Electronic Supplementary Information

Photocatalytic mineralization of anionic dyes using Bismuth doped CdS-Ta_2O_5 composite

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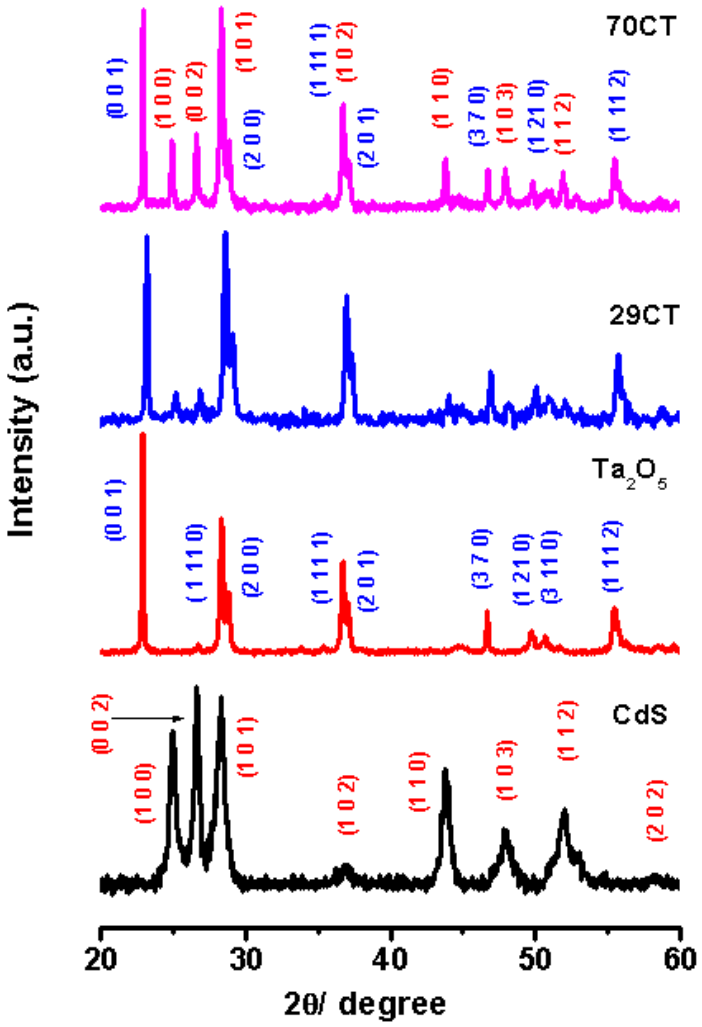

Fig. S1. XRD patterns of CdS, Ta_2O_5, 29CT and 70CT.

