Supplementary Information

Photostability challenges of catechol-derived LMCT complexes on TiO_2 for visible-light-driven photocatalytic air purification

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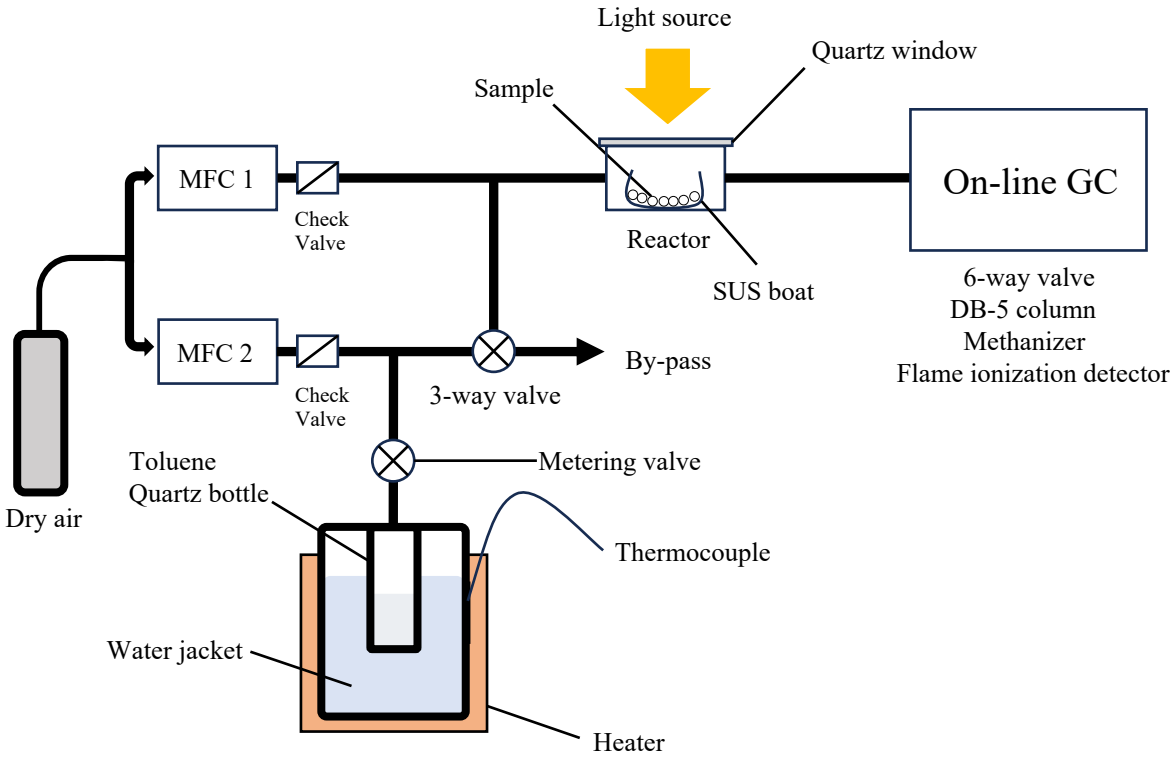

Figure S1. The experimental set-up for photostability and photocatalytic activity measurements.

