

Supplementary information

Enhancement of carbamazepine photodegradation using hybrid of phosphorescent carbon dots coupled with highly porous TiO₂ photocatalyst

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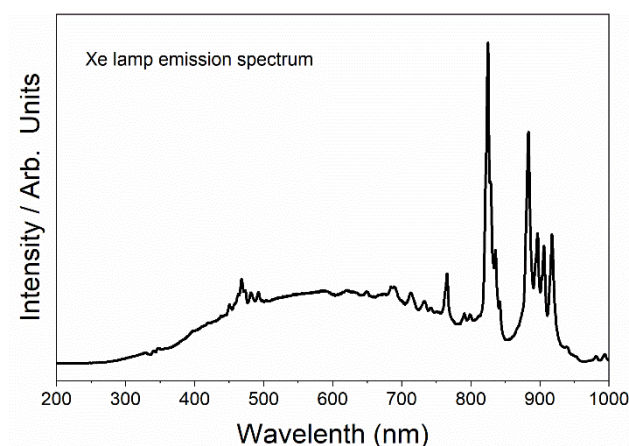


Figure S1. The emission spectrum of the Xe lamp

Table S1. The parameters of the HPLC analysis

Parameter	Value
Wavelength	285 nm
Retention time	4.6 min
Temperature	45 °C
Flow rate	1.5 cm ³ ·min ⁻¹
Mobile phase composition	39.5% acetonitrile, 60% water, and 0.5% orthophosphoric acid

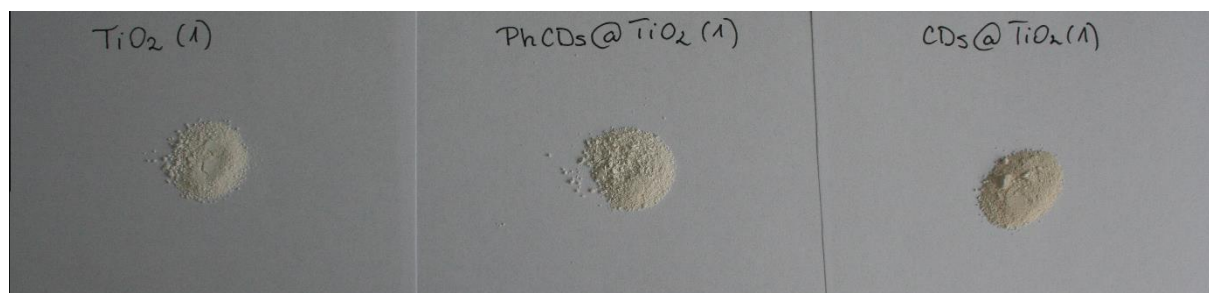


Fig. S2. The image of TiO₂(1), PhCDs and their hybrid compound.

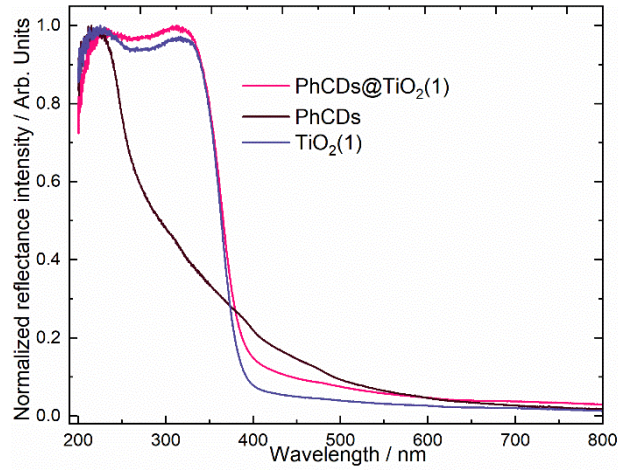


Fig. S3. Normalized absorption spectra of PhCDs@TiO₂(1), PhCDs and TiO₂(1) compounds