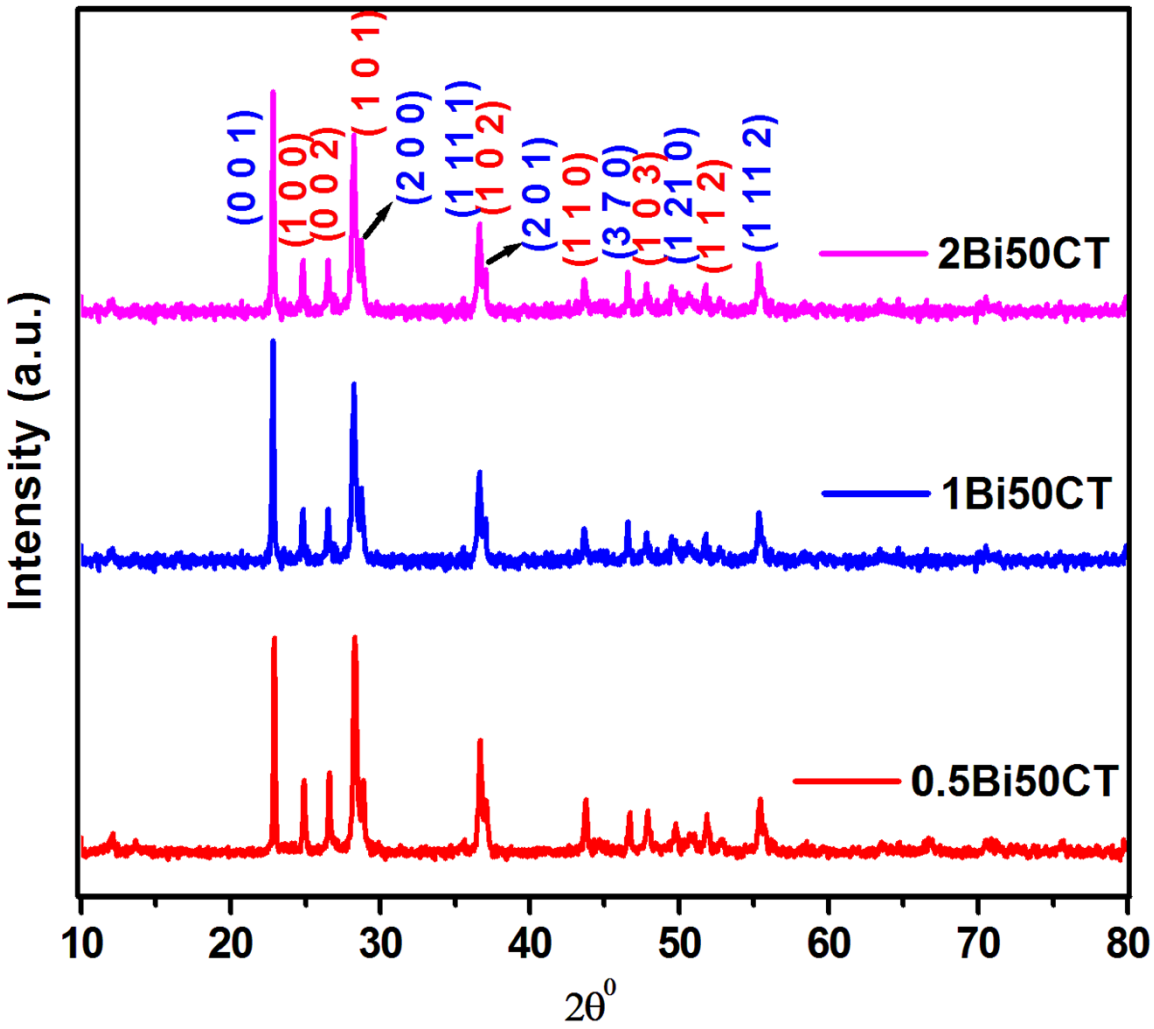

Fig. S2 XRD patterns of 0.5Bi50CT, 1Bi50CT and 2Bi50CT composites.

