Supplementary information

Hollow $CuFe_2O_4/MgFe_2O_4$ Heterojunction Boost Photocatalytic Oxidation Activity for Organic Pollutants

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Materials

Ferric chloride ($FeCl_3·6H_2O$), cupric chloride ($CuCl_2·2H_2O$), magnesium chloride ($MgCl_2·6H_2O$), ethylene glycol and PEG-20000 were purchased from Sinopharm Chemical Reagent Co., Ltd, China. AO7 (C.I. 15510) from Beijing Chemical Reagents. Nafion solution (5%) was purchased from Shanghai Hesen.

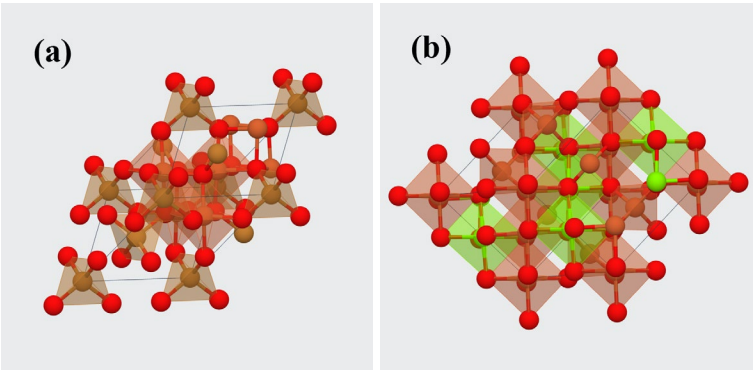

Figure S1(a). The cell structure diagram of $CuFe_2O_4$, (b). $MgFe_2O_4$.

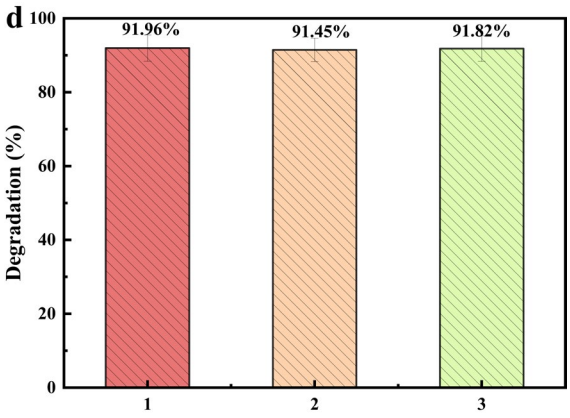

Figure S2. Three photocatalytic degradation tests of (Cu：Mg=1:2) $CuFe_2O_4/MgFe_2O_4$

Table S1. XPS element mole content diagram of $CuFe_2O_4/MgFe_2O_4$

Different feed ratios	O	Fe	Cu	C	Mg	Cu: Mg
Cu: Mg=1:0.5	57.19%	20.84%	3.29%	17.13%	1.55%	1:0.47
Cu: Mg=1: 1	57.34%	21.65%	2.69%	15.81%	2.51%	1:0.93
Cu: Mg=1: 2	58.86%	22.62%	1.52%	14.2%	2.8%	1:1.84
Cu: Mg=1: 3	59.12%	22.67%	1.39%	12.97%	3.85%	1:2.75

Table S2. Comparison of different reported photocatalysts for AO_7 degradation

Catalyst	Catalyst concentration (g/L)	Organic dye concentration (ppm)	Degradation efficiency	Ref.
$CuFe_2O_4/MgFe_2O_4$	0.8	35	91.96%,1h	This work
N, F-TiO_2	1.0	$3.3*10^3$	16%,3h	[65]
CoCr-LDH	1.0	$3.3*10^3$	90%,3h	[66]
CrS-Graphene	0.67	20	97%,4h	[67]
Zn_3Ti_1-LDO-4	0.25	20	99.2%,3h	[68
BiOBr@Bi-MOF	0.6	20	37.5%,1h	[69]
$Fe_3O_4/C/MnO_2/C_3N_4$	0.31	10	94.11%,2.33h	[70]