

Synthesis of Gd_2O_3 nanoparticles and their photocatalytic activity for degradation of azo dyes

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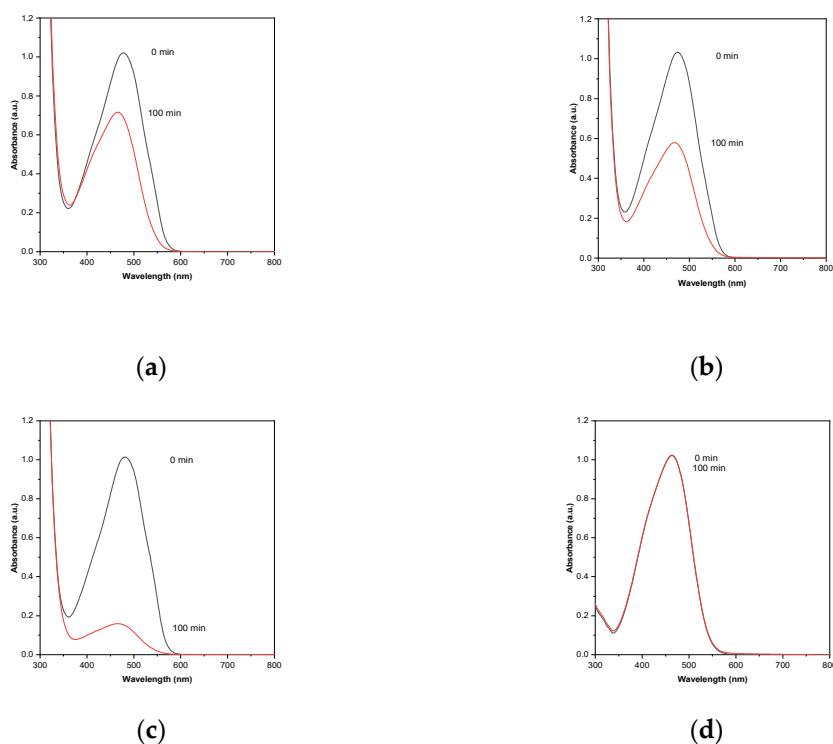


Figure S1. UV-vis absorption spectra of photocatalytic degradation of the MO dye (a) UV/ H_2O_2 (b) $\text{H}_2\text{O}_2/\text{Gd}_2\text{O}_3$ (c) UV/ $\text{H}_2\text{O}_2/\text{Gd}_2\text{O}_3$ (d) UV/ Gd_2O_3 methods within the time period of 100 min. (Experimental conditions: initial dye concentration 0.042 mM; wavelength of UV irradiation: 254 nm; H_2O_2 concentration: 500 mM; photocatalyst concentration: 1.0 g/L.)

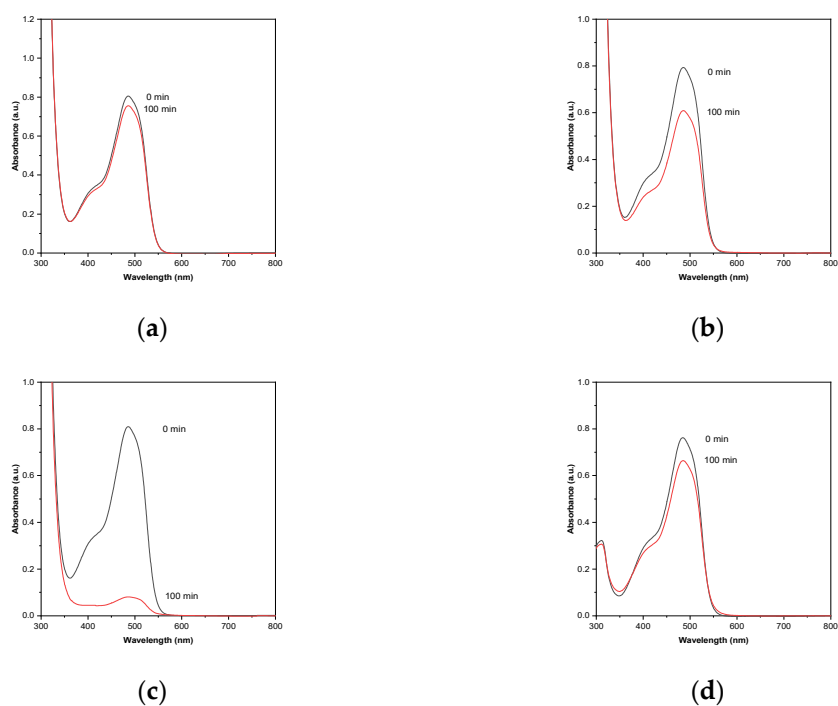


Figure S2. UV-vis absorption spectra of photocatalytic degradation of the AO7 dye (a) UV/H₂O₂ (b) H₂O₂/Gd₂O₃ (c) UV/H₂O₂/Gd₂O₃ (d) UV/Gd₂O₃ methods within the time period of 100 min. (Experimental conditions: initial dye concentration 0.042 mM; wavelength of UV irradiation: 254 nm; H₂O₂ concentration: 500 mM; photocatalyst concentration: 1.0 g/L.)