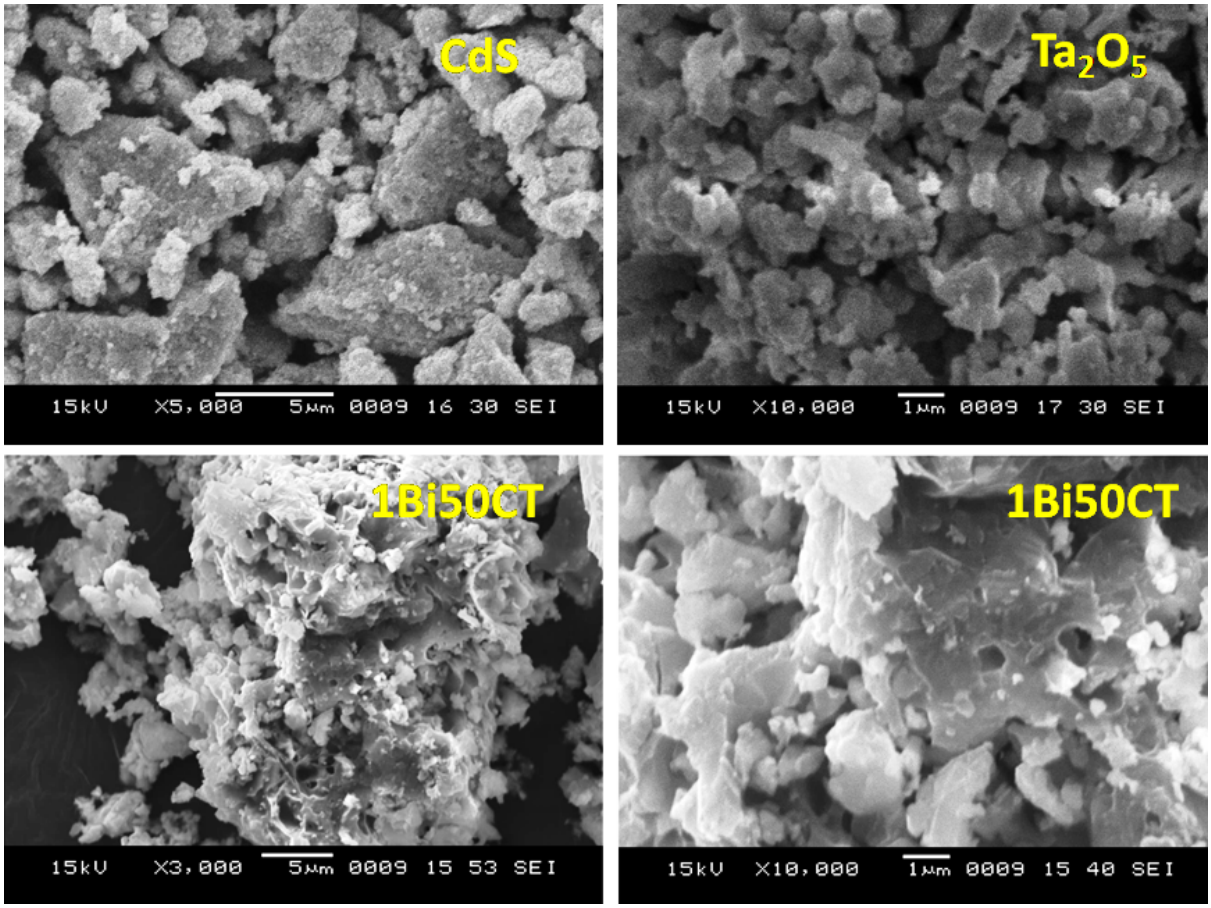

Fig. S3 SEM images of CdS, Ta_2O_5 and 1Bi50CT.

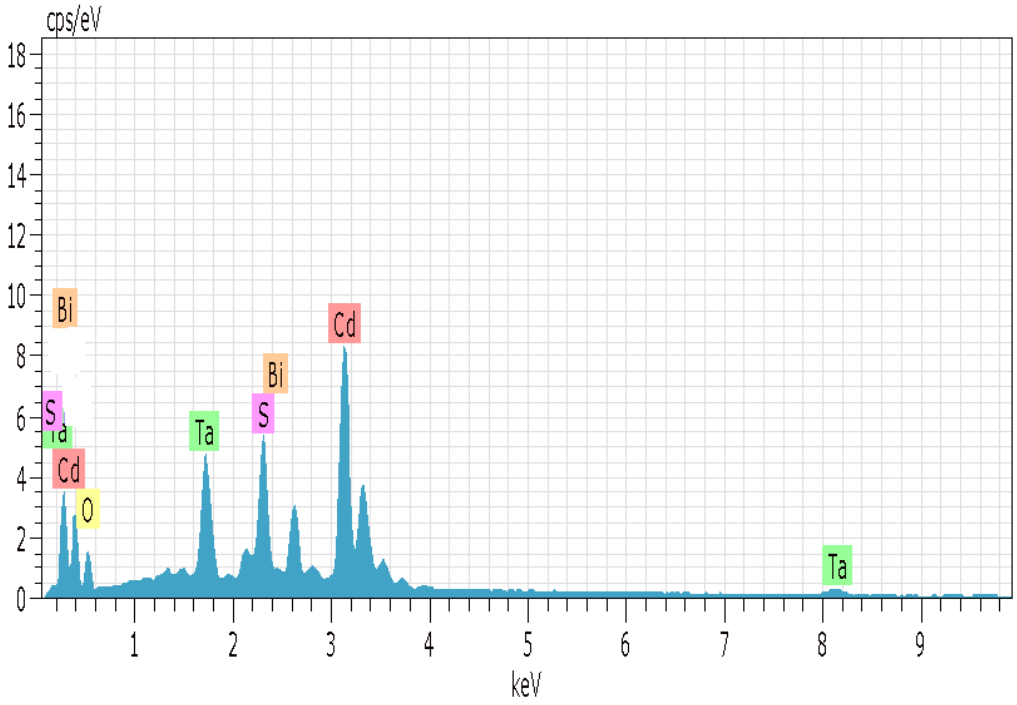

Fig. S4 EDX spectrum of 1Bi50CT.

