

Electronic Supplementary Information (ESI) for

**One-step topological preparation of carbon doped
and coated TiO₂ hollow nanocubes and synergistically
enhancing visible photodegradation activity**

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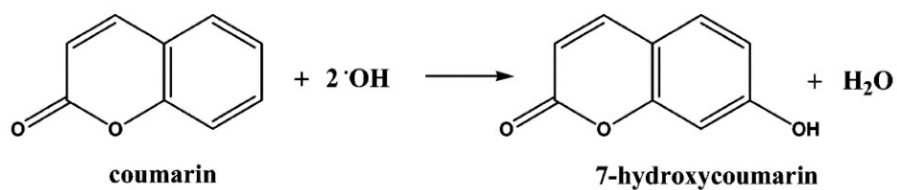
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1. EXPERIMENTAL SECTION



Scheme S1. Formation of 7-hydroxycoumarin in the reaction of coumarin with hydroxyl radical.

2. RESULTS AND DISCUSSION SECTION

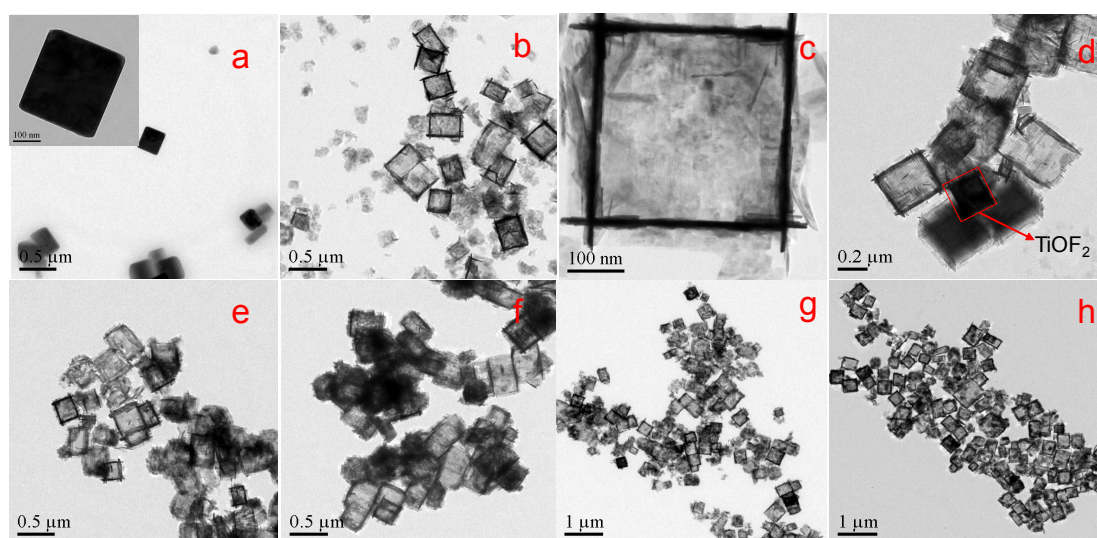


Fig. S1. TEM images of as-synthesized catalysts at different reaction time: (a) TiOF_2 , (b) and (c) TiO_2 -HNBs, (d) T-12, (e) T-18, (f) T-24, (g) T-36, (h) T-48.

