

Electronic Supplementary Information

Synthesis and Facet-dependent Enhanced Photocatalytic Activity of Bi₂SiO₅/AgI Nanoplate Photocatalysts

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Preparation of C-Bi₂SiO₅ nanoplates and B-Bi₂SiO₅ particles:

C-Bi₂SiO₅ nanoplates were prepared following the same procedure of Bi₂SiO₅ nanoplates besides adding 0.35 mmol of CTAB before adding ammonia solution. B-Bi₂SiO₅ particles were synthesized through a solvothermal method. In a typical synthesis, a certain amount of Bi(NO₃)₃·5H₂O (4 mmol) and Na₂SiO₃·9H₂O (2 mmol) were dissolved in 70 mL of mixed solvent with triethanolamine and deionized water (volume ratio 1:6) under magnetic stirring. After stirring for 20 min, the mixture was transferred to a stainless steel Teflon-lined autoclave of 100 mL capacity. The autoclave was sealed and heated at 180 °C for 12 h and then cooled to room temperature naturally. The final products were collected by centrifugation, rinsed with distilled water and ethanol respectively, and dried at 70 °C for 5 h.

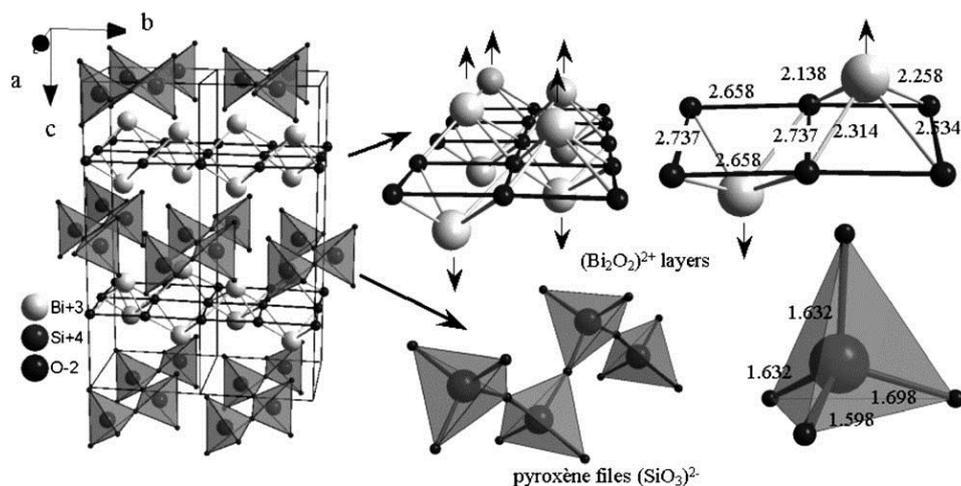


Figure S1. Structural representation of orthorhombic Bi₂SiO₅ (from Ref. [9])

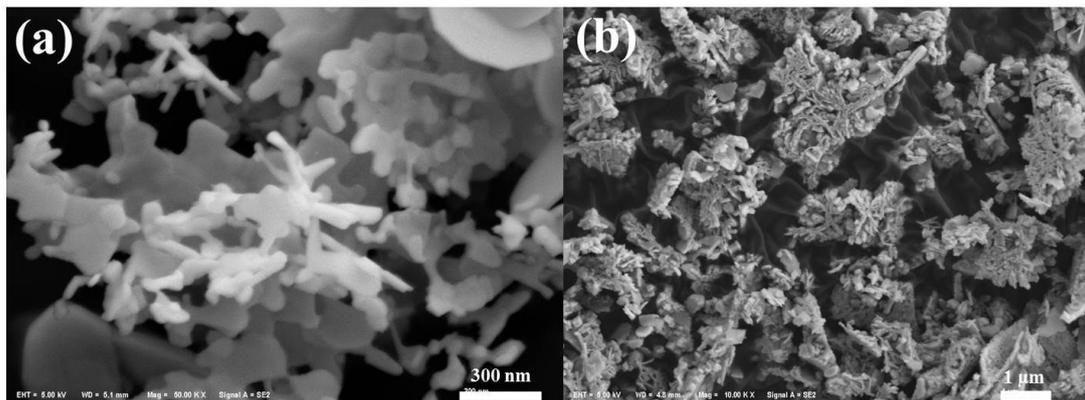


Figure S2. FE-SEM images of the (a) C-Bi₂SiO₅/AgI nanoplates and (b) B-Bi₂SiO₅/AgI particles.

