Supplementary Material (ESI) for NEW JOURNAL OF CHEMISTRY

Developing visible light responsive BN/NTCDA heterojunction with good degradation performance for tetracycline

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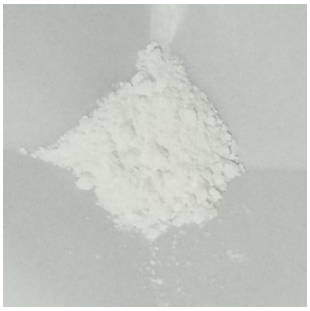


Fig. S1 The image of BN sample.

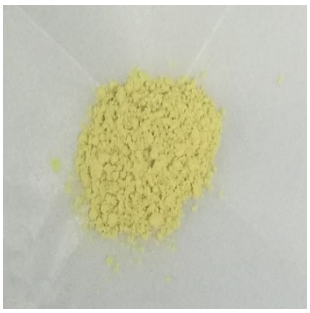
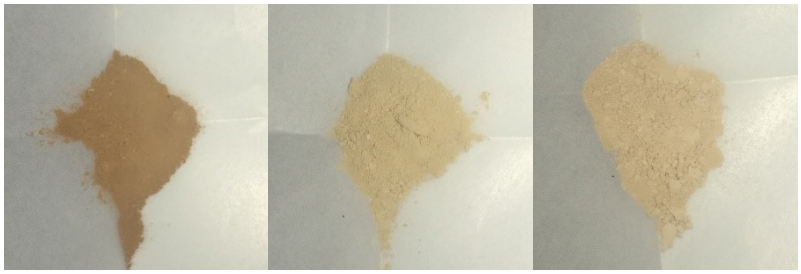


Fig. S2 The image of NTCDA sample.



(a) (b) (c)

Fig. S3 (a) The image of BN/NTCDA (10:1); (b) The image of BN/NTCDA (50:1); (c) The image of BN/NTCDA (100:1);

(a) (b) (c)

Fig. S4 The image of BN/NTCDA (100:1) prepared at different temperature (a) 250℃;(b) 350℃;(c) 450℃

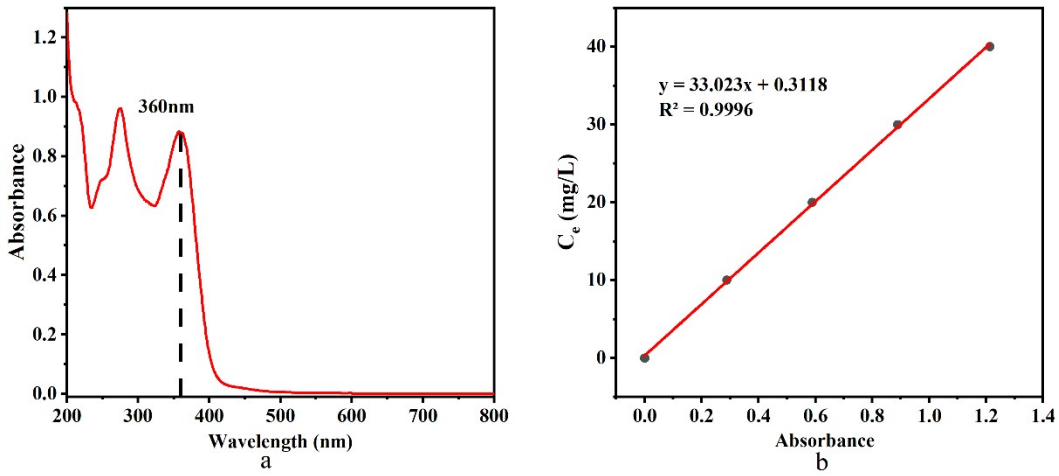


Fig. S5 (a) UV-Vis spectrum of TC; (b) The standard curve of TC.

Table S1. Atomic Concentration of different samples by the XPS analysis.

Atomic Concentration (%)				
	C1s	B1s	N1s	O1s
BN	2.73	50.56	40.02	6.69
NTCDA	70.99	-	-	29.01
BN/NTCDA (100:1)	3.80	49.58	39.42	7.20