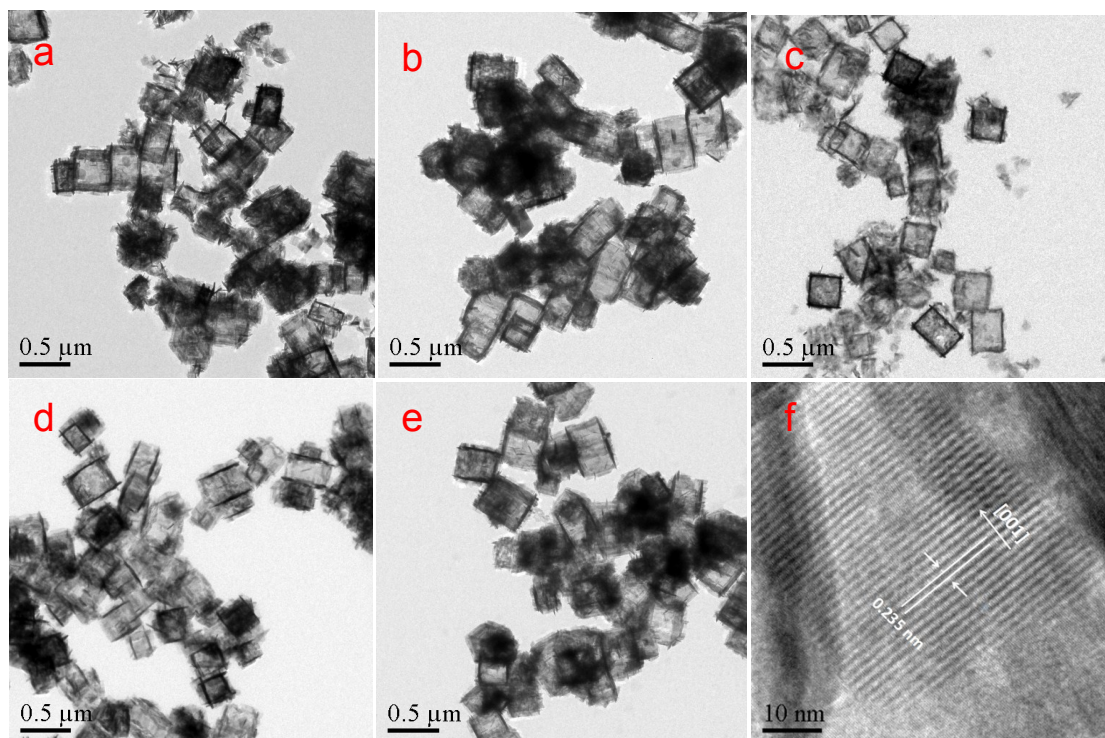


Fig. S2. TEM images of as-prepared catalysts with different mass ratios of Glu/TiO₂ at 24 h: (a) T24-0.05, (b) T24-0.1, (c) T24-0.15, (d) T24-0.2, (e) T24-0.25, (f) HRTEM image of T24-0.1.