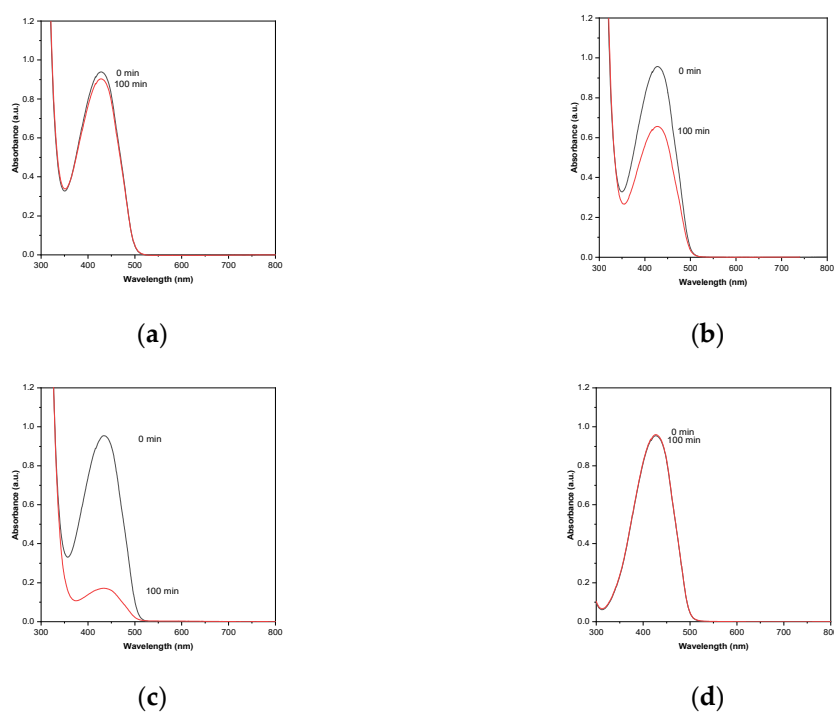


Figure S3. UV-vis absorption spectra of photocatalytic degradation of the AY23 dye (a) UV/ H_2O_2 (b) $\text{H}_2\text{O}_2/\text{Gd}_2\text{O}_3$ (c) UV/ $\text{H}_2\text{O}_2/\text{Gd}_2\text{O}_3$ (d) UV/ Gd_2O_3 methods within the time period of 100 min. (Experimental conditions: initial dye concentration 0.042 mM; wavelength of UV irradiation: 254 nm; H_2O_2 concentration: 500 mM; photocatalyst concentration: 1.0 g/L.)

