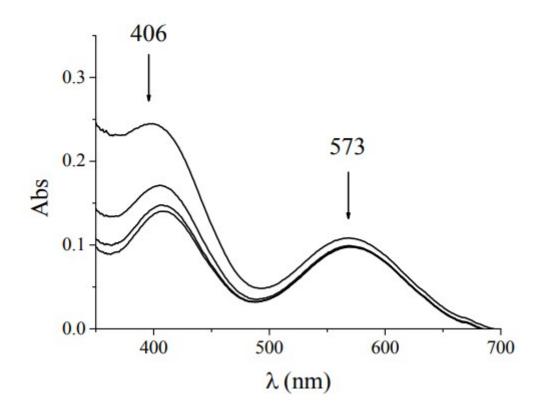
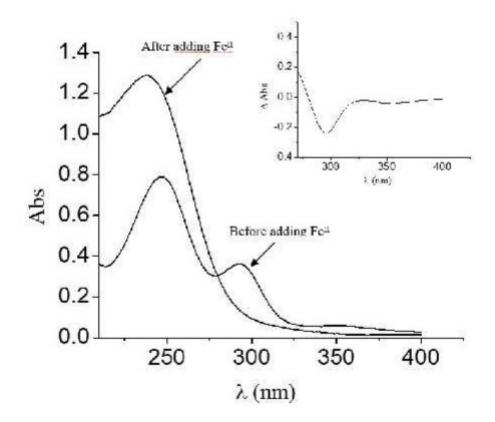
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## Fig Sup. Caption



**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 M;  $[Cr^{VI}]_0 = 6.0 \times 10^{-3} \text{ M}$ ; [QA] = 0.30 M;  $T = 33.0^{\circ}$ C. First trace was taken at t = 15 min, the time between each trace was 4.0 min. First trace shown taken at t=0, the time between spectrum is 20 min.



**Fig. S2**.  $Cr^{IV}/Fe^{II}$  reaction: differential spectra at 290 nm, consistent with the presence of  $CrO_2^{2^+}$ . [H<sup>+</sup>] = 0.30 M; I = 1.0 M; [ $Cr^{IV}$ ]<sub>0</sub> = 0.07 mM; [QA] = 0.003 M; T = 15.0°C; [ $O_2$ ] = 1.26 mM, Fe<sup>II</sup> = 0.8 mM.