Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Carbon/TiO_2/Fe_2O_3 Hybrid Shells toward Efficient Visible Light Photocatalysts

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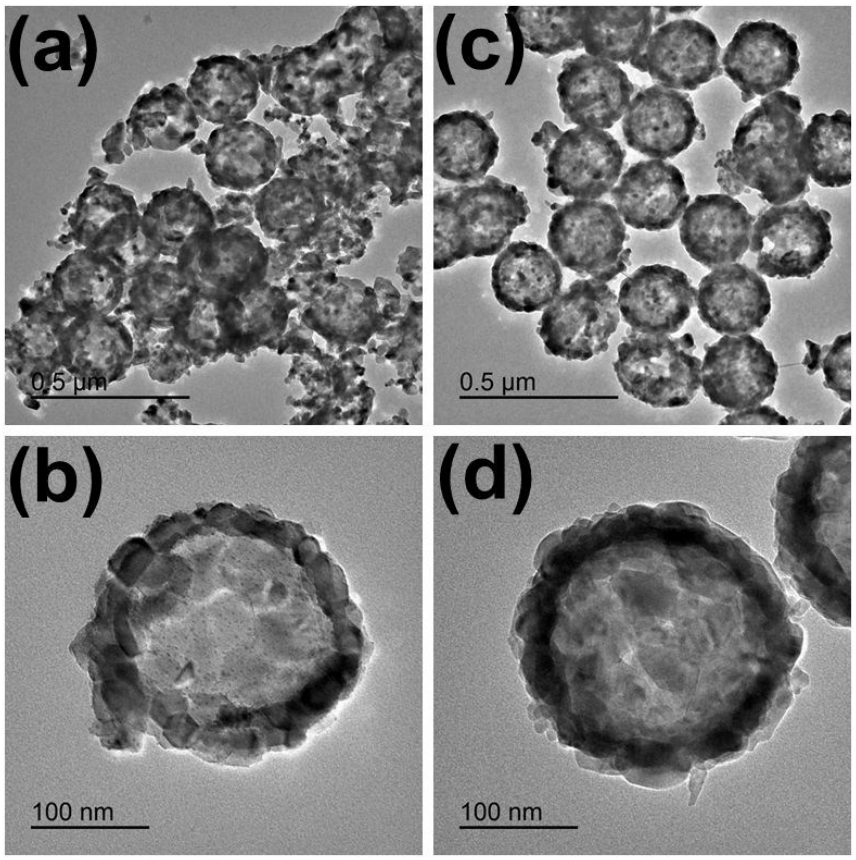

Figure S1 TEM images of (a, b) TiO_2 hollow spheres and (c, d) TiO_2/Fe_2O_3 hollow hybrids calcined at 600 ^oC in air.

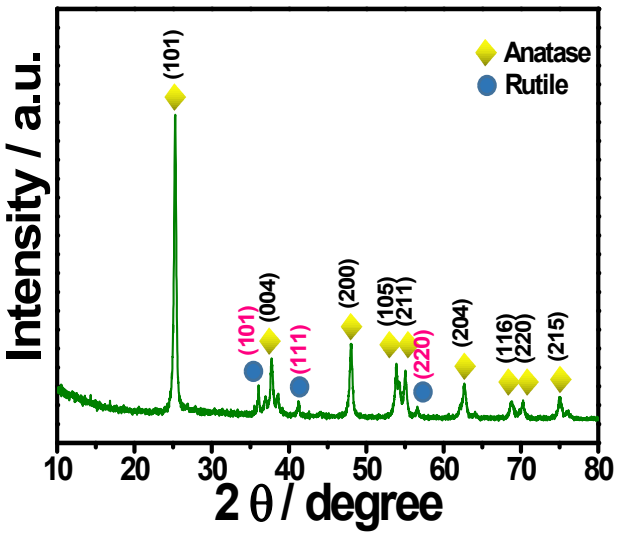

Figure S2 XRD pattern of TiO_2 hollow spheres.

