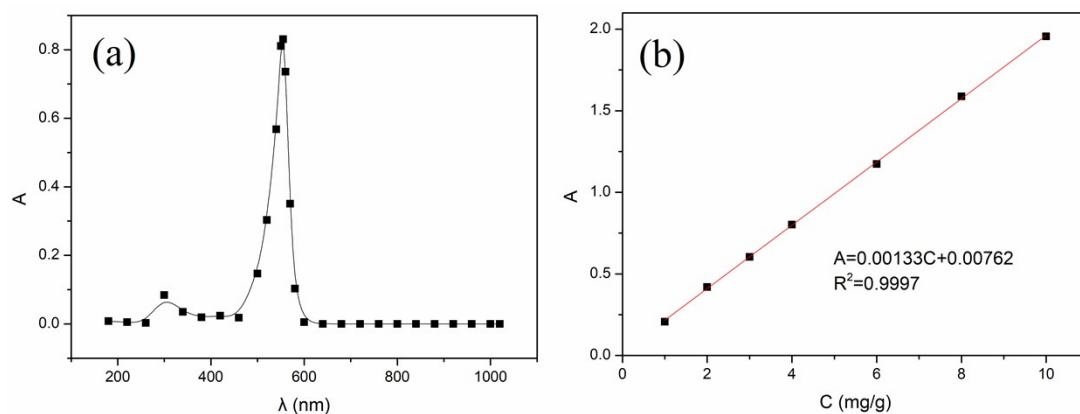


Fig. S1.The (a) maximum absorption wavelength and (b) standard curve of RhB solutions.

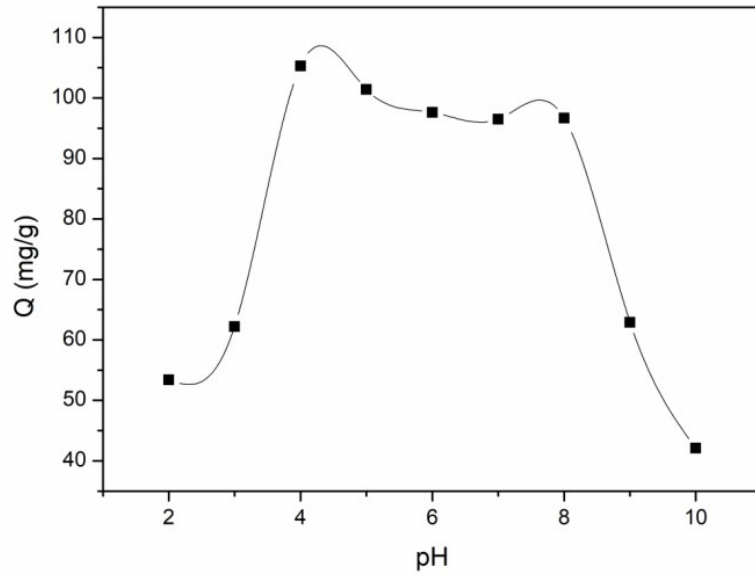


Fig. S2. The Influence of the pH value on adsorption capacity of V(V) with MCT.

