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Synthesis and characterization of novel $\text{Sm}_2\text{O}_3/\text{S}$ -doped $\text{g-C}_3\text{N}_4$ nanocomposites with enhanced photocatalytic activities under visible light irradiation

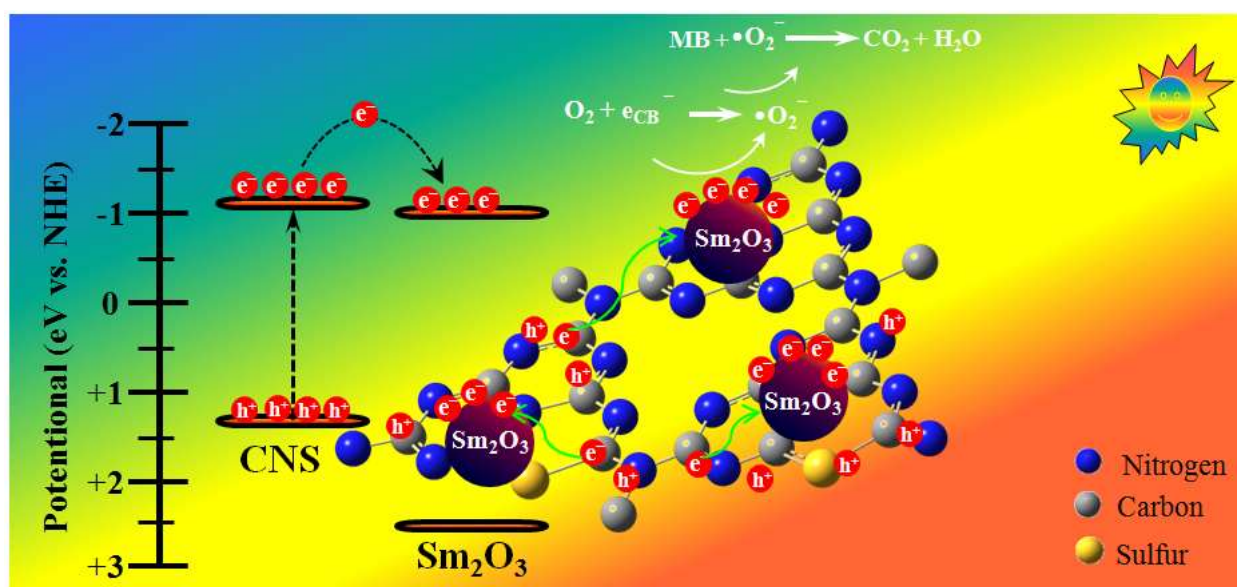
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Graphical Abstract



Highlights

- Sulfur-doped graphitic carbon nitride (CNS) materials were synthesized *in situ*.
- The $\text{Sm}_2\text{O}_3/\text{CNS}$ photocatalysts containing different Sm_2O_3 contents were prepared.
- The $\text{Sm}_2\text{O}_3(8.9)/\text{CNS}$ sample exhibited the highest methylene blue photodegradation.
- The optimum $\text{Sm}_2\text{O}_3(8.9)/\text{CNS}$ provided $\sim 93\%$ MB photodegradation after 150 min.
- Trapping tests proved that $\cdot\text{O}_2^-$ radical was the major oxidative species in the reaction.

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