

Facile synthesis of novel 0D/2D CdS/Bi₄TaO₈Br heterojunction for enhanced photocatalytic tetracycline hydrochloride degradation under visible light

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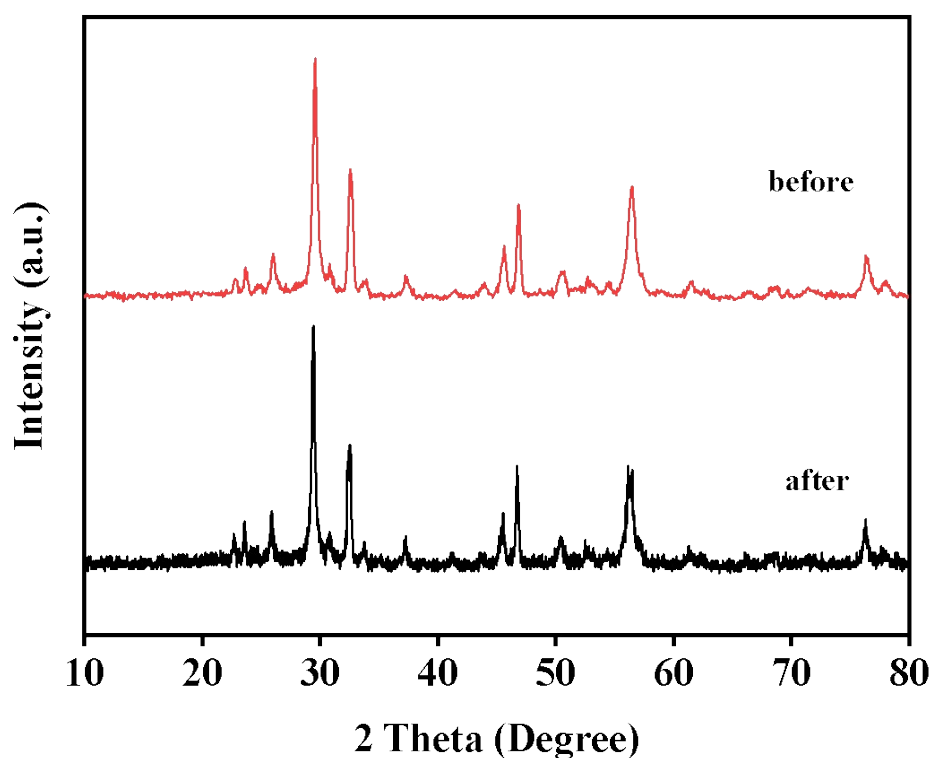
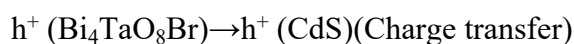
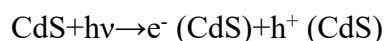
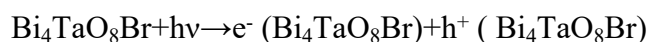


Fig.S1. XRD spectrum of CdS/Bi₄TaO₈Br-200 before and after five cyclic tests.

The possible reaction mechanism:



$\cdot\text{O}^{2-} + \text{TC-H} \rightarrow \text{products}$

$\text{h}^+ (\text{CdS}) + \text{TC-H} \rightarrow \text{products}$

Table S1. Comparisons of TC-H degradation among different catalysts.

Catalyst system	contami nant	Light wavelength (nm)	Conditions	Removal efficiency (%)	Reactio n time (min)	Kinetic rate constant (min ⁻¹)	References
CdS/Bi ₄ TaO ₈ Br	TC-H	>420nm	Catalyst=20mg TC-H=20mg/L	81.44%	120	0.089	This work
Bi ₂ WO ₆ /ZnIn ₂ S ₄	TC-H	5W LED	Catalyst=15mg TC-H=20mg/L	95.1%	120	0.023	[1]
CeO ₂ - TiO ₂ /PANI/NiF e ₂ O ₄	TC-H	>420nm	Catalyst=75mg TC-H=30mg/L	92.6%	30	0.037	[2]
Cu ₃ P/SnO ₂	TC-H	>420nm	Catalyst=50mg TC-H=50mg/L	80%	140	0.0094	[3]
In ₂ S ₃ /BiOI	TC-H	>420nm	Catalyst=40mg TC-H=20mg/L	85.6%	80	0.0171	[4]
g-C ₃ N ₄ /W-SBA	TC-H	AM 1.5G	Catalyst=50mg TC-H=50ml	98.2%	160	0.01336	[5]
β-Bi ₂ O ₃ /BiOCl	TC-H	>400nm	Catalyst=20mg TC-H=20mg/L	99.5%	180	0.02577	[6]
CeO ₂ /Bi ₂ WO ₆	TC-H	400-780nm	Catalyst=100mg TC-H=50mg/L	91.2%	90	0.03761	[7]
Bi ₂ WO ₆ /Fe ₃ O ₄	TC-H	500W	Catalyst=1g/L TC-H=50mg/L	81.53%	90	0.01774	[8]
Bi/BiVO ₄ -CdS	TC-H	833 mW/cm ²	Catalyst=20mg TC-H=50mg/L	85.5%	30	0.06247	[9]
AgI/BiVO ₄	TC-H	>400nm	Catalyst=3mg TC-H=20mg/L	94.91	60	0.0527	[10]

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