

## New metal-free catalytic degradation systems with carbon dots for thymol blue

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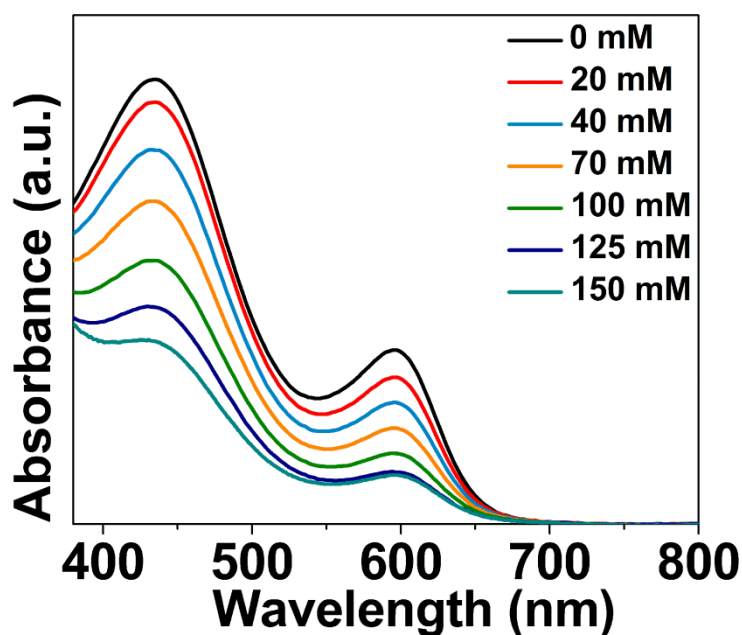


Fig S1 the UV-vis spectra of TB in the CDs/H<sub>2</sub>O<sub>2</sub> system with different H<sub>2</sub>O<sub>2</sub> concentration after 70 min at room temperature.

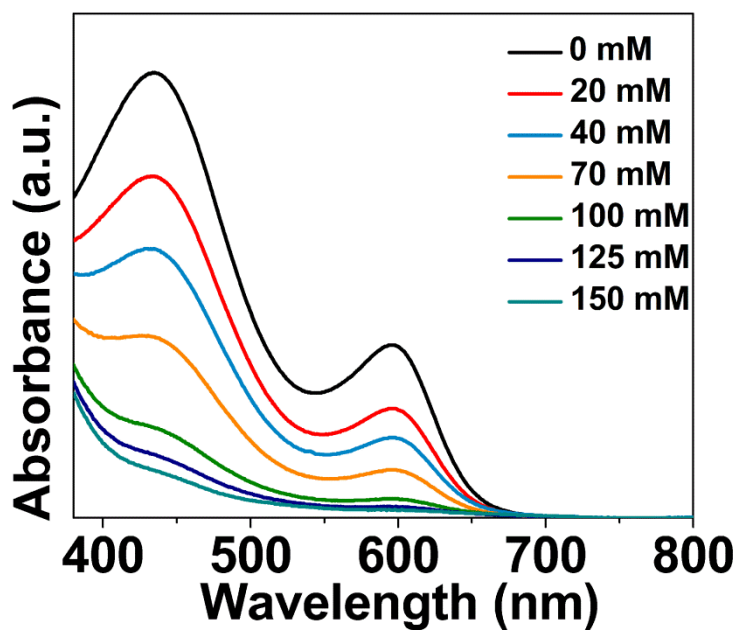


Fig S2: the UV-vis spectra of TB in the CDs/H<sub>2</sub>O<sub>2</sub>/KI system with fixed KI concentration (1 mM) and different H<sub>2</sub>O<sub>2</sub> concentration after 70 min at room temperature.