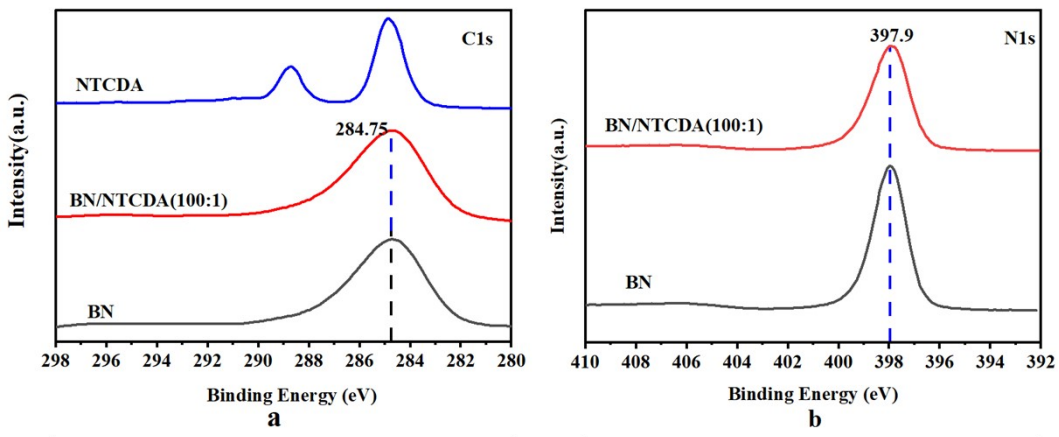


Fig. S6 (a) The C1s spectra comparison of BN, NTCDA and BN/NTCDA (100:1); (b) the N1s spectra comparison of BN and BN/NTCDA (100:1).

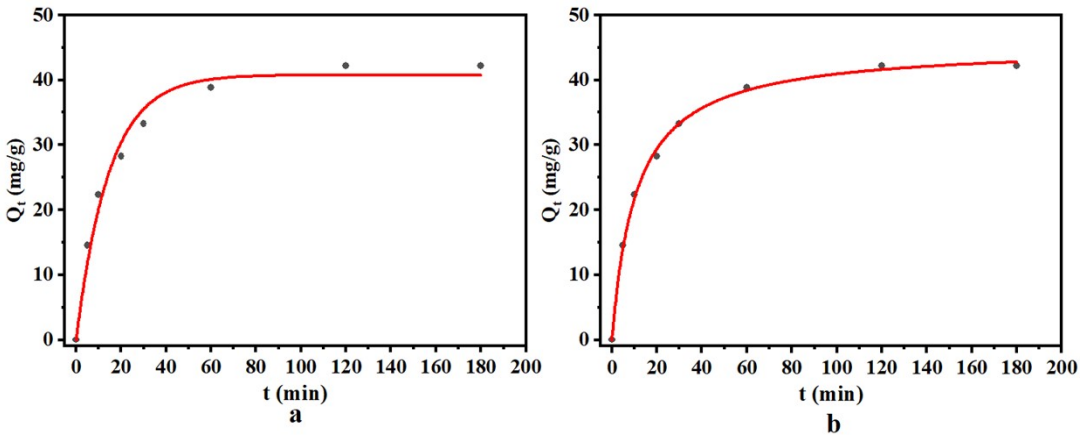


Fig. S7 (a) The pseudo-first-order adsorption kinetic fitting curve of TC by BN/NTCDA (100:1); (b) the pseudo-second-order adsorption kinetic fitting curve of TC by BN/NTCDA (100:1).

Table. S2 Pseudo-first-order, pseudo-second-order kinetic parameters for the adsorption of TC by BN/NTCDA (100:1).

Model	Parameters	Values
Pseudo-first-order	K_1(1/min)	0.06842
	Q_e (mg/g)	40.77
	R^2	0.9824
Pseudo-second-order	K_2(g/mg·min)	0.00204
	Q_e(mg/g)	45.33
	R^2	0.9981

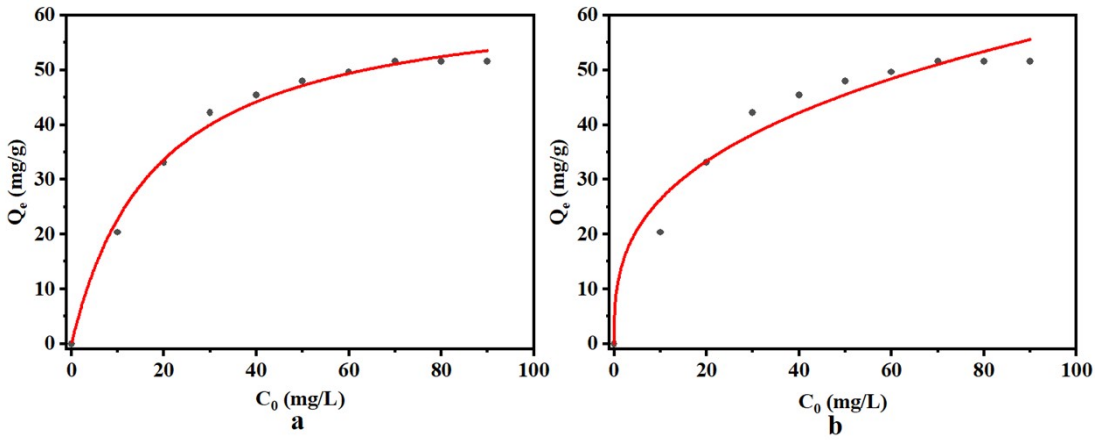


Fig. S8 (a)The Langmuir isotherm adsorption fitting curve of TC by BN/NTCDA (100:1); (b)The Freundlich isotherm adsorption fitting curve of TC by BN/NTCDA (100:1).

Table. S3 The Langmuir, Freundlich isotherm model parameters for the adsorption of TC by BN/NTCDA (100:1).