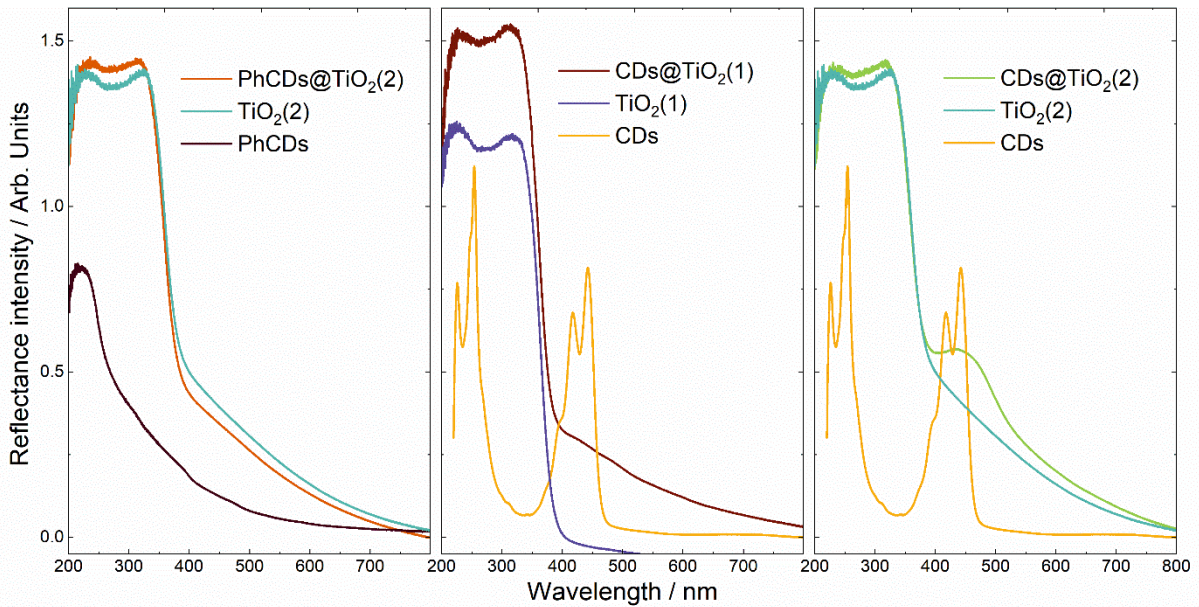


Fig. S4. Absorption spectra of CDs, PhCDs, TiO₂(1), TiO₂(2) and their hybrid compounds.

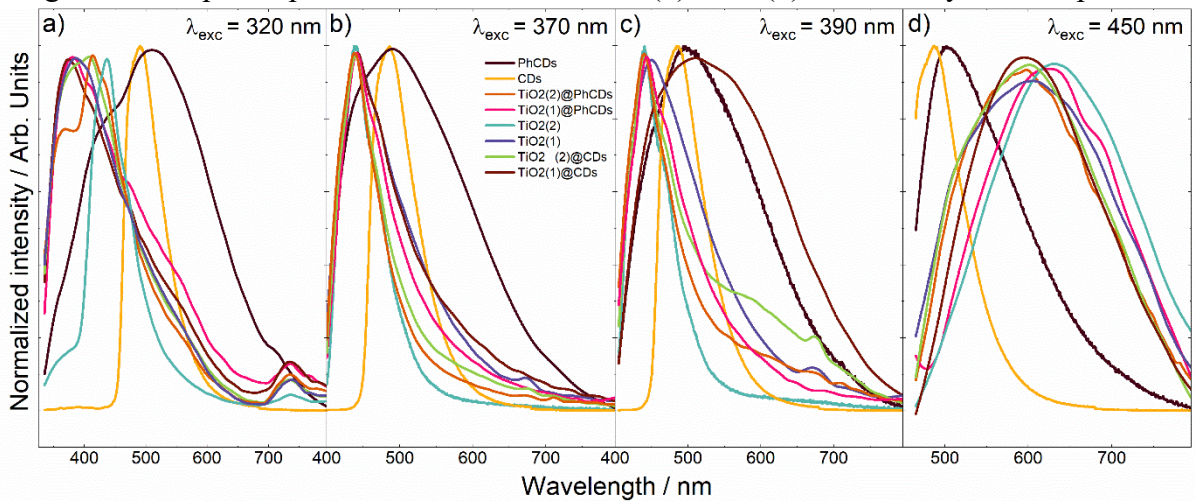


Fig. S5. Normalized emission spectra of CDs, TiO₂ and hybrid materials under excitation wavelength: a) 320 nm, b) 370 nm, c) 390 nm, d) 450 nm

