

## Supplementary Materials

For

# Efficient decolorization of the azo dye Orange II in a UV-Fe<sup>3+</sup>-PMS-oxalate system

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**Figure S1:** The absorption spectra of Fe<sup>3+</sup>, PMS, oxalate, Fe<sup>3+</sup>-oxalate complexes and Orange II ([Fe<sup>3+</sup>] = 100 μM, [Orange II] = 50 μM, [PMS] = 150 μM, [oxalate] = 80 μM).

**Figure S2:** The comparison of UVA-Fe<sup>3+</sup>-PMS-oxalate system and Fe<sup>3+</sup>-PMS-oxalate system ([Fe<sup>3+</sup>]<sub>0</sub> = 100 μM [Orange II]<sub>0</sub> = 50 μM, [PMS]<sub>0</sub> = 150 μM, [oxalate]<sub>0</sub> = 80 μM).

**Figure S3:** The effect of light wavelength on the decolorization of Orange II ([Fe<sup>3+</sup>]<sub>0</sub> = 100 μM, [Orange II]<sub>0</sub> = 50 μM, [PMS]<sub>0</sub> = 150 μM, [oxalate]<sub>0</sub> = 80 μM).

**Table S1.** Fe<sup>2+</sup> production in the UVA-Fe<sup>3+</sup>-PMS-oxalate system at pH 3.0 at different time ([Fe<sup>3+</sup>]<sub>0</sub> = 100 μM, [PMS]<sub>0</sub> = 150 μM, [oxalate]<sub>0</sub> = 80 μM, [under UVA irradiation](#), λ<sub>irr.</sub> = 365 nm).

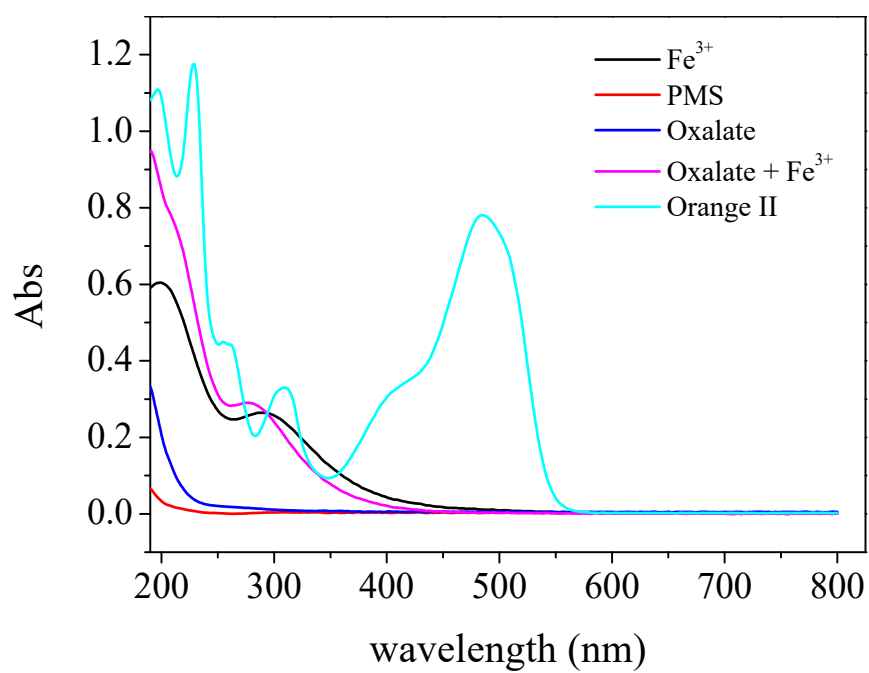


Figure S1

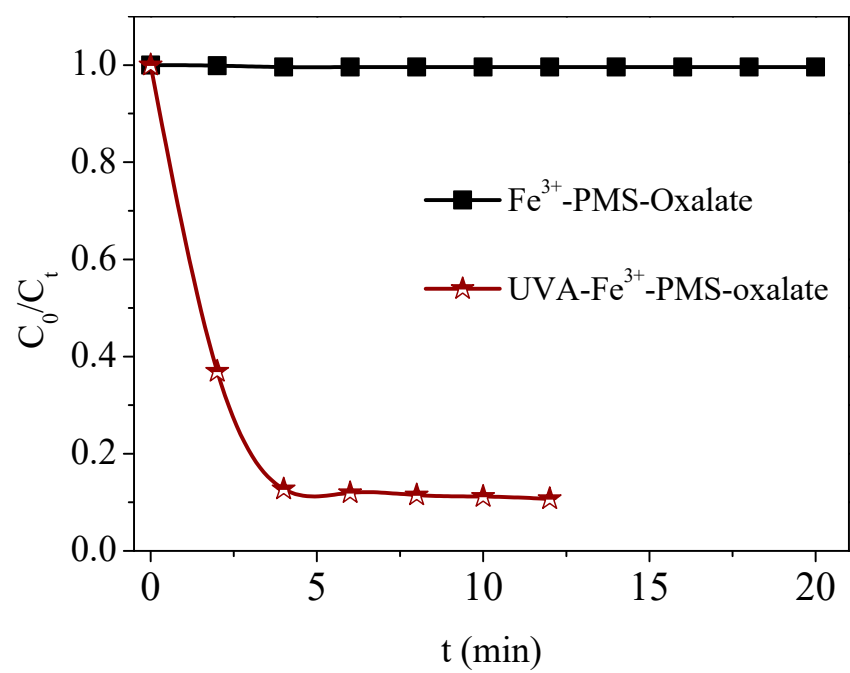


Figure S2

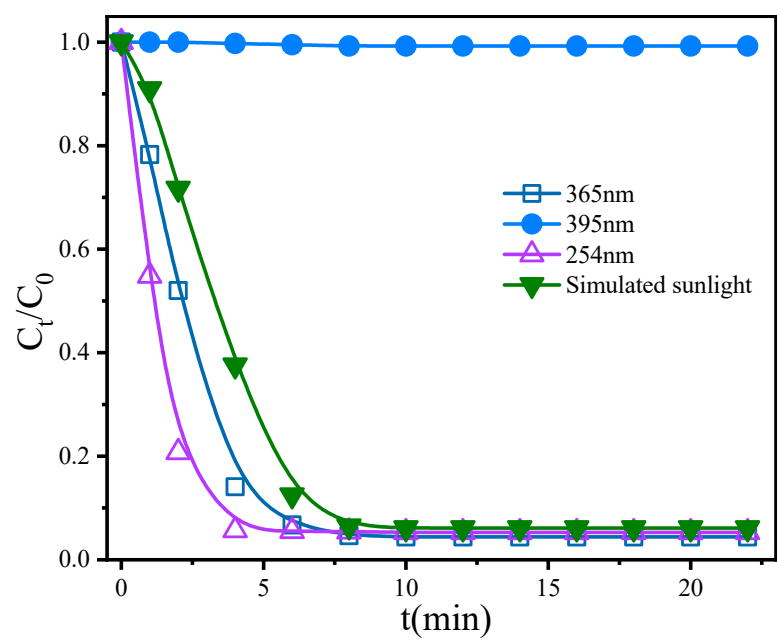


Figure S3

**Table S1**

<b>Time (min)</b>	<b>Production of Fe<sup>2+</sup> (μM)</b>
0	0
1	1.01
4	4.34
6	22.56
8	35.02
10	42..42