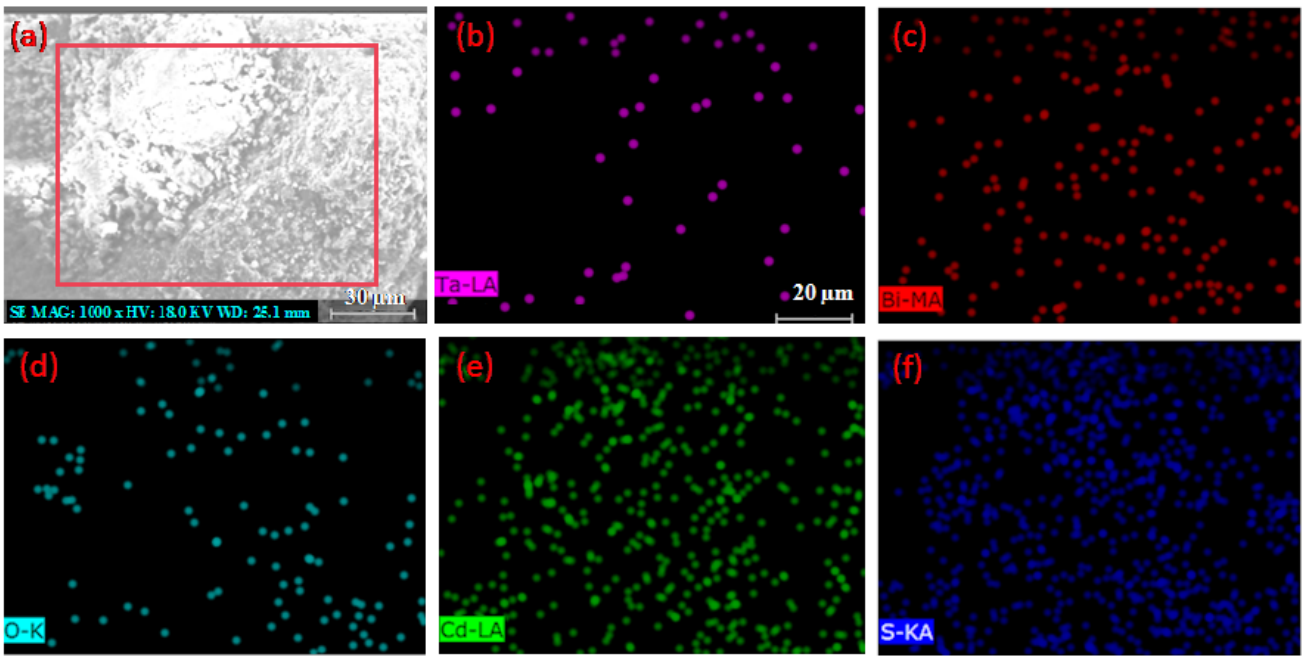

Fig: S5 (a) SEM image and EDS mapping of (b) Ta, (c) Bi, (d) O, (e) Cd and (f) S in 1Bi50CT.