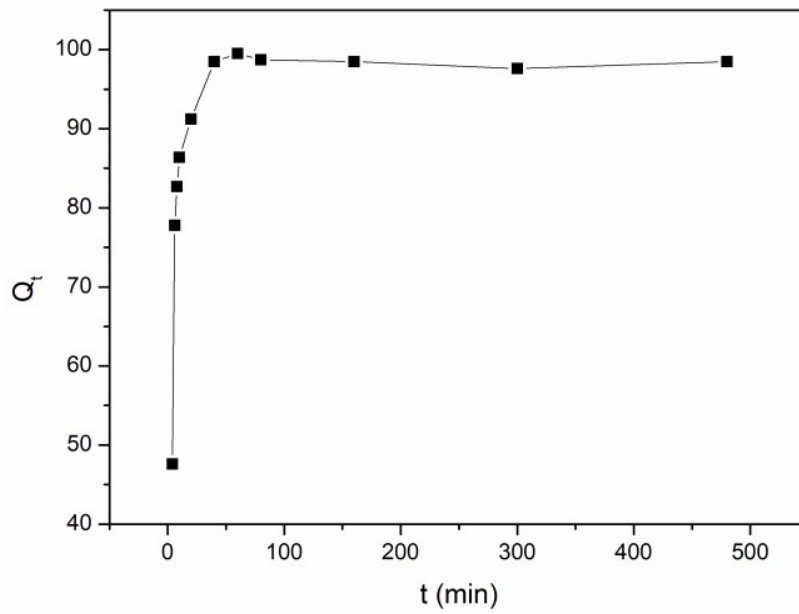


Fig. S3. The Influence of contact time on the adsorption V(V) by MCT.

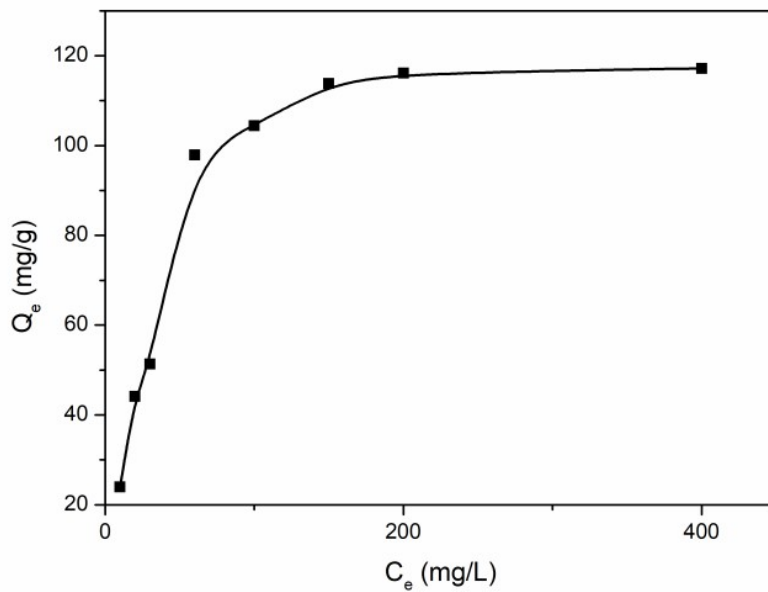


Fig. S4. The adsorption isotherm of V(V) by using MCT.

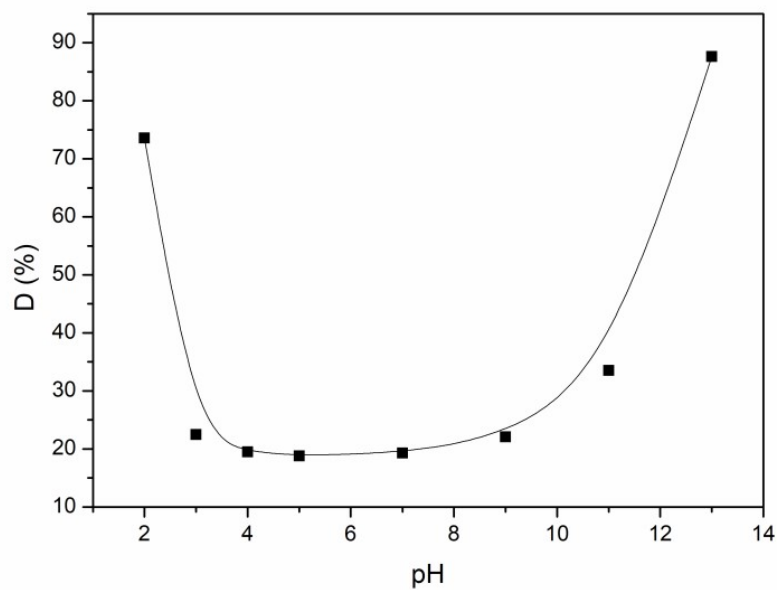


Fig. S5. The Influence of pH on the desorption rate of adsorbed V(V) by MCT.

