Electronic Supplementary Material (ESI) for RSC Advances.

Supporting information

General Procedure for recycling of adsorbent:

The 1g saturated adsorbent was soaked in 30 ml anhydrous ethanol solvent and allowed to stir 12 h at room temperature, then washed with fresh anhydrous ethanol for three times, and the adsorbed DUR was washed out from the adsorbent. Finally, the regenerated solid adsorbent was centrifuged and dried at 60℃ for 2 h.

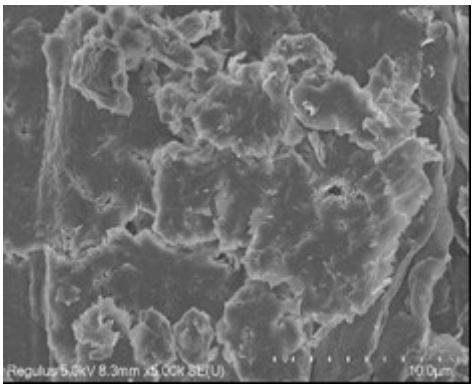

Fig. S1. SEM image of NM

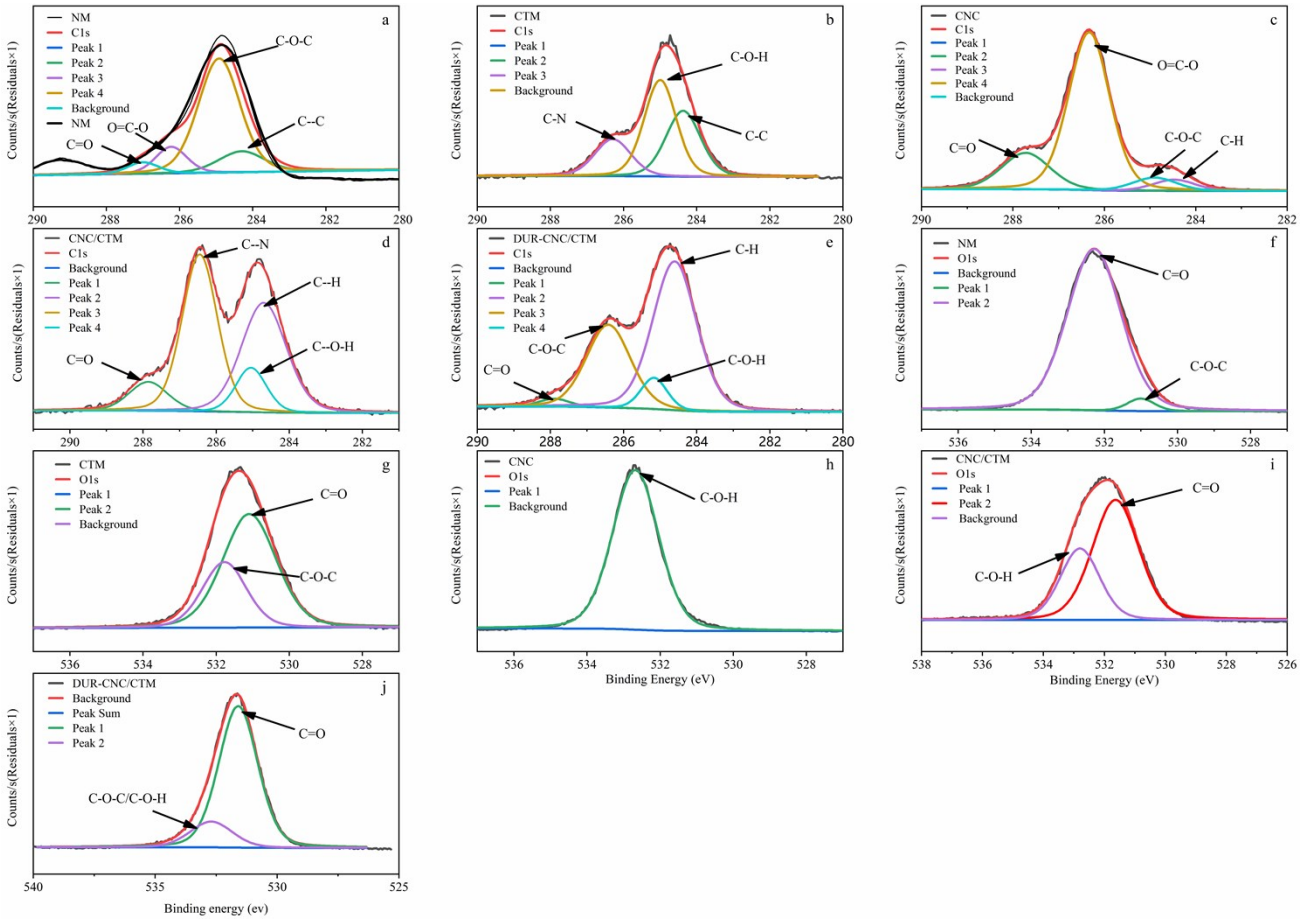

Fig. S2. C1s, and O1s high-resolution XPS spectra of the NM, CTM, CNC, CNC/CTM, and DUR-CNC/CTM samples

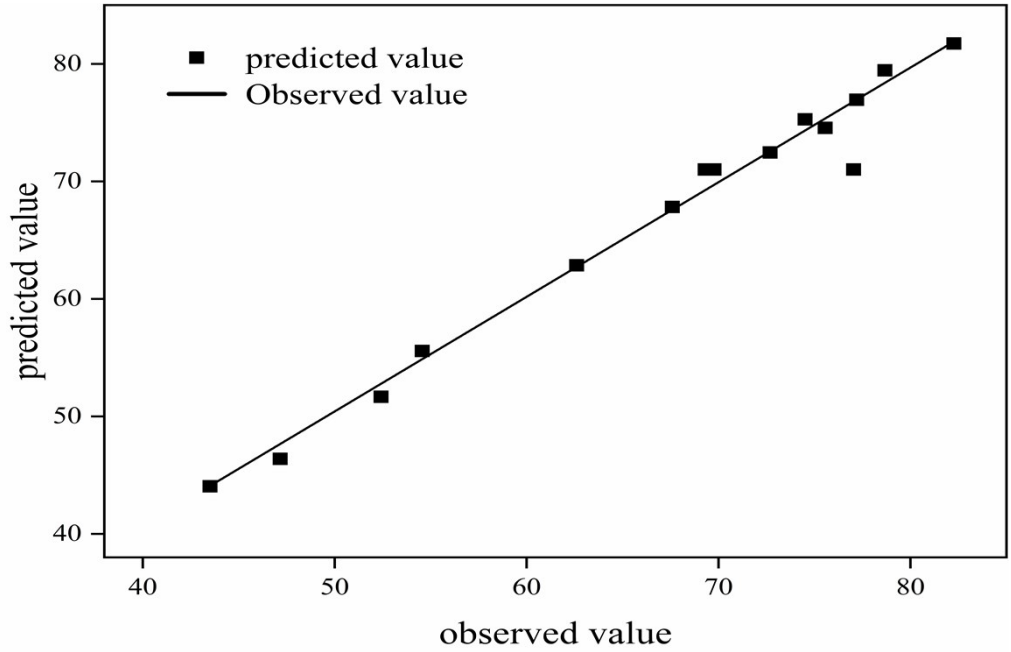

Fig. S3. Predicted (-) vs. observed values (■)