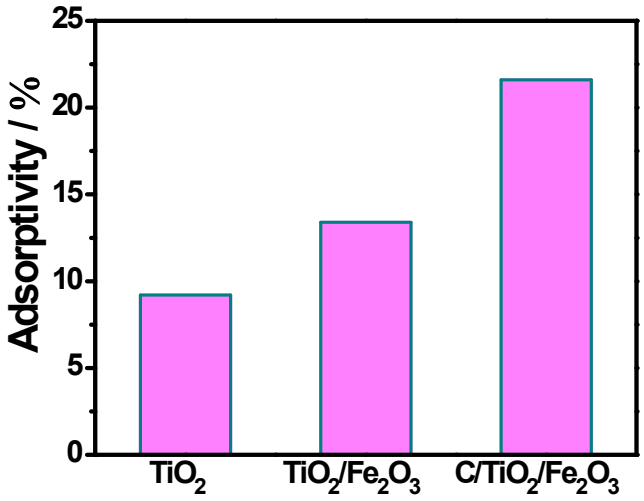

Figure S3 Bar plot showing the adsorption of RhB with different photocatalysts.

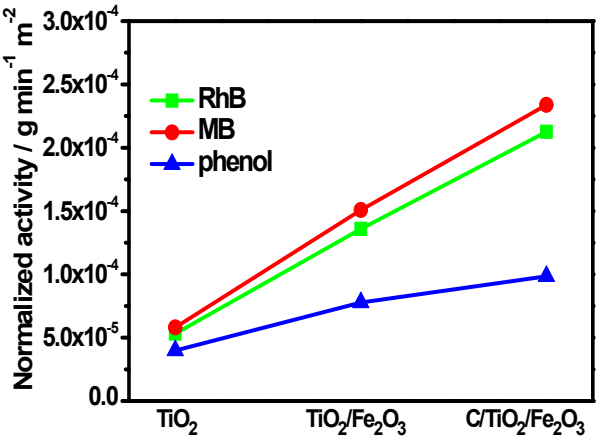

Figure S4 The photocatalytic activity normalized with the specific surface area.

