Electronic Supplementary Material (ESI) for RSC Advances.

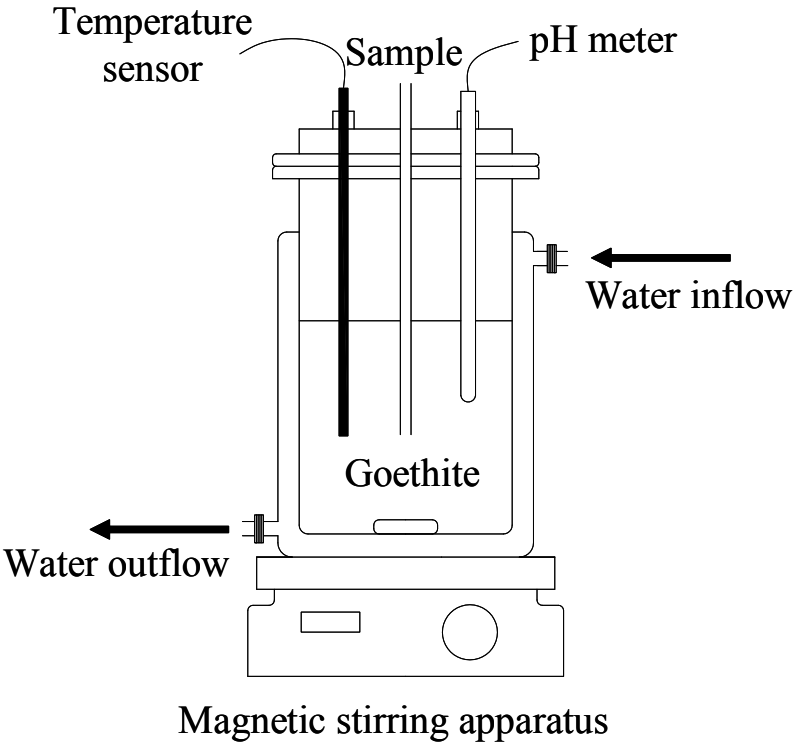

Fig. S1 The schematic diagram of experimental apparatus for kinetic study

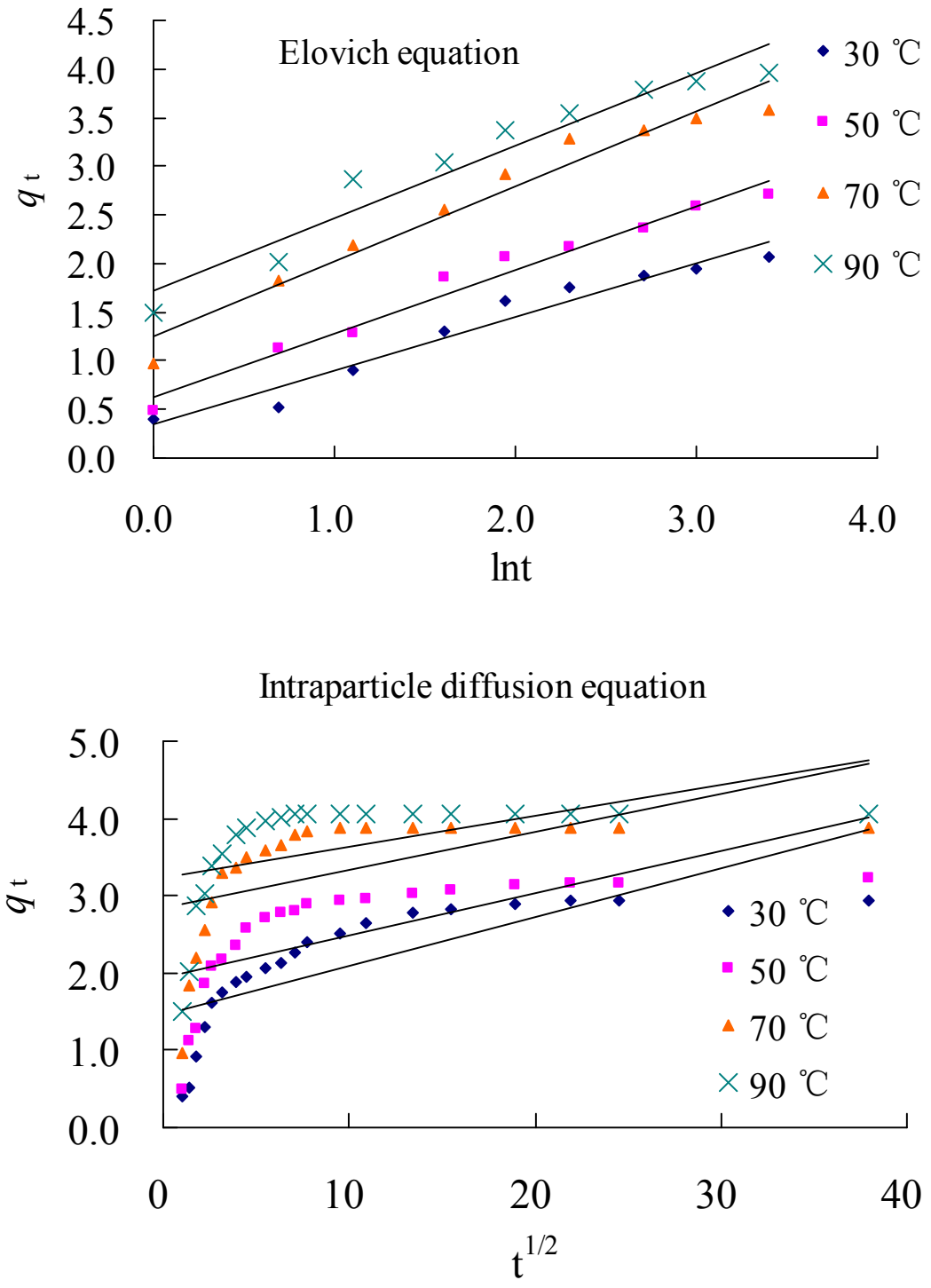

