

Supporting information

Plasmon active Ag nanoparticle decorated Sg-C₃N₄/Bi₂O₃ ternary nanohybrid: A promising visible light harnessing photocatalyst effective towards degradation of Rhodamine B and Tetracycline Hydrochloride

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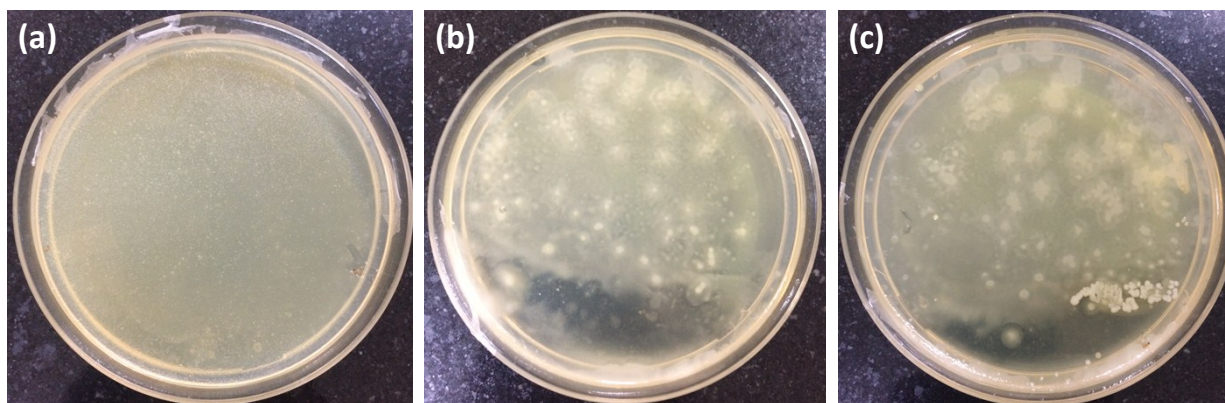


Figure- S1: Antibacterial activity of TCH residue after photodegradation with different times: (a) 0 min, (b) 30 min, and (c) 60 min.

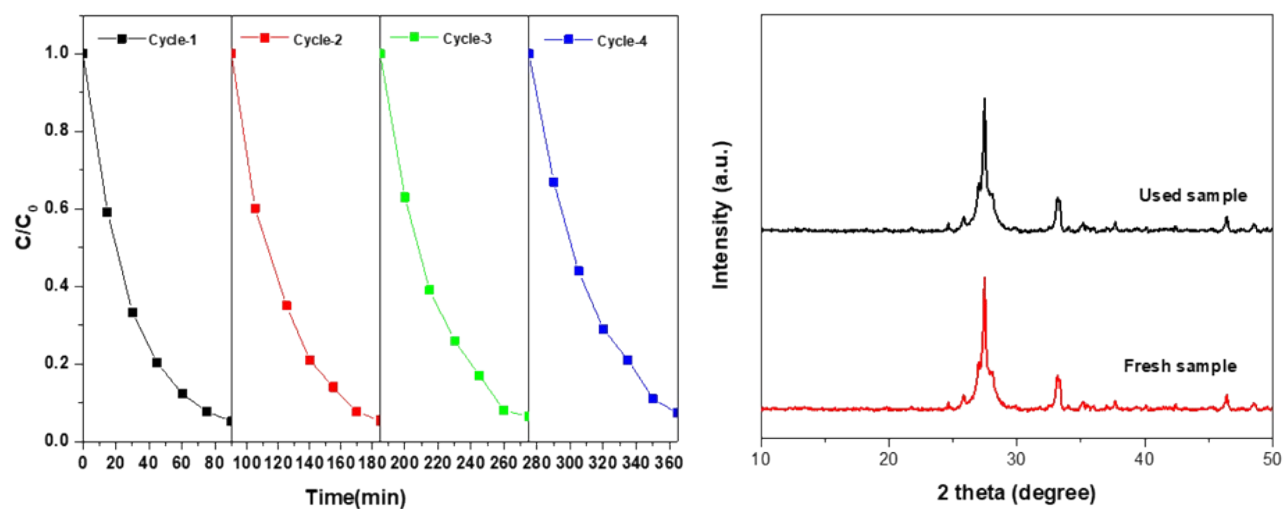


Figure S2. Number of cycles runs for degradation of RhB by Sg-C₃N₄/Bi₂O₃/Ag (15%), (b) XRD spectra of Sg-C₃N₄/Bi₂O₃/Ag (15%) before and after photocatalytic reaction.

