

Construction of 2D/2D Mesoporous WO₃/CeO₂ Laminated Heterojunctions Toward Optimized Photocatalytic Performance

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S1.1 Chemicals

Sodium tungstate (Na₂WO₄·2H₂O), Glucose (C₆H₁₂O₆), acrylamide (C₃H₅NO), cerium nitrate (Ce(NO₃)₃·6H₂O), and ammonia (NH₃·H₂O) were purchased from Aladdin Industrial Inc. Ethanol (EtOH), hydrochloric acid (HCl), citric acid (C₆H₈O₇·H₂O) and potassium hydroxide (KOH) were of analytical grade and purchased from Tianjin Kemiou Chemical Reagent Co., Ltd. All chemicals were utilized without additional treatment.

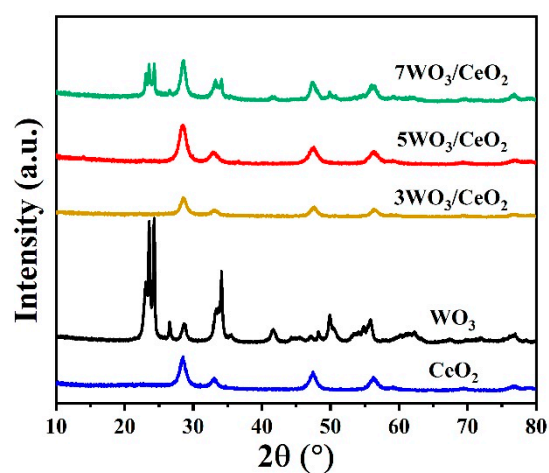


Fig. S1. XRD patterns of samples with different WO₃ contents.

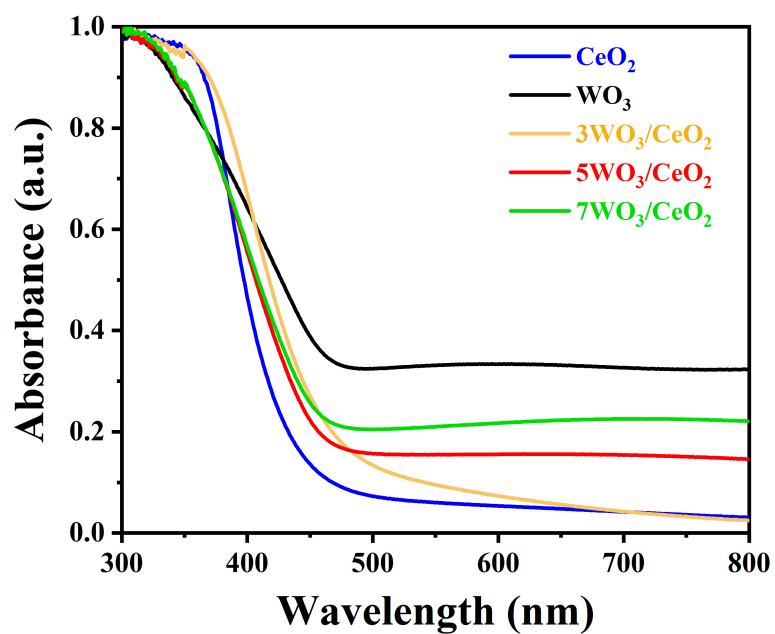


Fig. S2. UV-vis diffuse reflectance spectra of samples with different WO₃ contents.

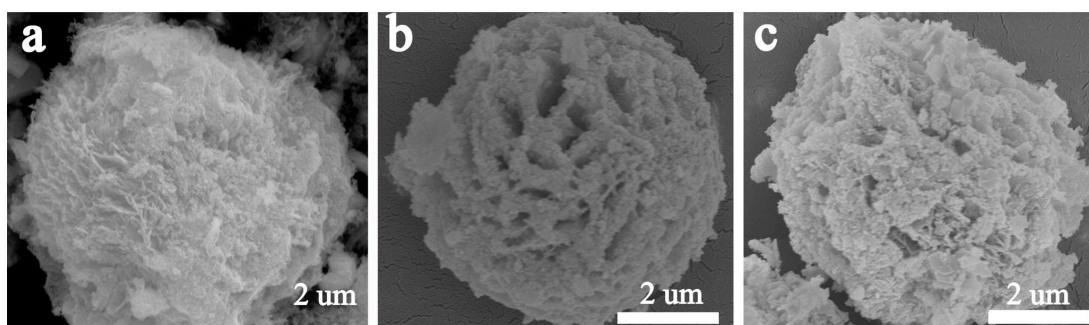


Fig. S3. Scanning electron microscope of samples with different WO_3 contents. (a) $3\text{WO}_3/\text{CeO}_2$, (b) $5\text{WO}_3/\text{CeO}_2$ and (c) $7\text{WO}_3/\text{CeO}_2$.

Table S1. The structure parameters of WO_3 , CeO_2 and WO_3/CeO_2 .

Parameters	WO_3	CeO_2	WO_3/CeO_2
BET surface area ($\text{m}^2 \text{g}^{-1}$)	25	100.3	67.9
Pore size (nm)	46.5	9.3	9.56
Pore volume ($\text{cm}^3 \text{g}^{-1}$)	0.2	0.21	0.15

Table S2. The total organic carbon (TOC) concentration before and after photocatalytic TC degradation.

Catalysts	TOC concentration before reaction (mg L^{-1})	TOC concentration after reaction (mg L^{-1})
CeO_2	9.8	1.6
$3\text{WO}_3/\text{CeO}_2$	10.3	0.3
$5\text{WO}_3/\text{CeO}_2$	10.1	0.1
$7\text{WO}_3/\text{CeO}_2$	9.9	0.3