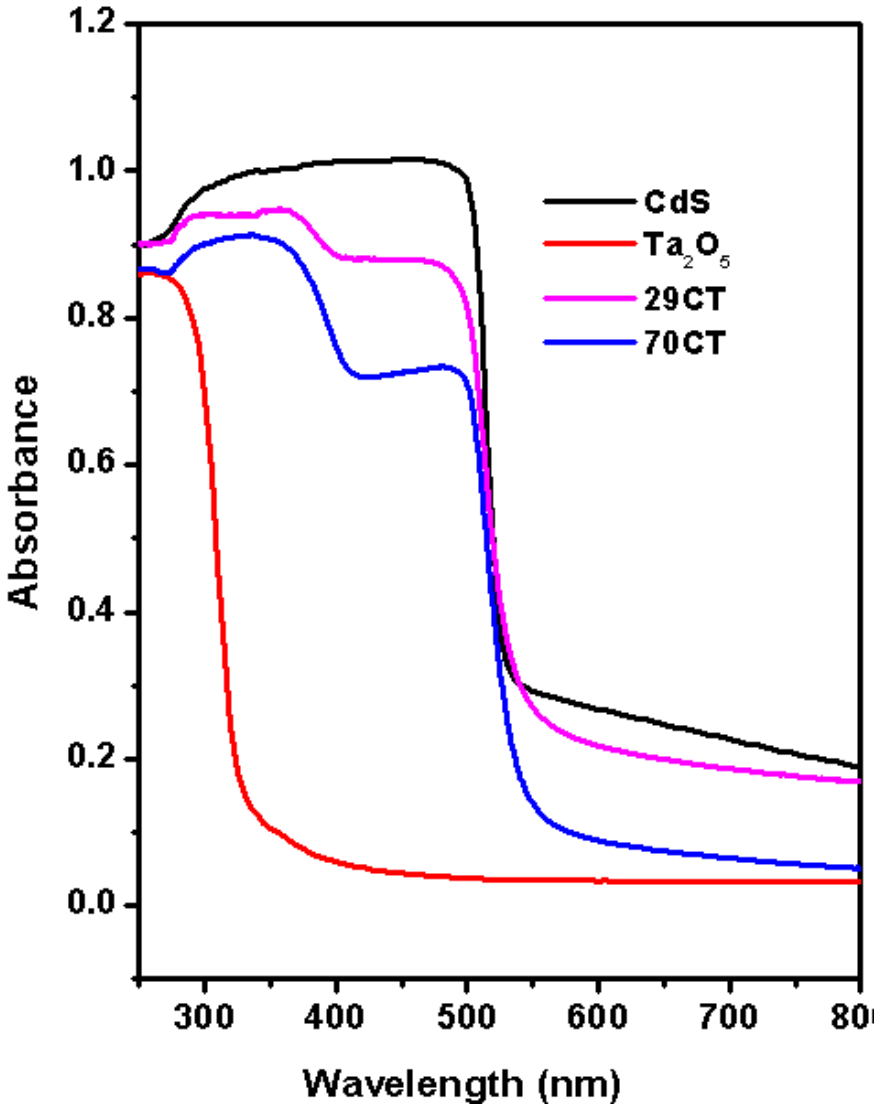

Fig. S6 UV-visible absorption spectra for CdS, Ta_2O_5, 29CT and 70CT.

S.N.	Catalysts	Rate k (min^{-1}) (30 min)	Degradation efficiency (%) (60 min)
1.	0.5Bi50CT	0.048	98.74
2.	1Bi50CT	0.105	99.88
3.	2Bi50CT	0.026	88.98

S7. Table: Kinetic Data for the photocatalytic degradation of AV 7 (50 ppm) by Bi50CT catalyst containing different Bi concentration.

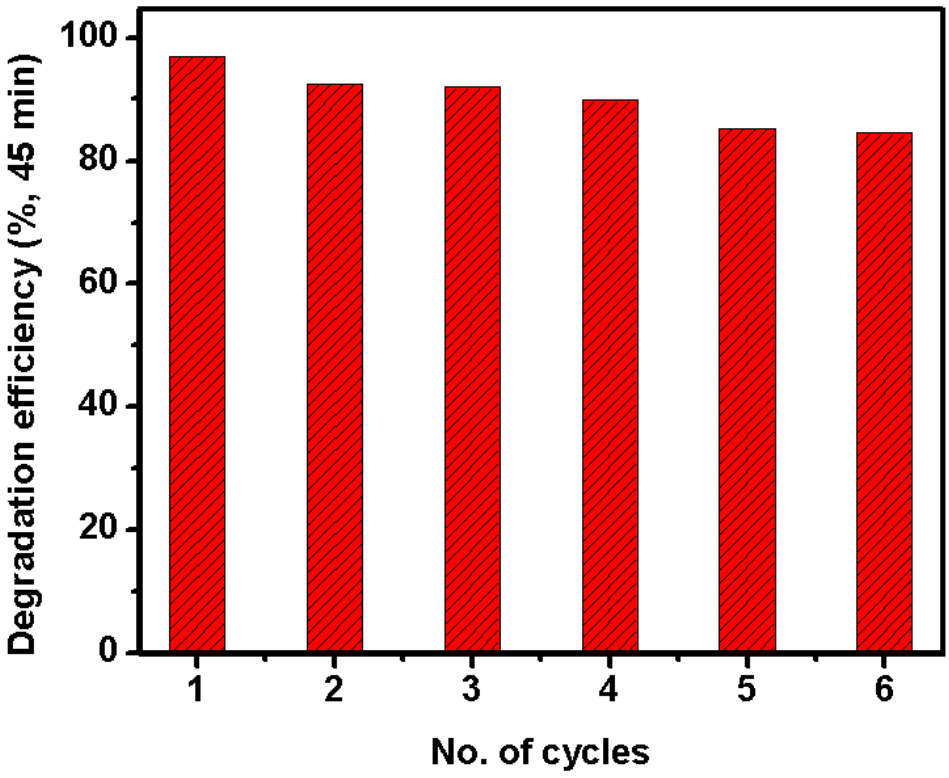

Fig. S8 Degradation efficiency (%, 45 min) of 1Bi50CT catalyst for repeated cycles.