Fig. S2 The intraparticle diffusion model and Elovich equation fitting curves for arsenate adsorption onto goethite at pH 4.6.

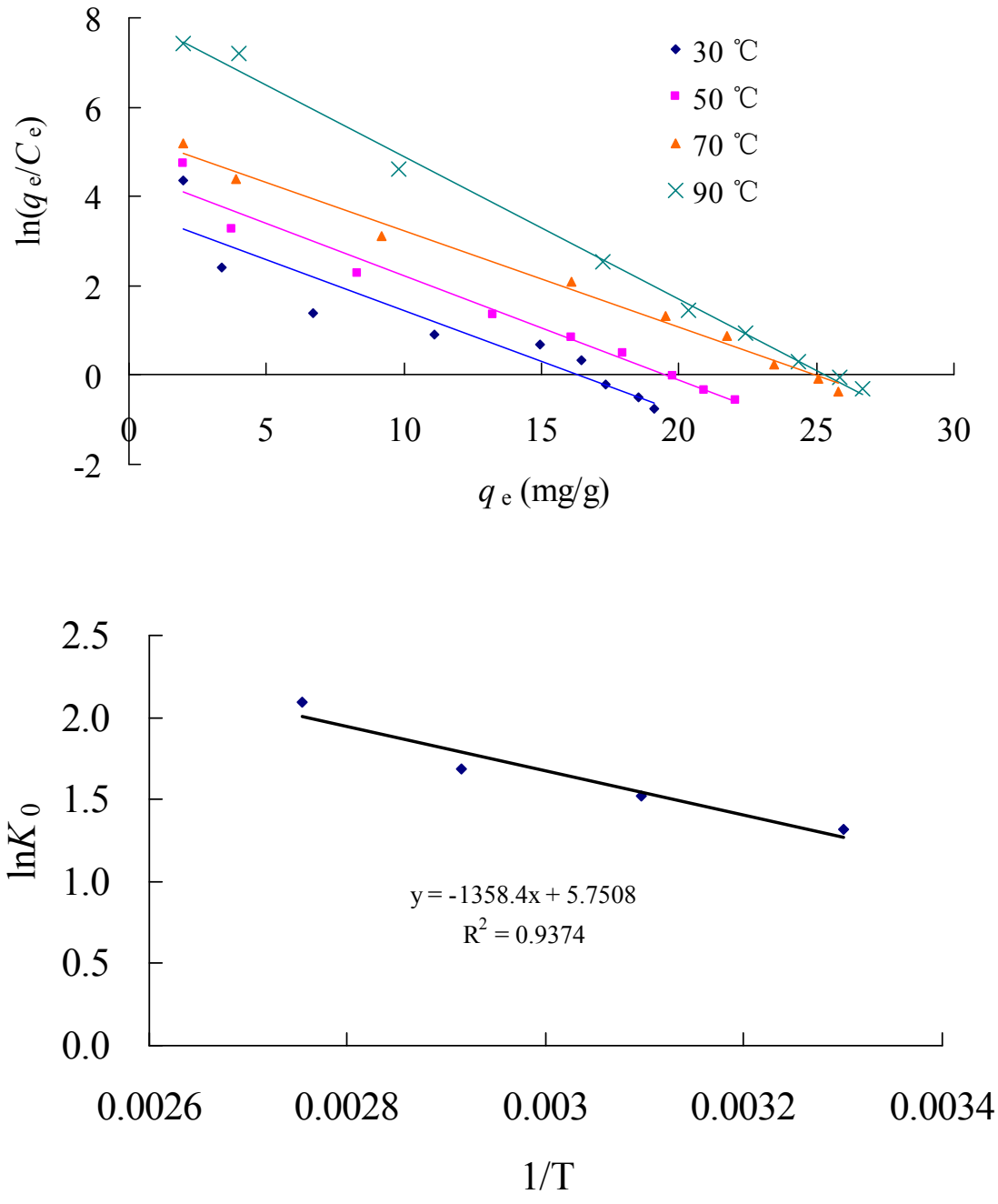

Fig. S3 Plots of $\ln(q_e/C_e)$ vs. q_e and $\ln K_0$ vs. 1/T for As(Ⅴ) adsorption onto geothite.