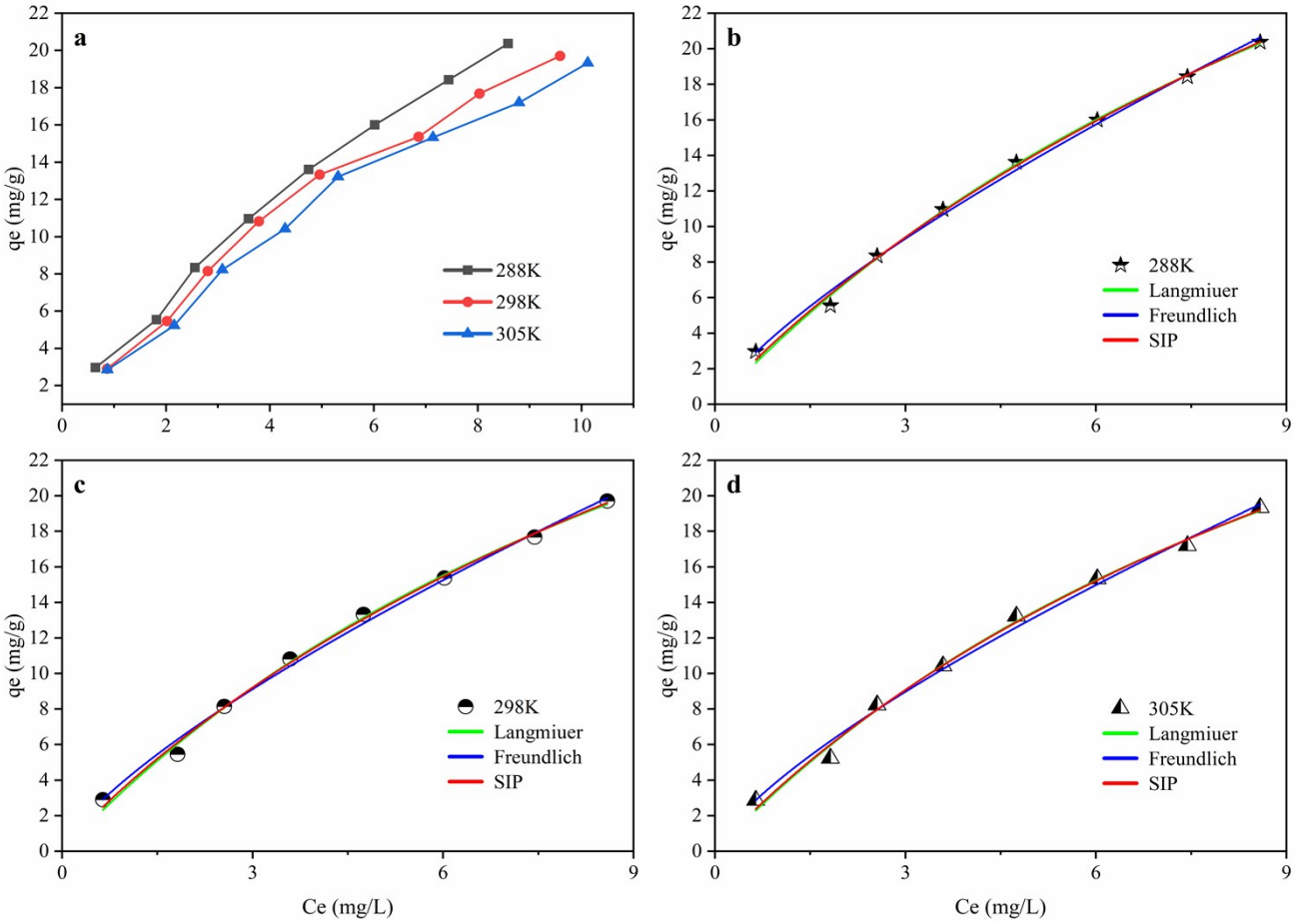

Fig. S4. (a) Diuron adsorption isotherms; Langmuir, Freundlich, and Sips isothermal models at temperatures (b) 288 K, (c) 298 K, and (d) 305 K

