

Electronic Supplementary Information

Substrate versus oxidant activation in $\text{Ru}^{\text{III}}(\text{edta})$ catalyzed dye degradation

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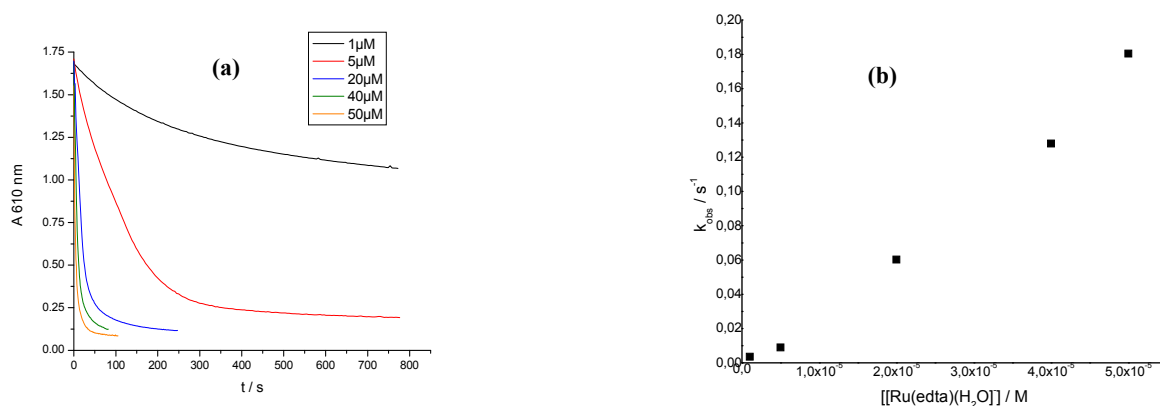


Figure S1. (a) Effect of $\text{Ru}(\text{edta})$ catalyst concentration on the degradation of MB by H_2O_2 . (b) Plot of k_{obs} versus $[\text{Ru}(\text{edta})]$. $[\text{H}_2\text{O}_2] = 10 \text{ mM}$, $[\text{MB}] = 0.05 \text{ mM}$ at pH 4.9 (1 mM acetate buffer) and 25°C .

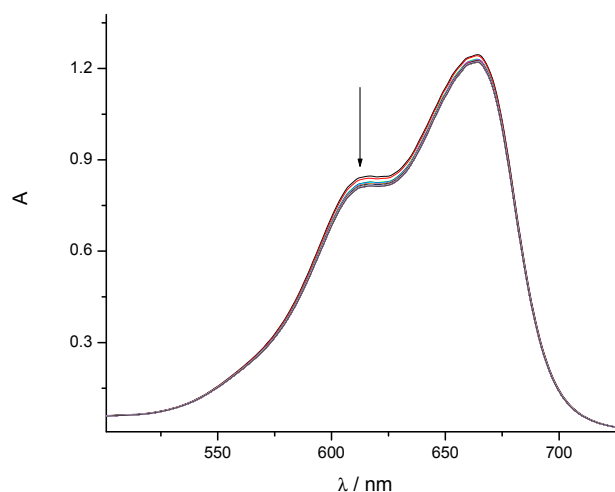


Figure S2. Spectral changes observed for the reaction of $[\text{Ru}^{\text{III}}(\text{edta})(\text{H}_2\text{O})]^-$ (0.05 mM) with MB (0.05 mM) at 25°C and pH 4.9 (1 mM acetate buffer).

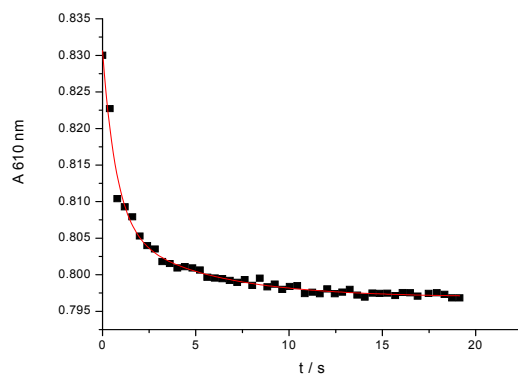


Figure S3. Kinetic trace recorded for the reaction of $[\text{Ru}^{\text{III}}(\text{edta})(\text{H}_2\text{O})]^-$ (0.05 mM) with MB (0.05 mM) at 25 °C and pH 4.9 (1 mM acetate buffer).

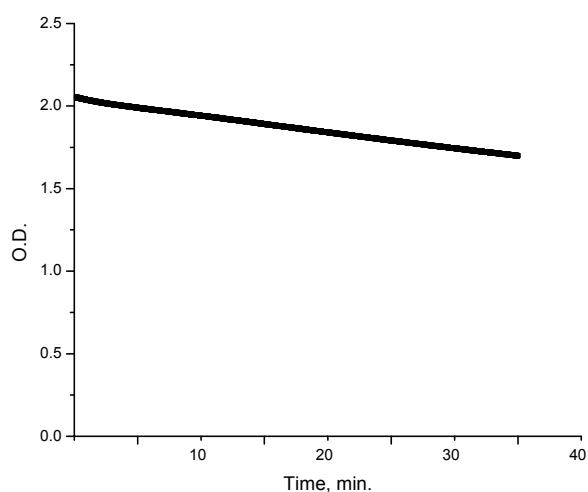


Figure S4. Kinetic trace recorded for the reaction of MB (0.1 mM) with 0.05 mM of $[\text{Ru}^{\text{V}}(\text{edta})\text{O}]^-$ (preformed by reacting $[\text{Ru}^{\text{III}}(\text{edta})(\text{H}_2\text{O})]^-$ with H_2O_2 in a 1:1 ratio) at 25 °C and pH 4.9 (1 mM acetate buffer).

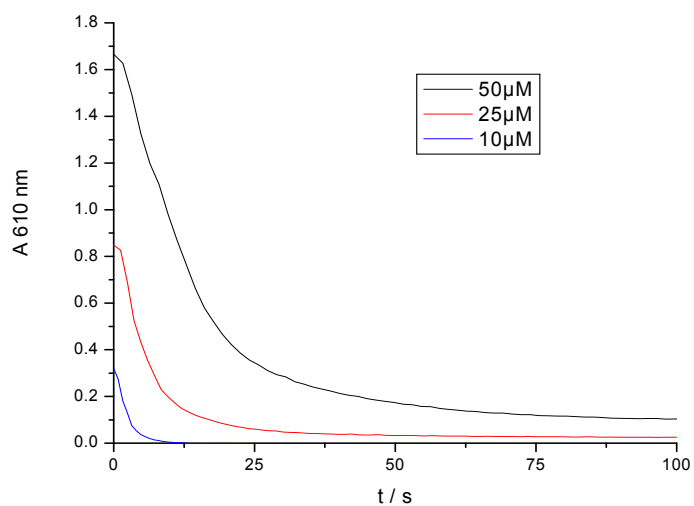


Figure S5. Kinetic traces recorded for the reaction of MB with 0.05 mM of $[\text{Ru}^{\text{III}}(\text{edta})(\text{H}_2\text{O})]^-$ as a function of MB concentration. $[\text{H}_2\text{O}_2] = 10 \text{ mM}$, 25°C and pH 4.9 (1 mM acetate buffer).