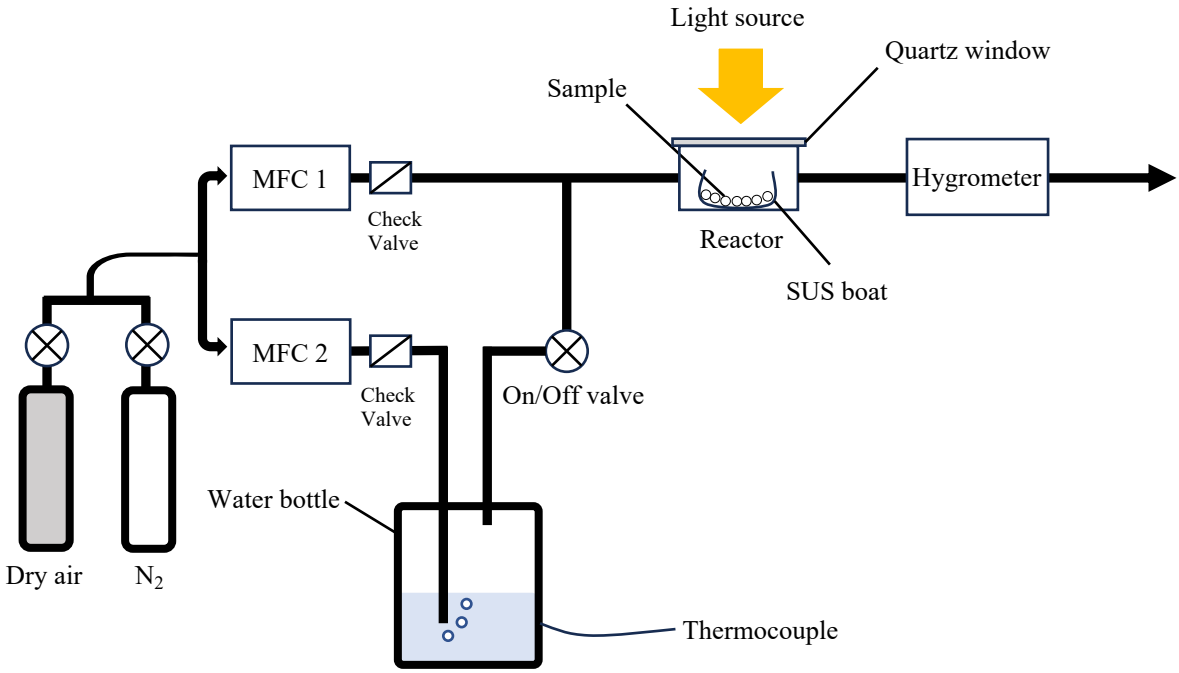

Figure S2. The experimental set-up for photostability tests under various conditions (dry air, humid air, dry N_2, and humid N_2).

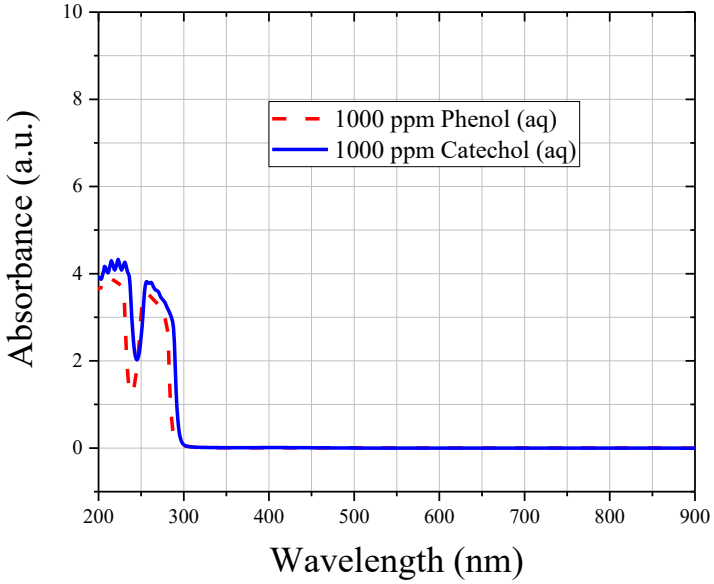

Figure S3. UV-vis absorption spectra of phenol and catechol solutions (1000 ppm).