Table S1. Experimental independent variables and their coding levels

Variable	Coding	Code value		
		-1	0	1
Dosage of adsorbent （mg L^{-1}）	X_1	0.025	0.05	0.075
Reaction time (min)	X_2	190	270	350
Pollutant concentration （mg/L）	X_3	5	20	35

Table S2. Specific surface areas and pore structure parameters of the nanocomposite adsorbents

Sample	BET Surface Area (m^2g^{-1})	Total pore value (cm^3g^{-1})	Average pore diameter	Median pore width (nm)
CTM	13.7927	0.0852	28.6090	1.0447
CNC	27.2370	0.0434	6.3750	1.0420
CNC/CTM	39.5160	0.1224	12.3909	1.0305
DUR-CNC/CTM	22.5311	0.0520	9.2343	1.3822

Table S3. Experimental and predicted values of the response surface center combination design and response

Experiment number	X_1	X_2	X_3	Removal rate（%）	
				Experimental value	Predictive value
1	0	1	1	78.67	79.45
2	1	-1	0	43.51	44.04
3	-1	0	1	72.69	72.46
4	0	-1	1	74.51	75.27
5	1	1	0	67.59	67.82
6	0	0	0	69.56	71.00
7	0	1	-1	75.56	74.55
8	0	-1	-1	69.30	71.00
9	-1	1	0	77.04	71.00
10	0	0	0	82.26	81.73
11	1	0	-1	52.42	51.66
12	-1	-1	0	77.20	76.95
13	0	0	0	69.77	71.00
14	0	0	0	47.16	46.38
15	1	0	1	62.61	62.86
16	-1	0	-1	54.56	55.57
17	0	0	0	69.34	71.00

Table S4. ANOVA for the response surface quadratic model for the removal of diuron

Source	Sum of Squares	df	Mean	F Value	p-value Prob > F	
Model	2041.06	9	226.78	31.18	<0.0001	**significant**
X_1	175.22	1	175.22	24.09	0.0017	
X_2	1606.03	1	1606.03	220.81	<0.0001	
X_3	44.70	1	44.70	6.15	0.0423	
X_1X_2	4.73	1	4.73	0.65	0.9330	
X_1X_3	0.055	1	0.055	7.593E-003	0.8442	
X_2X_3	0.30	1	0.30	0.042	0.9424	
X_1^2	0.041	1	0.041	5.617E-003	0.0012	
X_2^2	202.27	1	202.27	27.81	0.5241	
X_3^2	3.27	1	3.27	0.45		
Residual	50.91	7	7.27		0.9234	**not significant**
Lack of Fit	5.20	3	1.73	0.15		
Pure Error	45.71	4	11.43			
Cor Total	2091.97	16	Cor Total			

$R^2 = 0.9757$; $R_{adj}^2 = 0.9444$

Table S5. Kinetic parameters of the adsorption of diuron by the CNC/CTM nanocomposite

Concentration (mg L^{-1})	**q_e (mg g^{-1})exp**	**Pseudo-first-order**				**Pseudo-second-order**			
		K_1 (min^{-1})	**q_e (mg g^{-1})**	**R^2**	**X^2**	**K_2 (g $mg^{-1}min^{-1}$)**	**q_e (mg g^{-1})**	**R^2**	**X^2**
5	2.97	0.0571	2.83+0.05	0.961	0.022	0.0348	2.99+0.02	0.997	0.001
10	5.23	0.0403	4.92+0.16	0.910	0.168	0.0084	5.35+0.10	0.975	0.047
15	8.23	0.0269	7.64+0.19	0.928	0.303	0.0077	8.24+0.09	0.989	0.049
20	10.96	0.0267	10.39+0.23	0.961	0.335	0.0036	11.37+0.08	0.997	0.025
30	15.32	0.0206	14.26+0.44	0.945	0.940	0.0017	15.93+0.24	0.989	0.184
40	20.37	0.0201	19.49+0.36	0.983	0.580	0.0011	22.02+0.25	0.995	0.178