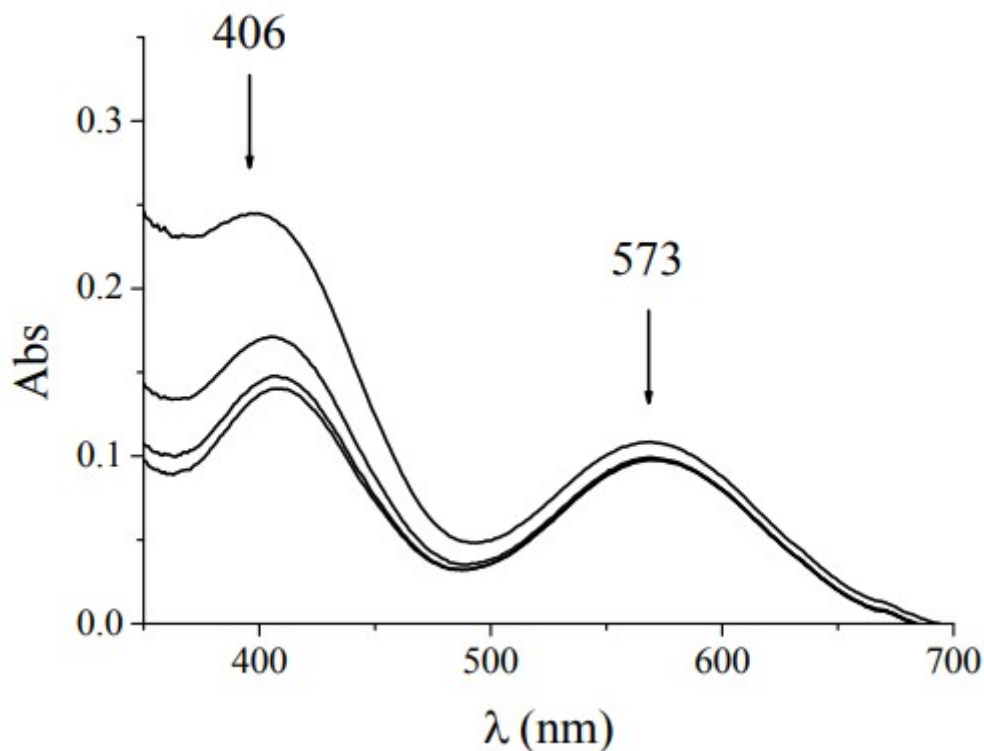
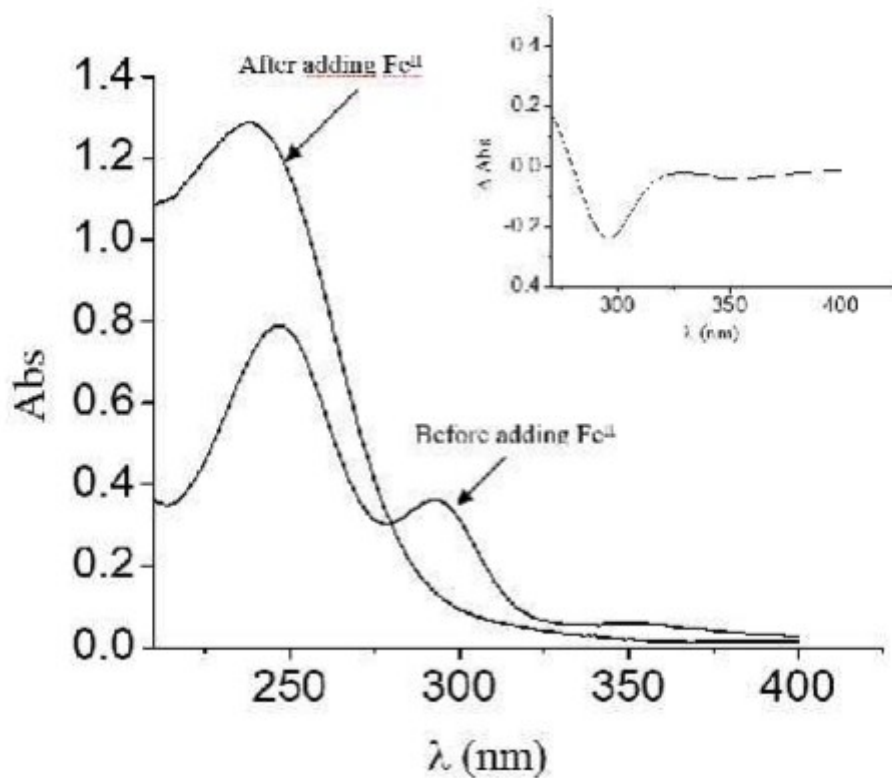


**Fig Sup. Caption**



**Fig. S1.** Time evolution of the QA/Cr<sup>VI</sup> reaction as followed by UV-vis absorption spectroscopy.  $[H^+] = 0.10\text{ M}$ ;  $I = 1.0\text{ M}$ ;  $[Cr^{VI}]_0 = 6.0 \times 10^{-3}\text{ M}$ ;  $[QA] = 0.30\text{ M}$ ;  $T = 33.0^\circ\text{C}$ . First trace was taken at  $t = 15\text{ min}$ , the time between each trace was  $4.0\text{ min}$ . First trace shown taken at  $t=0$ , the time between spectrum is  $20\text{ min}$ .



**Fig. S2.**  $\text{Cr}^{\text{IV}}/\text{Fe}^{\text{II}}$  reaction: differential spectra at 290 nm, consistent with the presence of  $\text{CrO}_2^{2+}$ .  $[\text{H}^+] = 0.30 \text{ M}$ ;  $I = 1.0 \text{ M}$ ;  $[\text{Cr}^{\text{IV}}]_0 = 0.07 \text{ mM}$ ;  $[\text{QA}] = 0.003 \text{ M}$ ;  $T = 15.0^\circ\text{C}$ ;  $[\text{O}_2] = 1.26 \text{ mM}$ ,  $\text{Fe}^{\text{II}} = 0.8 \text{ mM}$ .