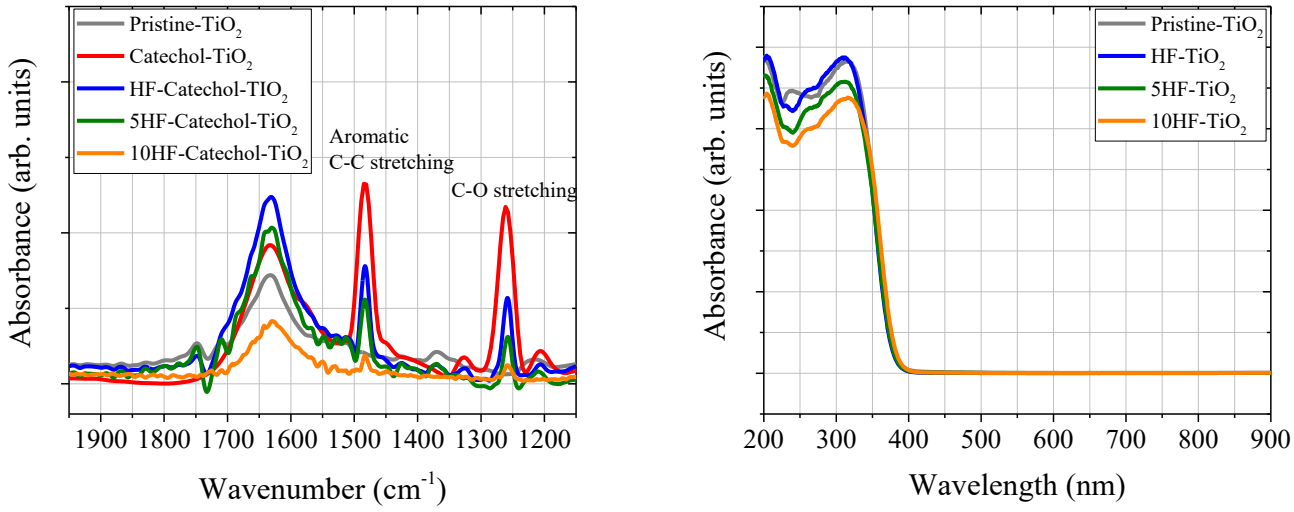

Figure S4. FT-IR spectra of pristine-TiO_2, catechol-TiO_2, HF-Catechol-TiO_2, 5HF-Catechol-TiO_2, and 10HF-Catechol-TiO_2 (Left) and UV-DRS spectra of pristine-TiO_2, HF-TiO_2, 5HF-TiO_2, and 10HF-TiO_2 (Right).

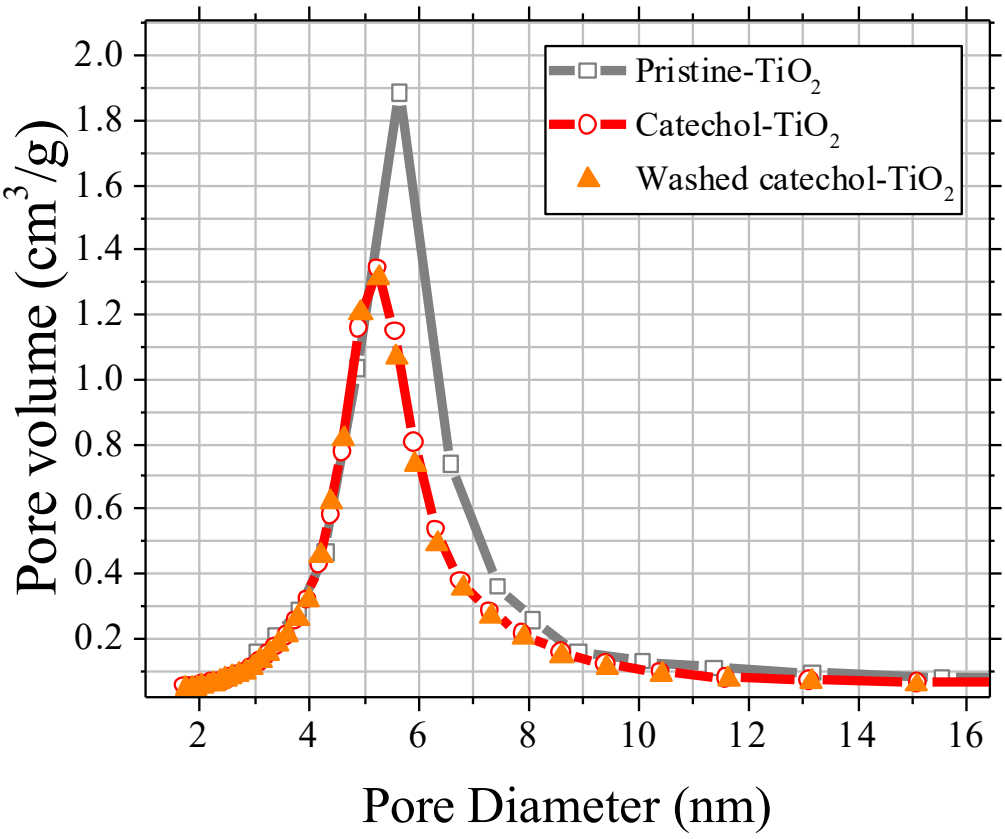

Figure S5. The BJH pore size distributions of pristine-TiO_2, catechol-TiO_2, and washed catechol-TiO_2.

