

# Red mud modified with graphene oxide for enhanced visible-light-driven photocatalytic performance towards the degradation of antibiotic

## Supporting Information

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**Table S1** pH values of photocatalytic degradation of reaction solution (TC solution, 10 mg/L) containing as-prepared products.

Samples	RM-raw	RM-1GO	RM-3GO	RM-5GO	RM-7GO	RM-10GO
pH	6.9	6.9	6.9	6.9	6.9	6.9

**Table.S2** Chemical composition of RM-raw (mass fraction, %).

Al <sub>2</sub> O <sub>3</sub>	CaO	SiO <sub>2</sub>	Na <sub>2</sub> O	TiO <sub>2</sub>	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	SO <sub>3</sub>	MgO
28.2	23.7	22.6	8.33	5.46	4.59	3.32	1.86	1.21
P <sub>2</sub> O <sub>5</sub>	SrO	ZrO <sub>2</sub>	Cl	Y <sub>2</sub> O <sub>3</sub>	Nb <sub>2</sub> O <sub>5</sub>	NiO	As <sub>2</sub> O <sub>3</sub>	
0.259	0.214	0.183	0.0657	0.0229	0.0221	0.0199	0.0142	

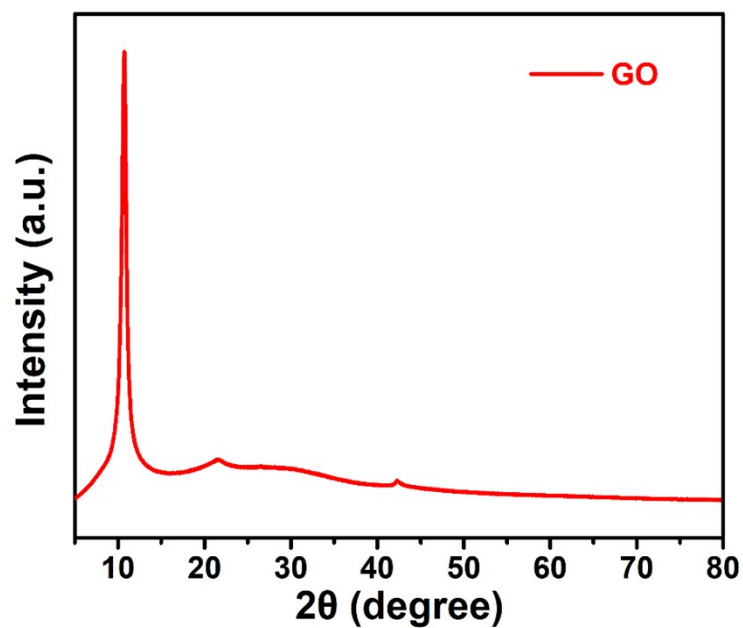


Fig.S1 XRD pattern of GO.