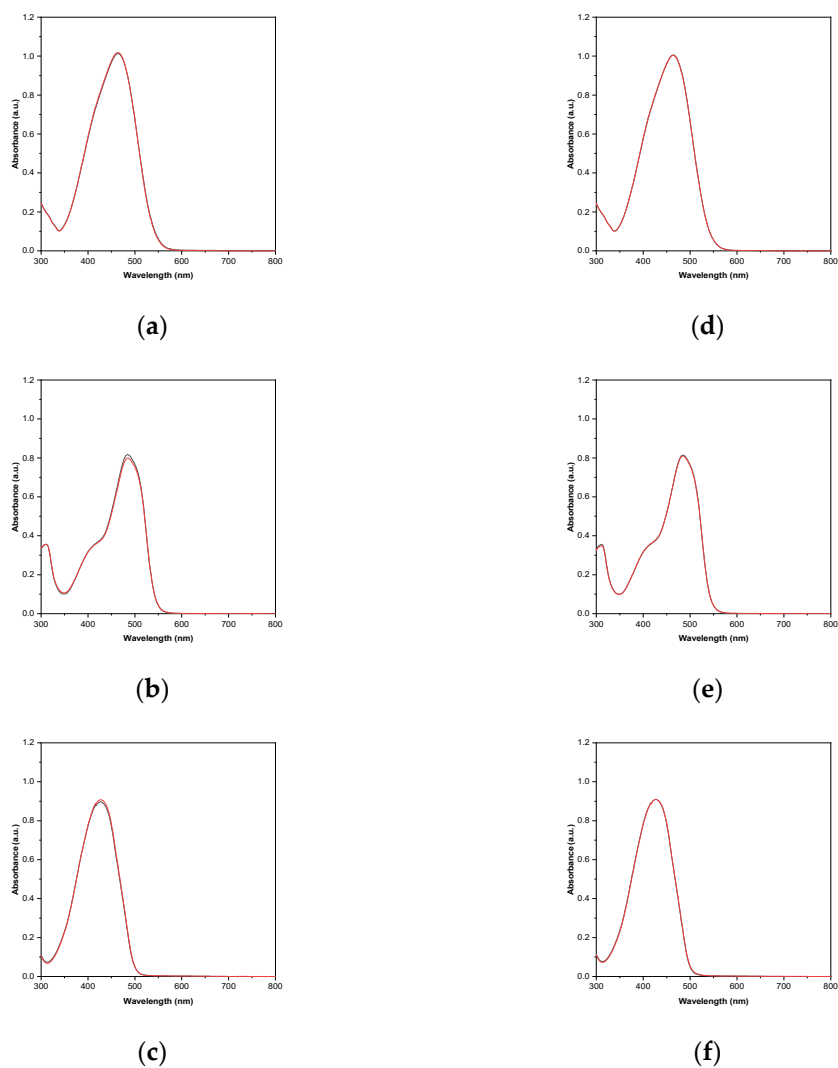


Figure S4. UV-vis absorption spectra of the (a) MO, (b) AO7, (c) AY23 under 254 nm irradiation and (d) MO, (e) AO7, (f) AY23 under 365 nm irradiation within the time period of 100 min. (Experimental conditions: initial dye concentration 0.042 mM.)

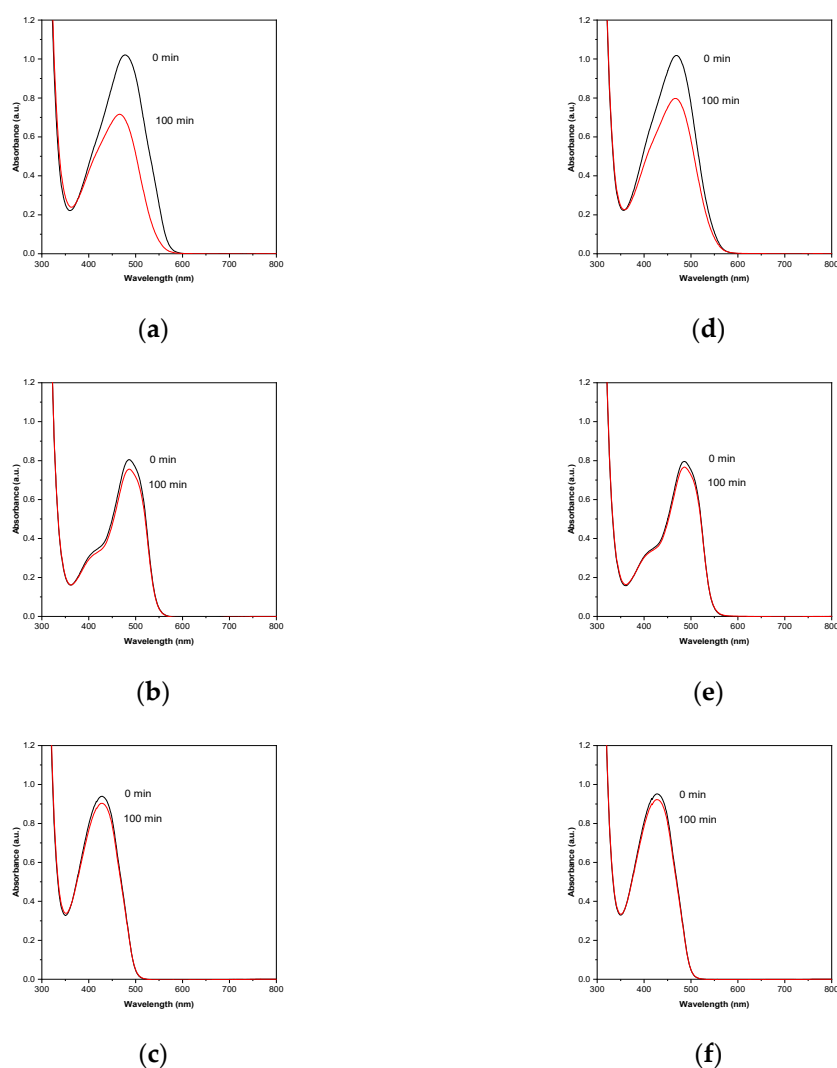


Figure S5. UV-vis absorption spectra of photocatalytic degradation of the (a) MO, (b) AO7, (c) AY23 by UV/H₂O₂ methods under 254 nm irradiation and (d) MO, (e) AO7, (f) AY23 under 365 nm irradiation within the time period of 100 min. (Experimental conditions: initial dye concentration 0.042 mM; H₂O₂ concentration: 4.8 M)