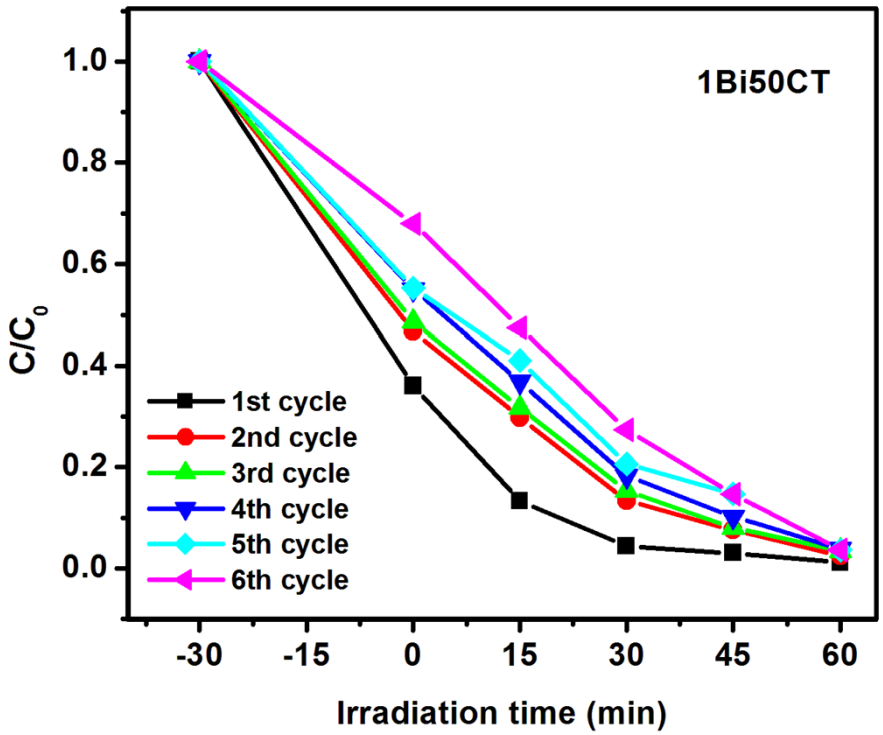

Fig. S9 Photodegradation of AV 7 (50 ppm) over 1Bi50CT for repeated cycles (six).

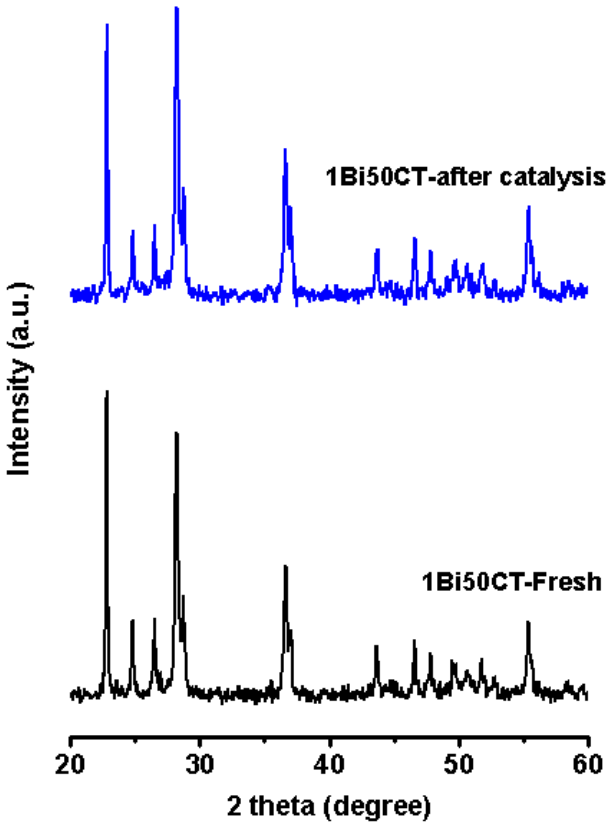

Fig. S10 XRD patterns of 1Bi50CT before and after photocatalysis.

S.N.	Catalyst	Dye	Rate K (min^{-1}) (30 min)	Degradation efficiency (%) (30 min)
1.	CdS	IC	0.107	96
2.	Ta_2O_5	IC	-	-
3.	1Bi50CT	IC	0.112	97
4.	CdS	MO	0.007	35
5.	Ta_2O_5	MO	-	-
6.	1Bi50CT	MO	0.048	95

S11. Table: Kinetic data for the photocatalytic degradation of IC (50 ppm) and MO (20 ppm) using 1Bi50CT catalyst.