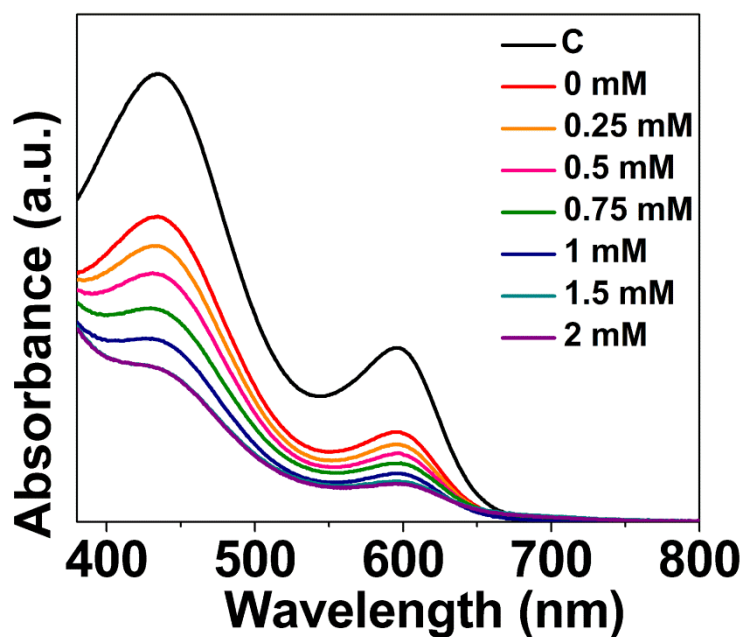


Fig S3: The UV-vis spectra of TB in the CDs/H<sub>2</sub>O<sub>2</sub>/KI system with fixed H<sub>2</sub>O<sub>2</sub> concentration (70 mM) and different KI concentration(0-2 mM) after 70 min in room temperature. And C presents the spectra of TB in the mix solution of CDs and TB after 70 min in room temperature.

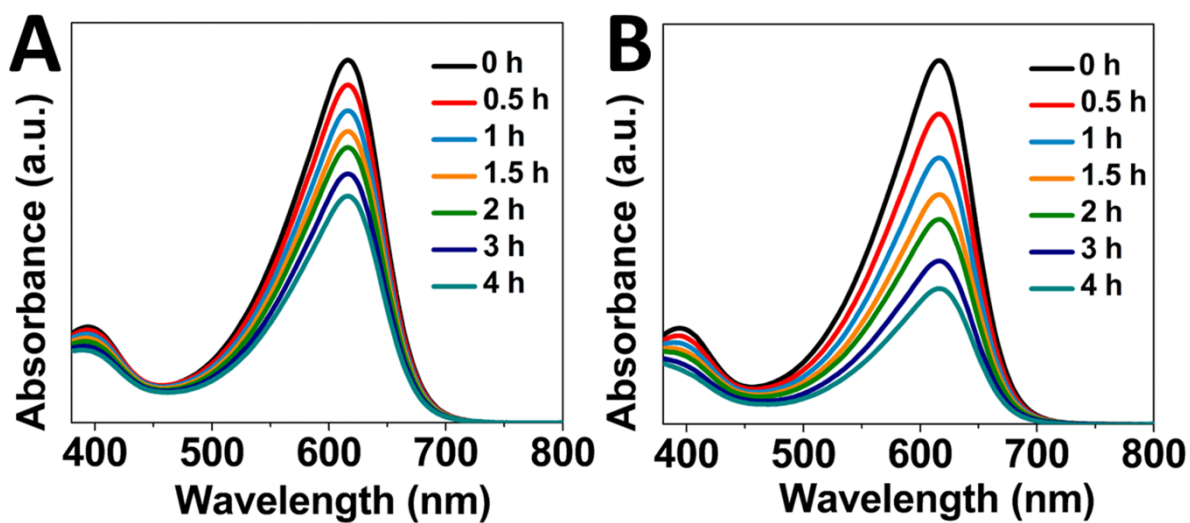


Fig S4: The UV-vis spectra of bromothymol blue in (A) CDs/H<sub>2</sub>O<sub>2</sub> system and (B) CDs/H<sub>2</sub>O<sub>2</sub>/KI system as a function of time during the catalytic degradation.