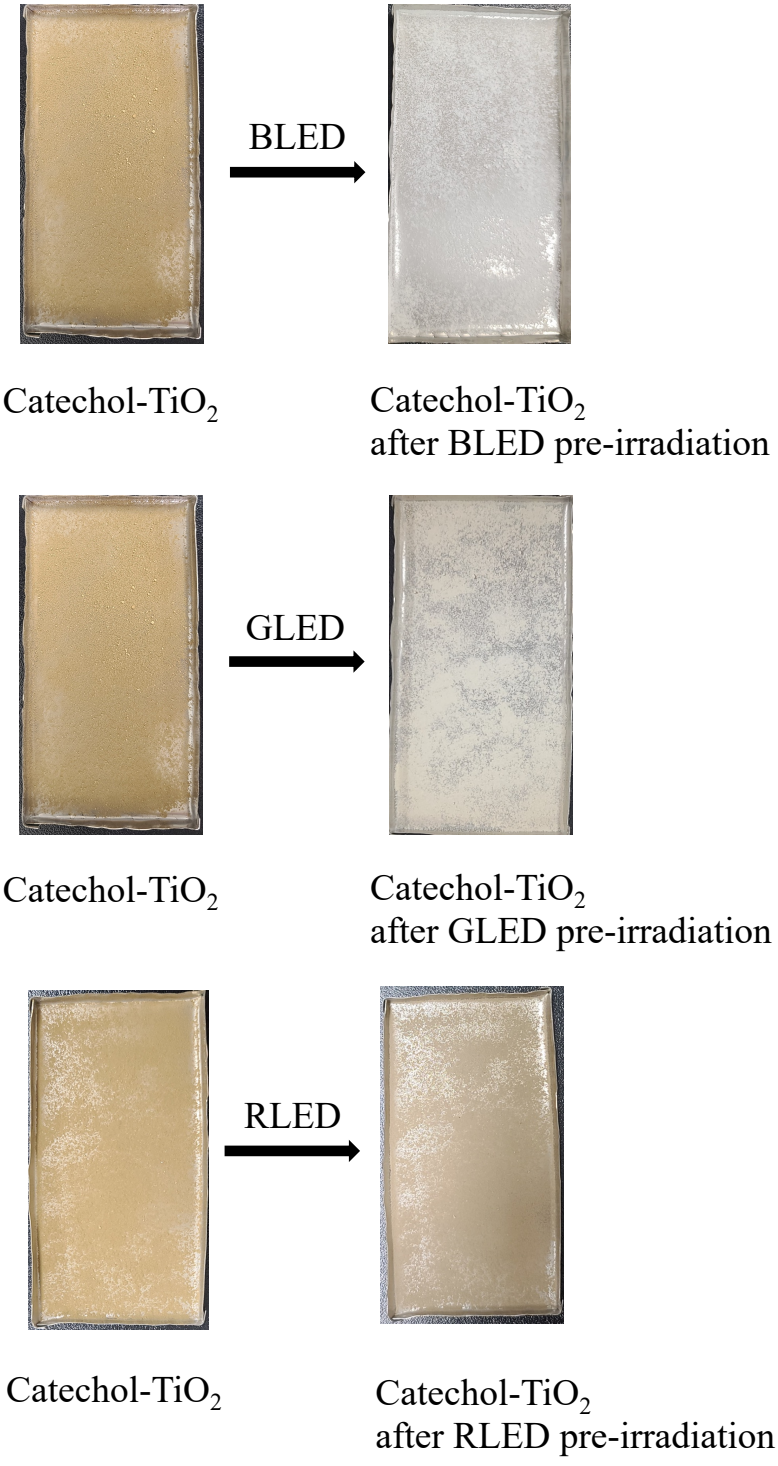

Figure S6. The photos of catechol-TiO_2 taken before and after 6000 minutes of pre-irradiation of blue (top), green (middle), and red (bottom) lights, showing the changes of sample colors after the pre-irradiation.