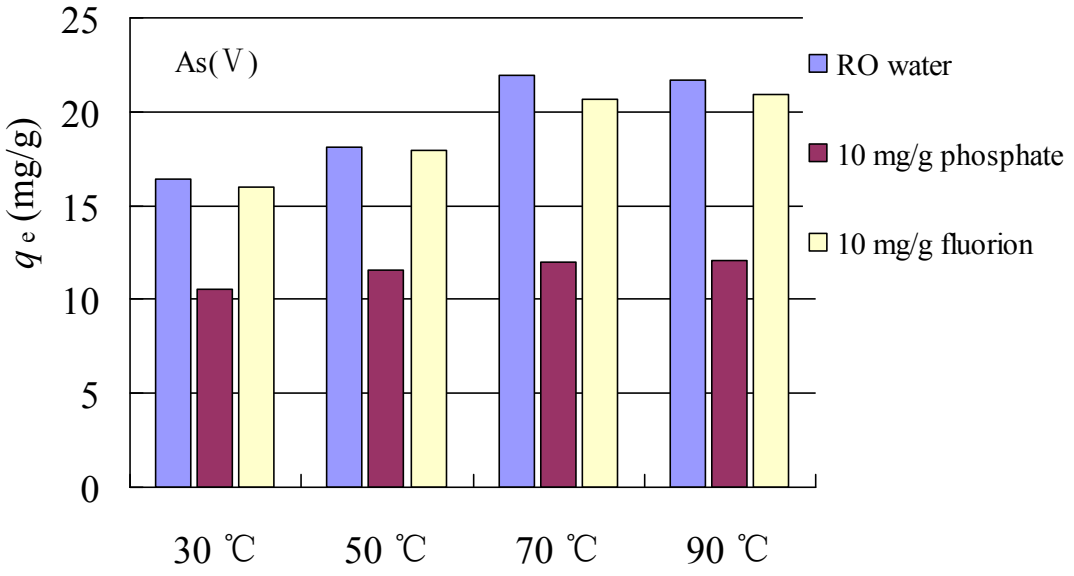

Fig.S4 As(Ⅲ) and As(Ⅴ) adsorption onto geothite with co-existing anions of phosphate and fluorion at 30, 50, 70, 90℃, respectively. (The initial As concentration is 20 mg/L, the initial phosphate and fluorion concentration is 10 mg/L, respectively, geothite concentration 0.5 g/L, pH 4.6.)

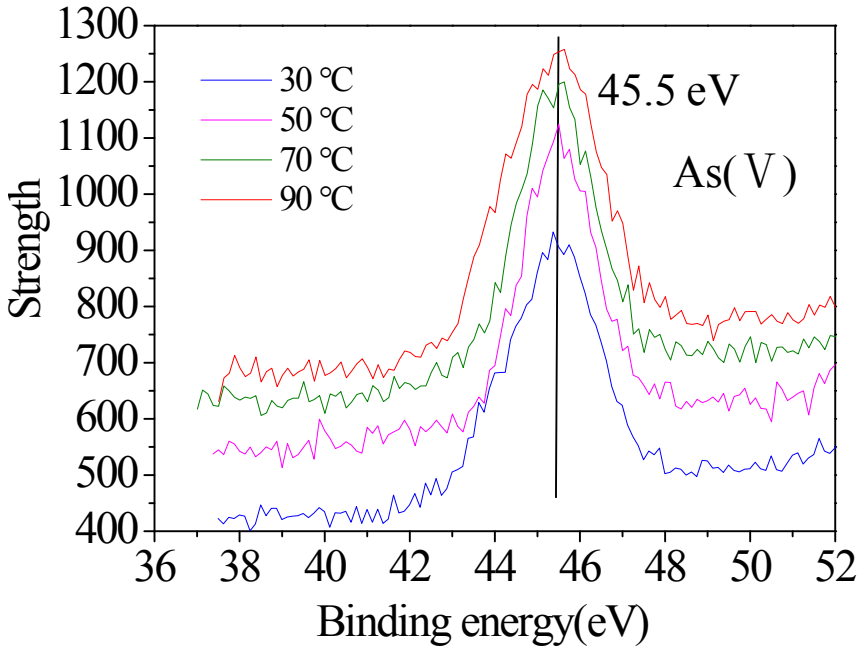

Fig. S5 As3d spectra of goethite after As(V) adsorption.