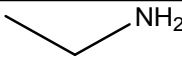
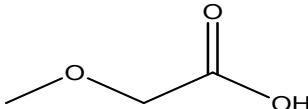
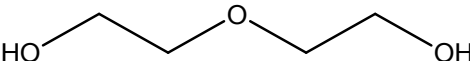
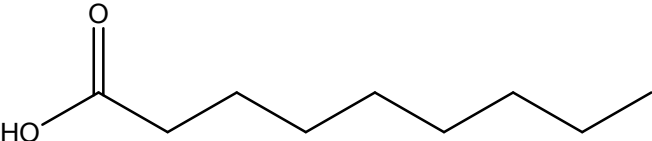
Table S1. Values of K_{app} for degradation of RhB and TCH by Sg-C₃N₄/Bi₂O₃/Ag(15%) photocatalyst.

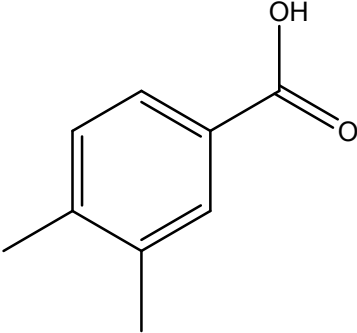
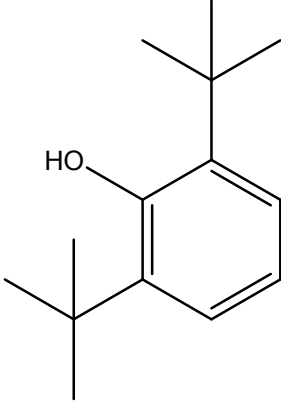
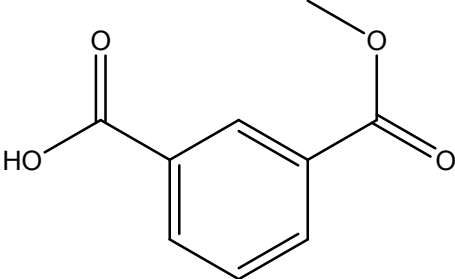
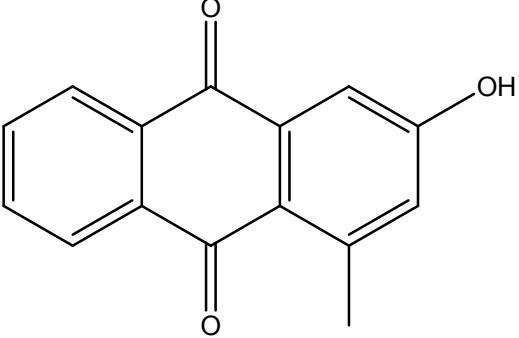
Catalyst	RhB ($K_{app} \times 10^{-5}$)	TCH ($K_{app} \times 10^{-5}$)
Sg-C ₃ N ₄ /Bi ₂ O ₃	62.1	903
Sg-C ₃ N ₄ /Bi ₂ O ₃ /Ag (5%)	284	1500
Sg-C ₃ N ₄ /Bi ₂ O ₃ /Ag (10%)	384	1851
Sg-C ₃ N ₄ /Bi ₂ O ₃ /Ag (15%)	1662	3008
Sg-C ₃ N ₄ /Bi ₂ O ₃ /Ag (20%)	1144	2189

Table S2. Percentage of degradation of RhB in the presence of different trapping reagents.

Scavenger	Species involved	Percentage of degradation
p-BQ	$\cdot O_2^-$	36.48
DMSO	e^-	34.37
TBA	$\cdot OH$	23.18
EDTA	h^+	13.52

Table S3. GC-MS retention times, and possible intermediates with their m/z values obtained from photocatalytic degradation of TCH.

Retention Time	m/z value (abundance %)	Possible structure
25.19	73(37), 114 (29), 174(100)	
26.43	73(32), 147(100)	
27.03	73(100), 117(35)	
29.56	73(68), 75(79), 201(100), 215(25)	

31.49	71(100), 163(58)	
32.33	71(100), 263(27), 264(32)	
34.52	147(70), 163(100), 237(92)	
35.32	81(91), 207(100), 295(85)	
36.57	73(52), 167(100), 222(13)	