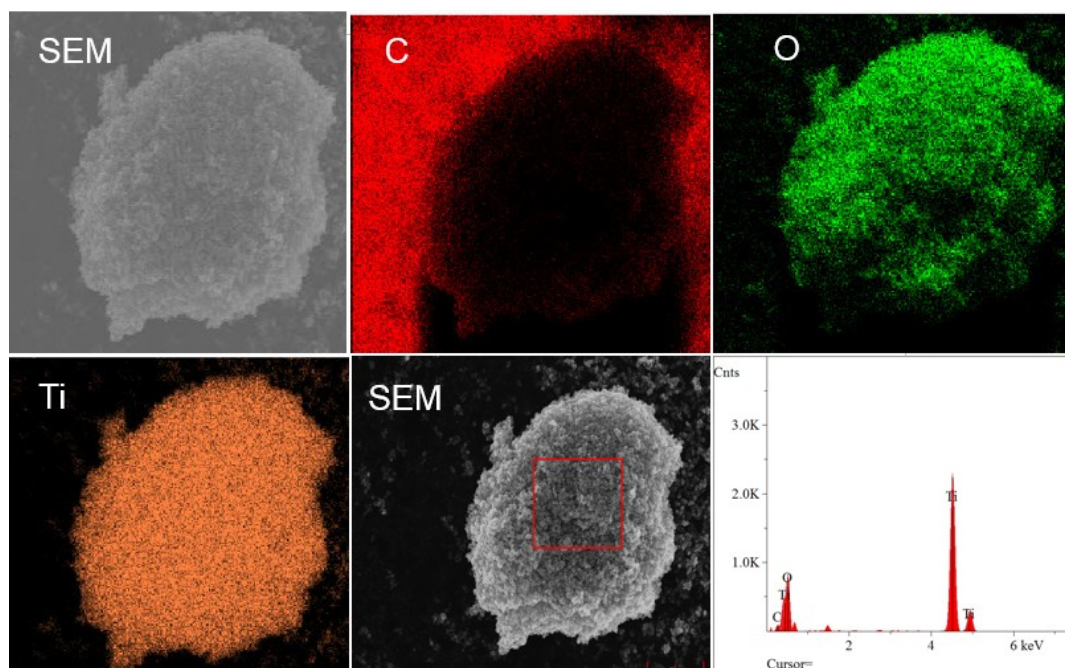


Fig. S3. The scan EDS maps of sample T24-0.15.