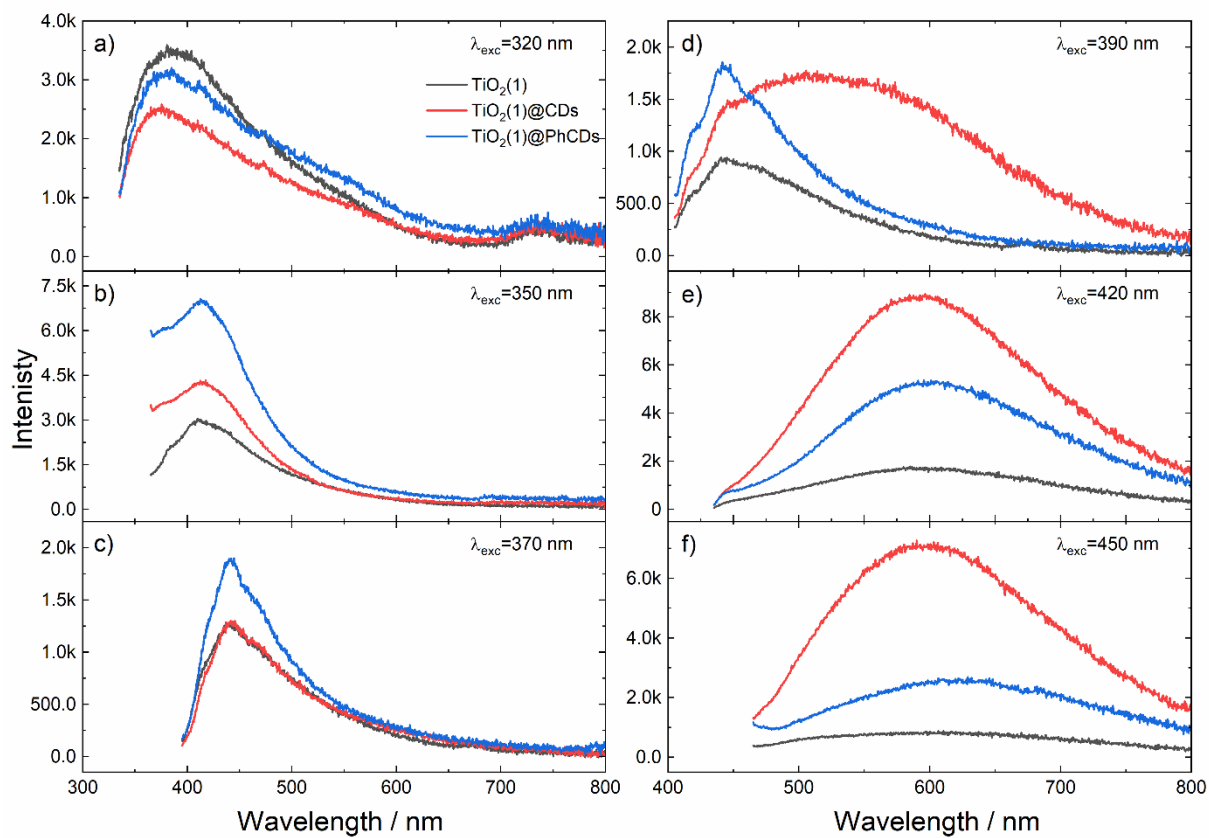


Fig. S6. Emission spectra of $\text{TiO}_2(1)$ and hybrid materials under excitation wavelength a), 320nm, b) 350 nm, c) 370 nm, d) 390 nm, e) 420 nm, f) 450 nm.