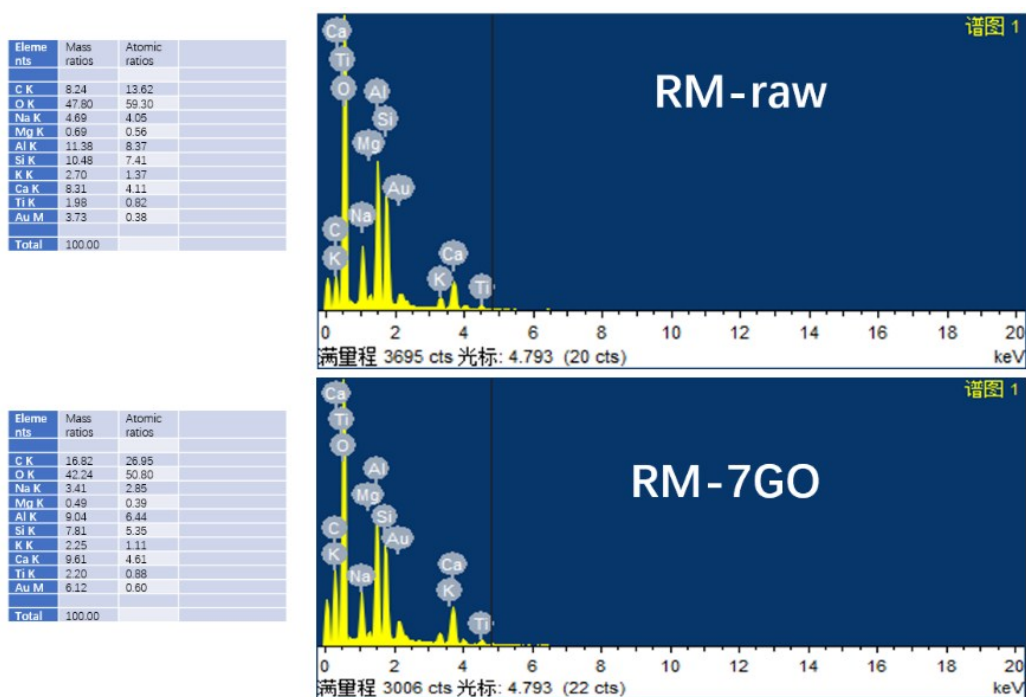
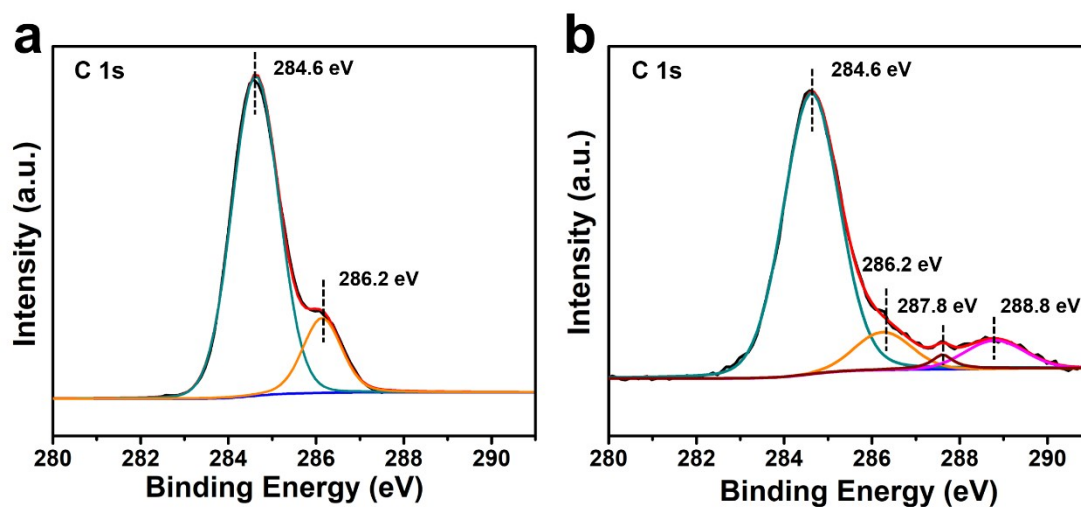
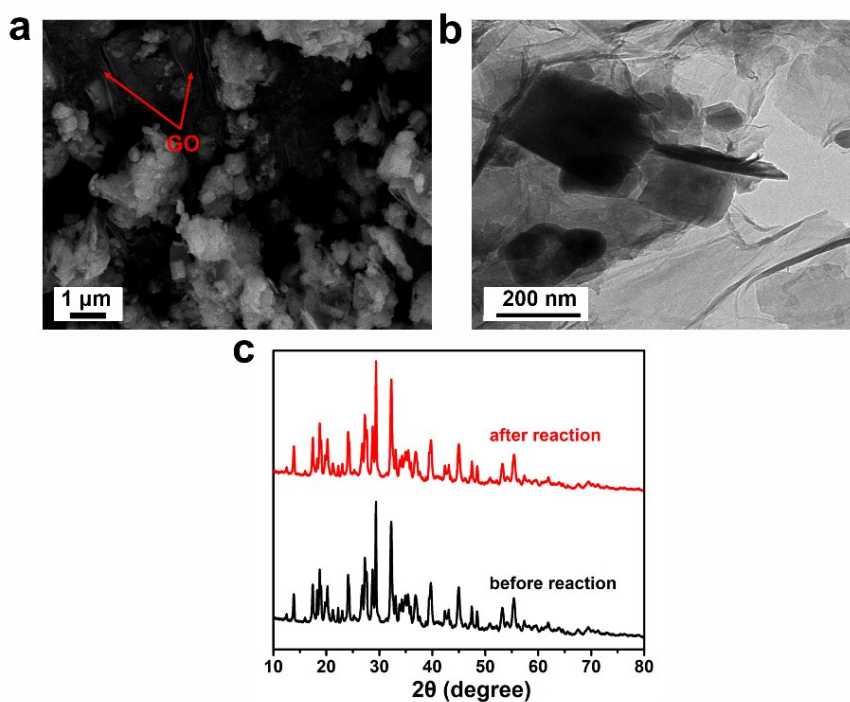


Fig.S2 EDX spectra of RM-raw and RM-7GO.



**Fig.S3** The C 1s XPS spectra of (a) RM-raw and (b) RM-7GO.



**Fig.S4** (a) SEM and (b) TEM images of RM-7GO after three cycles. (c) XRD patterns of RM-7GO before and after photocatalysis.