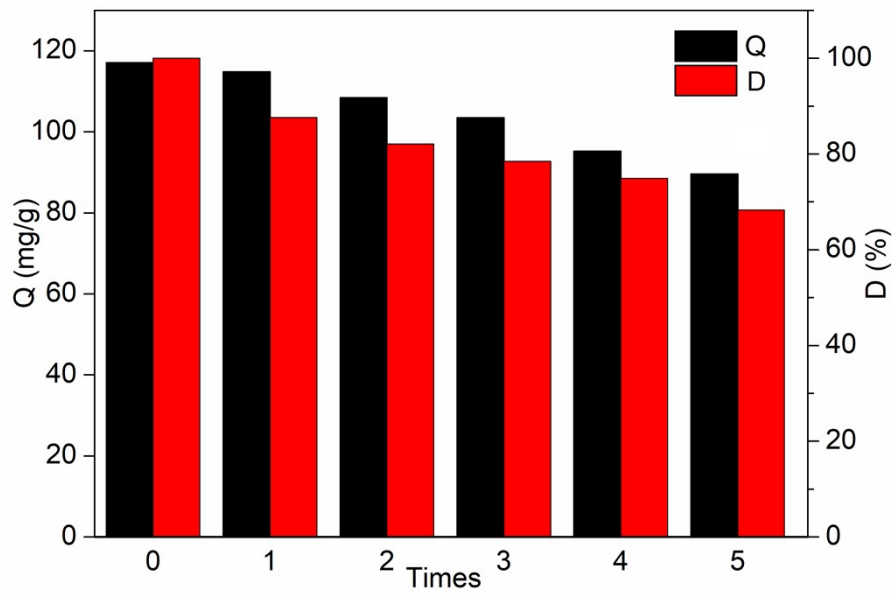


Fig. S6. The Influence of cyclic times on the adsorption capacity and desorption rate of V(V).

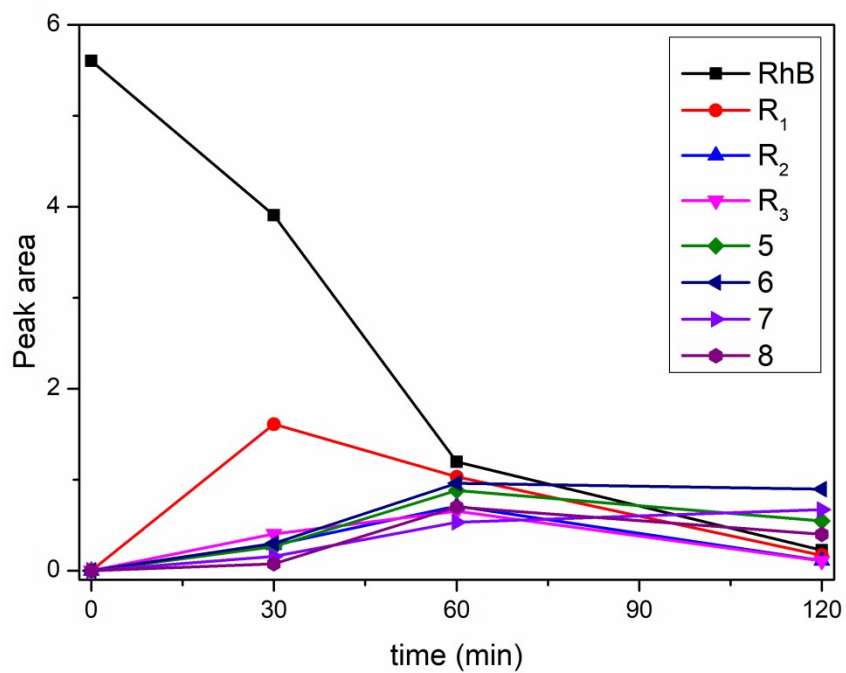


Fig. S7. The peak areas for the intermediates, recorded by HPLC 480 nm wavelength.