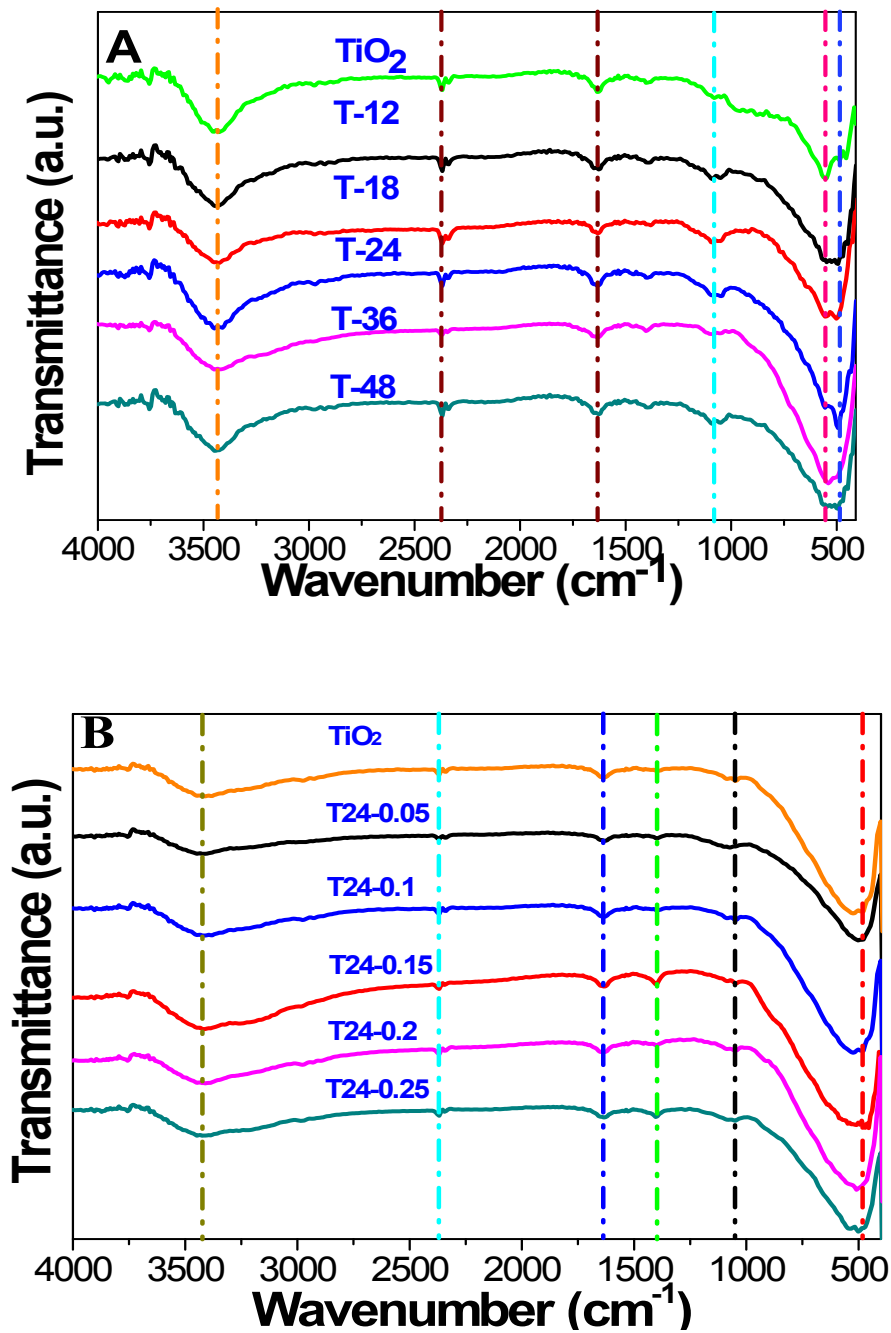


Fig. S4. FT-IR diagram of the catalyst (A Glu/ $\text{TiOF}_2 = 0.1/1$ at 200°C different reaction time, B Glu/ TiOF_2 at different values reaction at 200°C for 24 h).

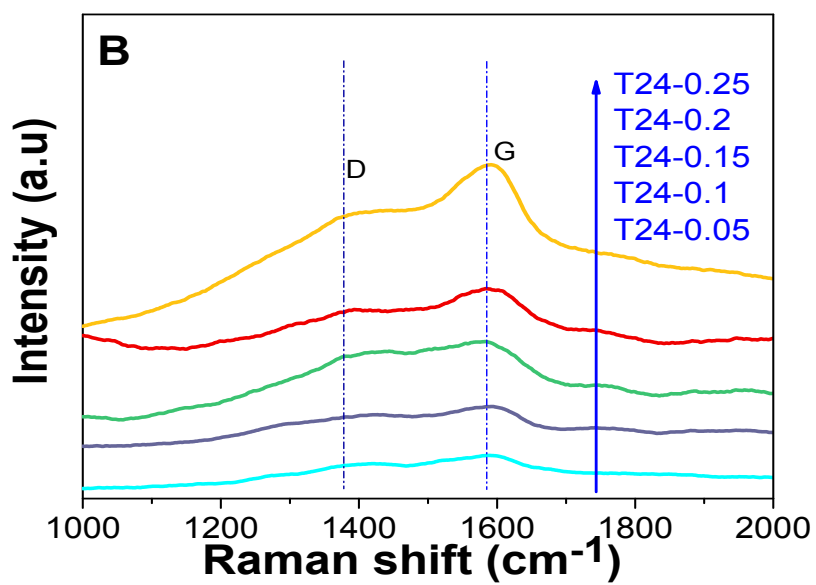
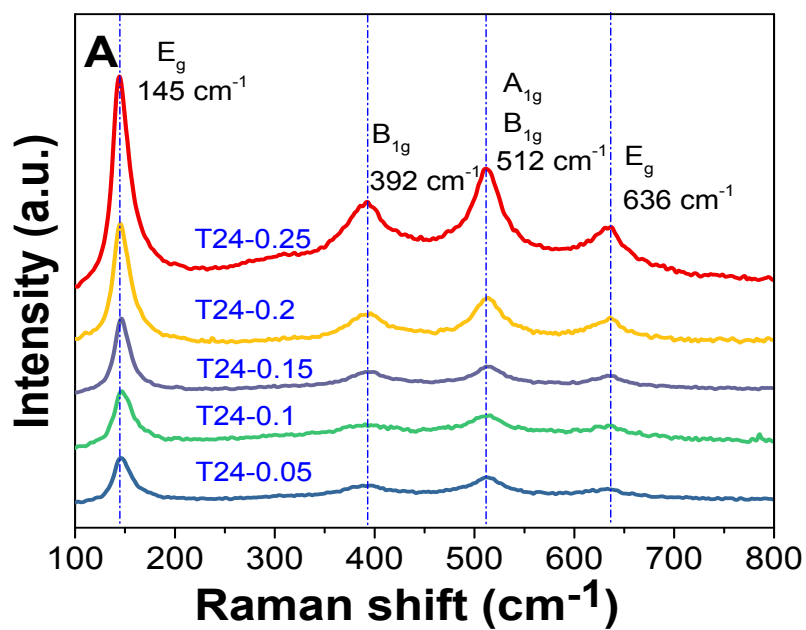


Fig. S5. Raman spectra of as-prepared C@TiO₂-HNBs.