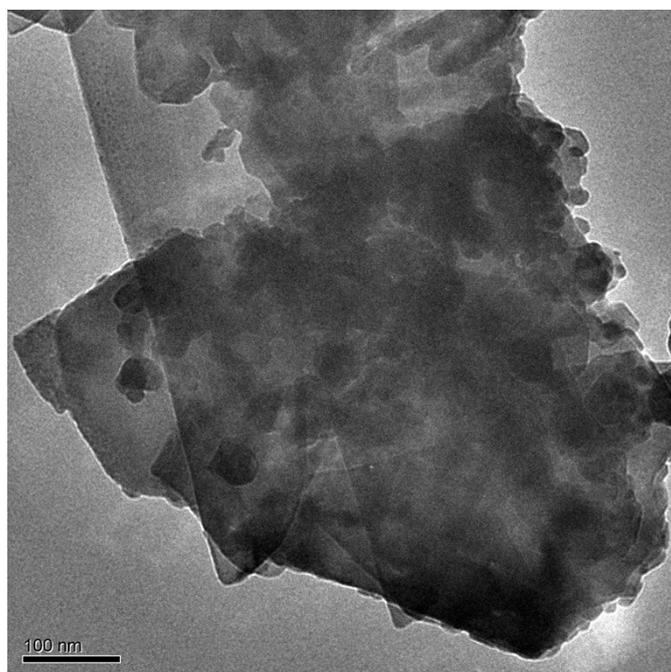


Figure S3. TEM image of the Bi₂SiO₅/AgI nanoplates (1B-A).

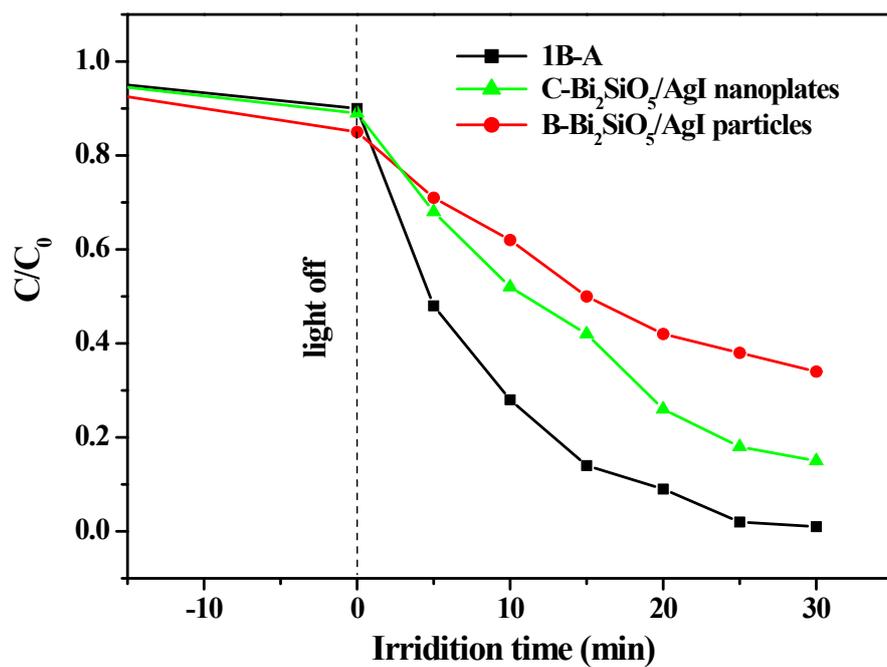


Figure S4. Photocatalytic activities of the Bi₂SiO₅/AgI nanoplates (1B-A), C-Bi₂SiO₅/AgI nanoplates and B-Bi₂SiO₅/AgI particles for ARG degradation under visible light irradiation.