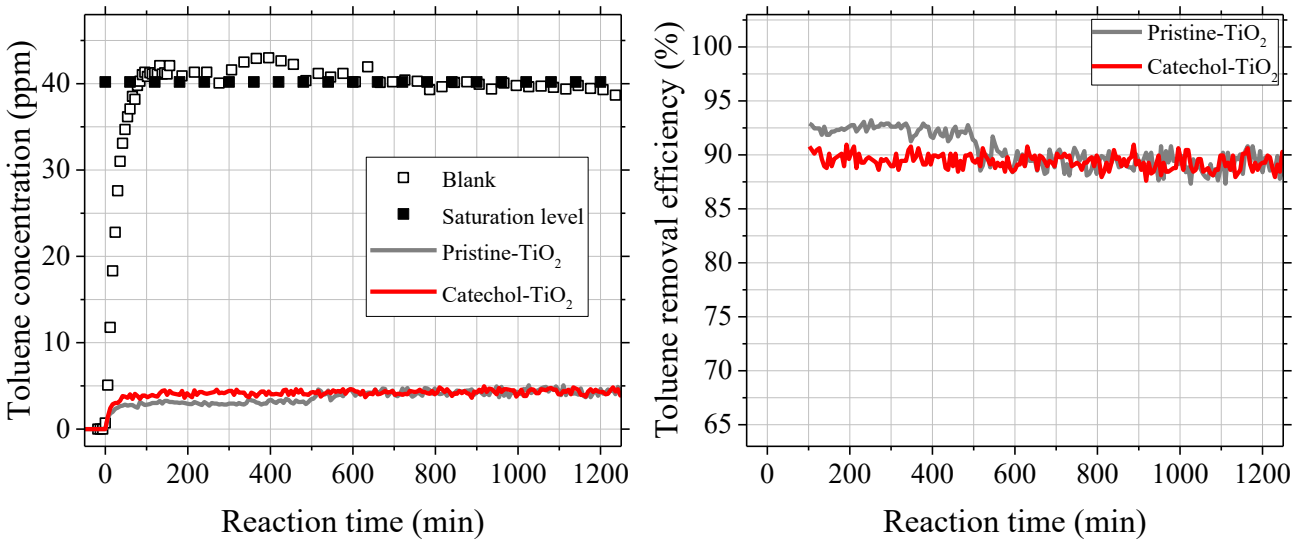

Figure S7. The changes of toluene concentration (Left) and toluene removal efficiency% (Right) in the absence of TiO_2 (blank) and in the presence of pristine-TiO_2 and catechol-TiO_2 under blue light.

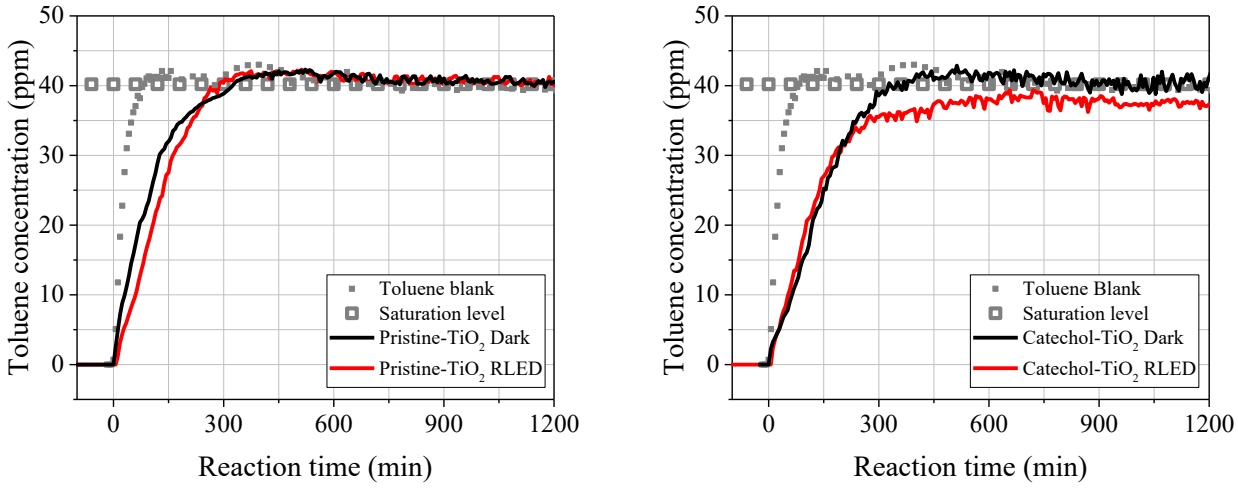

Figure S8. The changes of toluene concentration in the absence of TiO_2 (Toluene blank) and in the presence of pristine-TiO_2 (Left) and catechol-TiO_2 (Right) under dark and red light.