Model	Parameters	Values
Langmuir	Q_m(mg/g)	64.40
	K_L(L/mg)	0.055
	R^2	0.9804
Freundlich	K	12.08
	n	0.3391
	R^2	0.9663

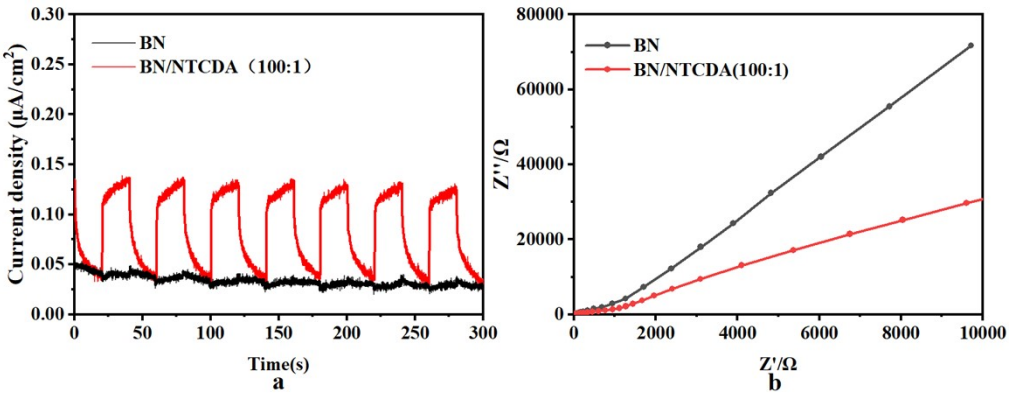


Fig. S9 (a)Transient photocurrent response of BN and BN/NTCDA (100:1) composites. (b) EIS Nyquist plots of BN and BN/NTCDA (100:1) composites.

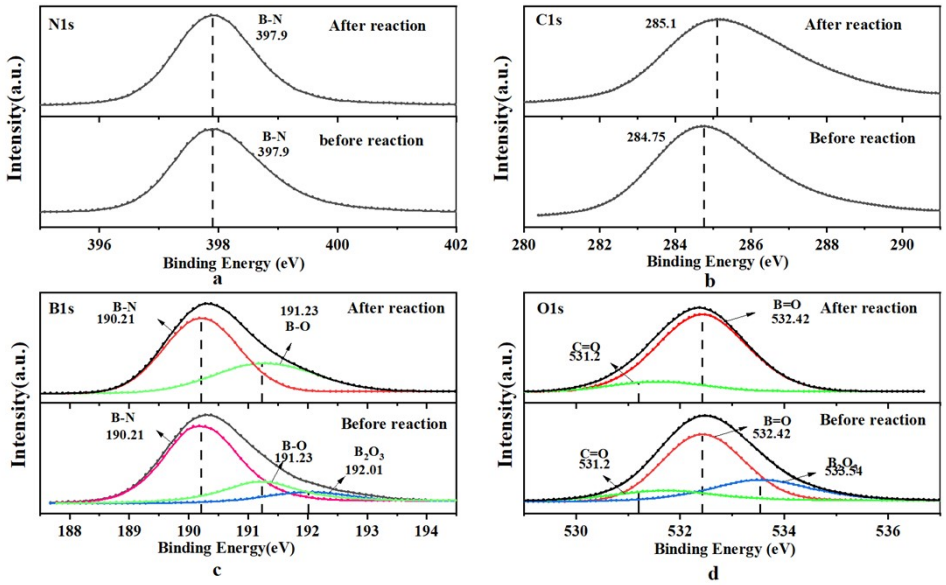


Fig S10 XPS patterns of BN/NTCDA(100:1) before and after reaction

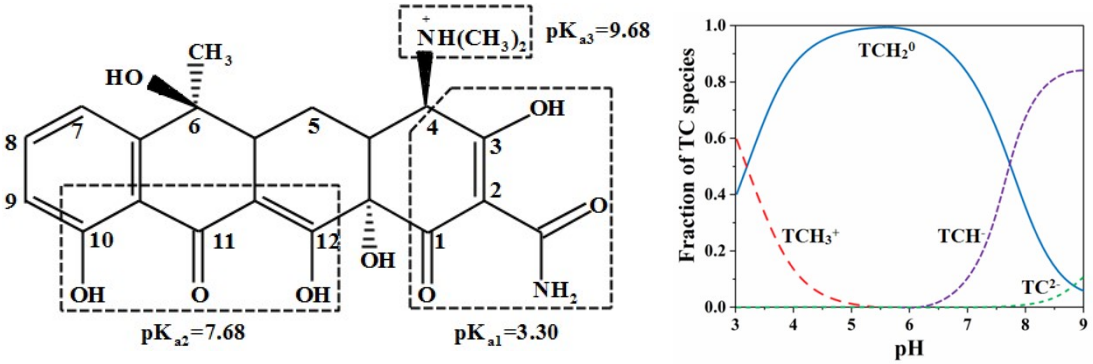


Fig S11 Existing form of TC at different PH