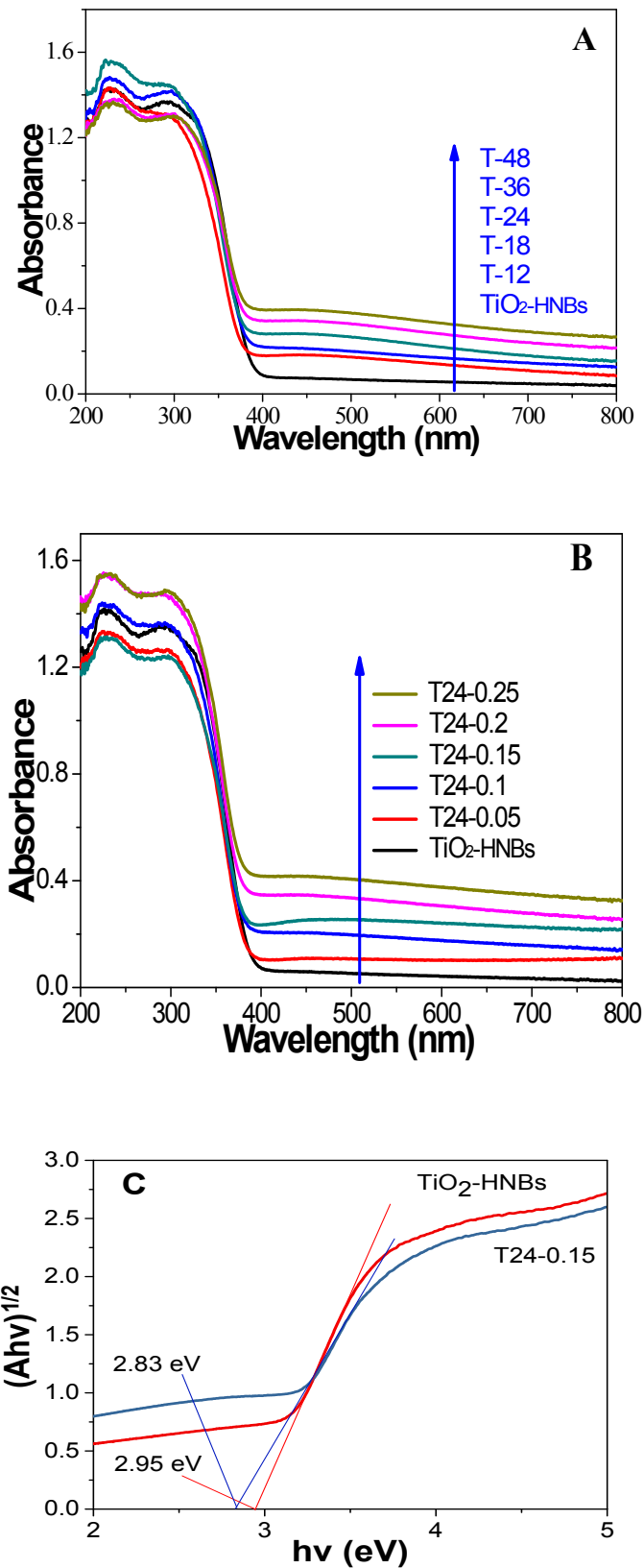


Fig. S6. DRS diagram of as-prepared C@TiO₂-HNBs (A With Glu/TiOF₂=0.1/1 at different reaction time; B With different Glu/TiOF₂ mass ratio reacted at 200 °C for 24 h; C the plot of transformed Kubelka-Munk function versus the photon for TiO₂ and T24-0.15 samples).