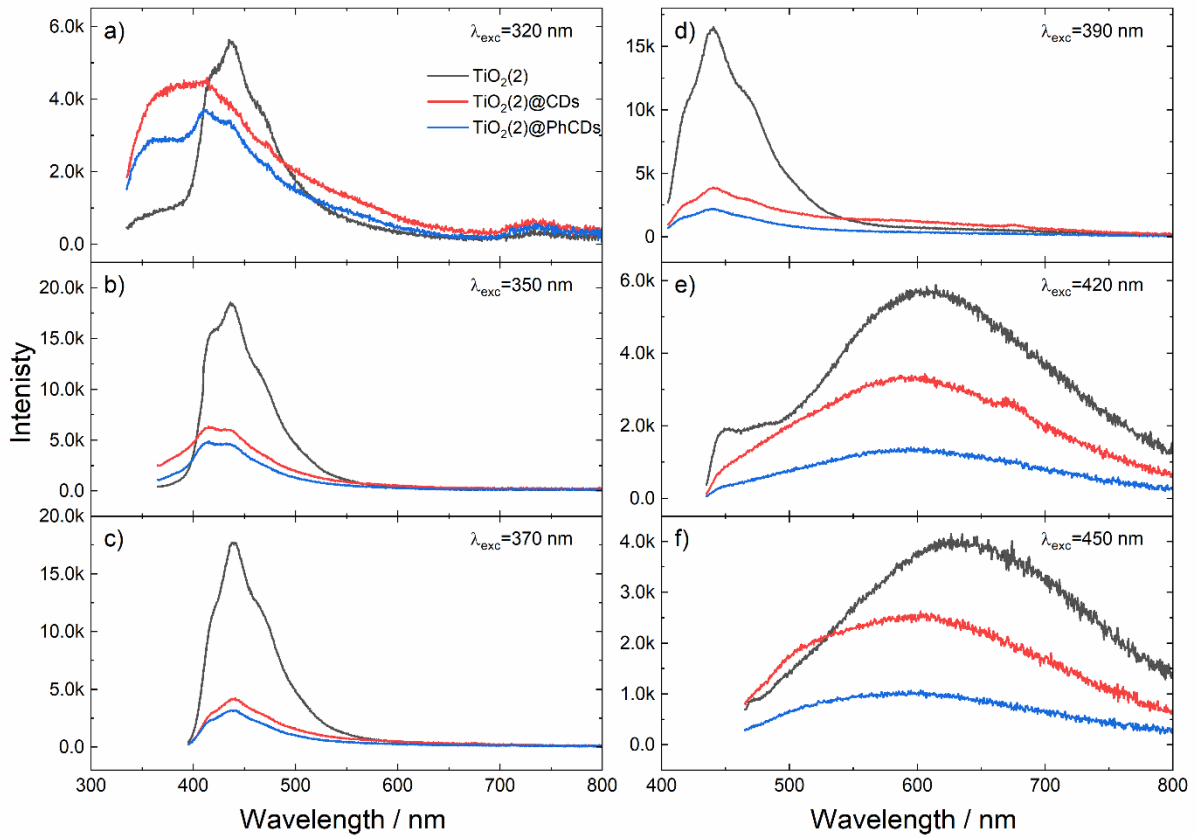


Fig. S7. Emission spectra of $\text{TiO}_2(2)$ and hybrid materials under excitation wavelength a), 320nm, b) 350 nm, c) 370 nm, d) 390 nm, e) 420 nm, f) 450 nm.

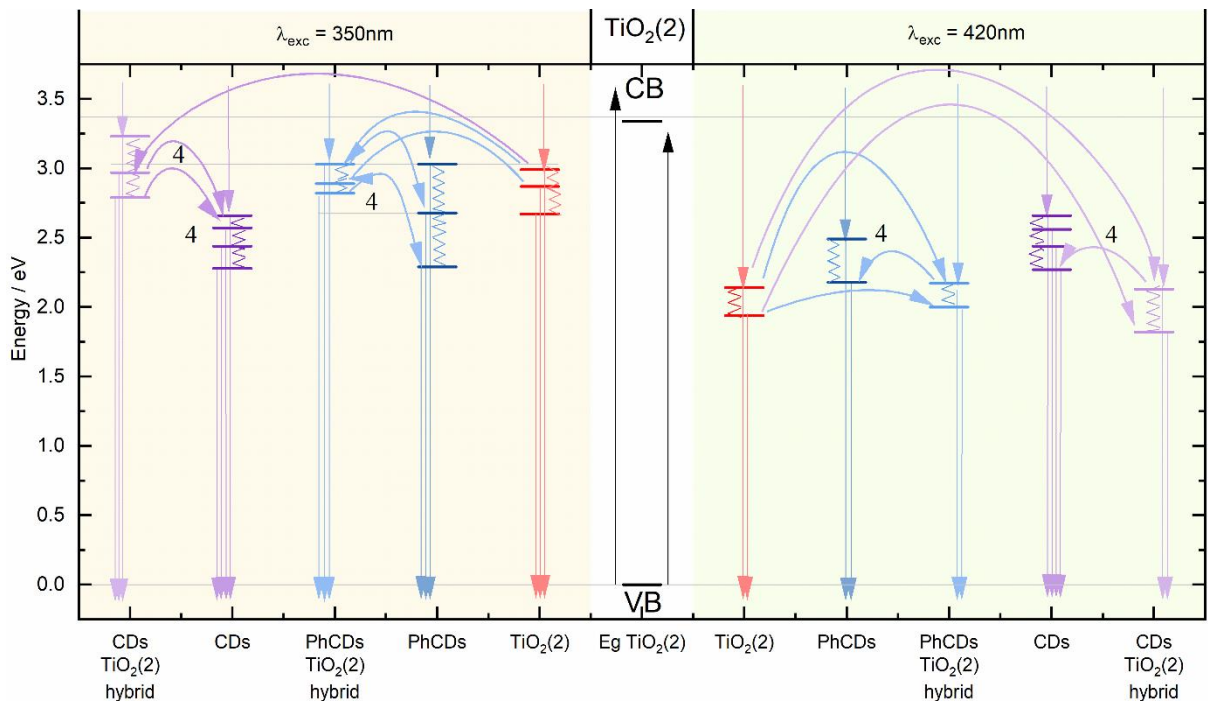


Fig. S8. Scheme of emission mechanism in $\text{TiO}_2(2)$, PhCDs, CDs and hybrid materials.