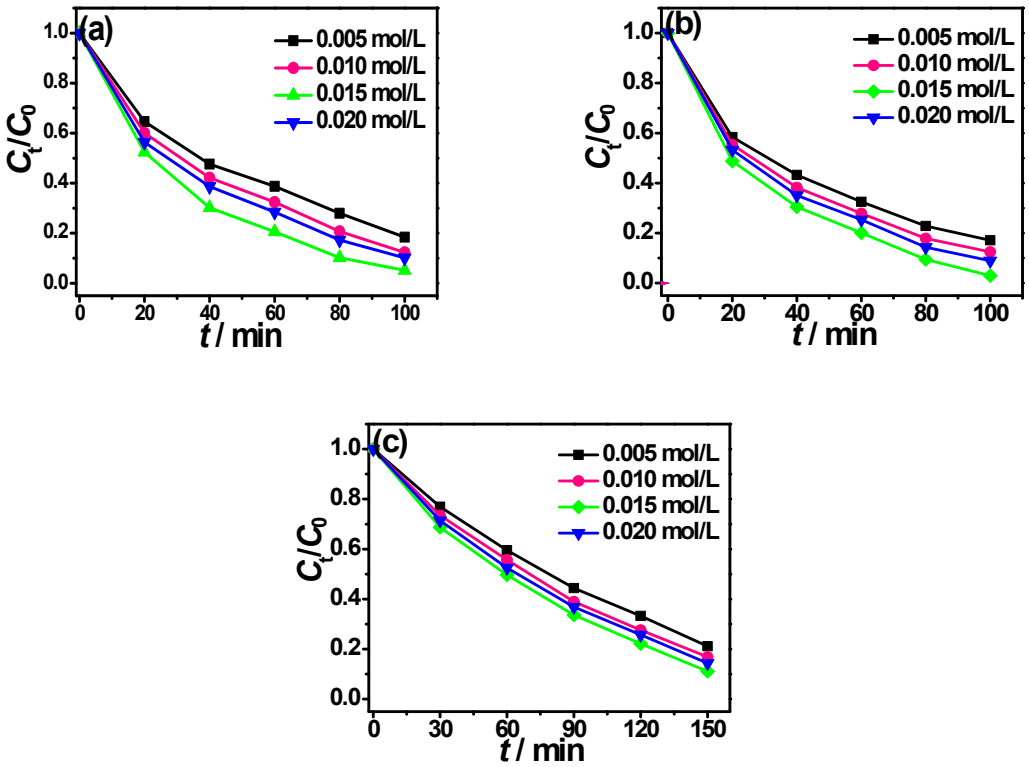

Figure S5 The photocatalystic activity under visible light irradiation of (a) RhB, (b) MB and (c) phenol using C/TiO_2/Fe_2O_3 hollow hybrids synthesized at different $FeCl_3 \cdot 6H_2O$ precursor concentration.

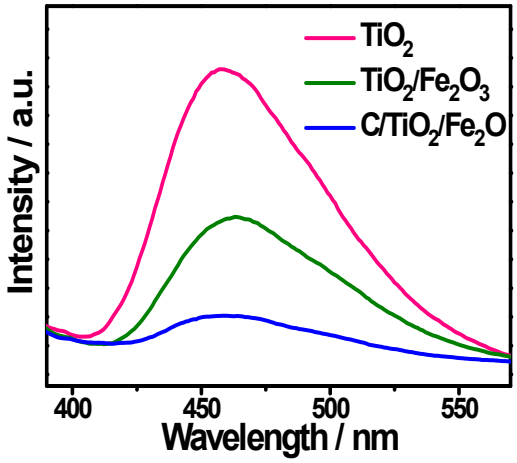

Figure S6 PL spectra of TiO_2 and TiO_2/Fe_2O_3, $C/TiO_2/Fe_2O_3$ hollow hybrids excited at 360 nm.

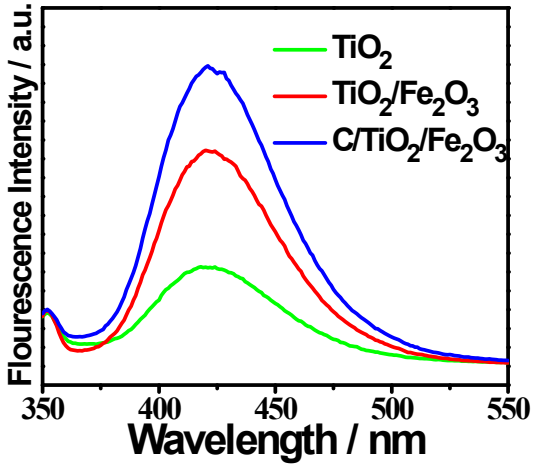

Figure S7 Fluorescence spectra of $C/TiO_2/Fe_2O_3$ hollow hybrids in a 5×10^{-4} mol L^{-1} basic solution of terephthalic acid under visible light irradiation at a fixed 30 min.

Table S1 Comparison of the photocatalytic activity of different $C/TiO_2/Fe_2O_3$ photocatalysts.

sample	k (min^{-1})	irradiation	organic dye	ref
TiO_2/Fe_2O_3/CNTs	0.0211	visible light	tetracycline	1
TiO_2&γ-Fe_2O_3@GO	0.00200	visible light	RhB	2
Fe_2O_3-Fe_3O_4@SiO_2@TiO_2 -TNS-GR	0.0201	visible light	RhB	3
Fe_2O_3-TiO_2-graphene	0.0176	visible light	RhB	4
$C/TiO_2/Fe_2O_3$ hollow hybrids	0.0289	visible light	RhB	this work

References

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