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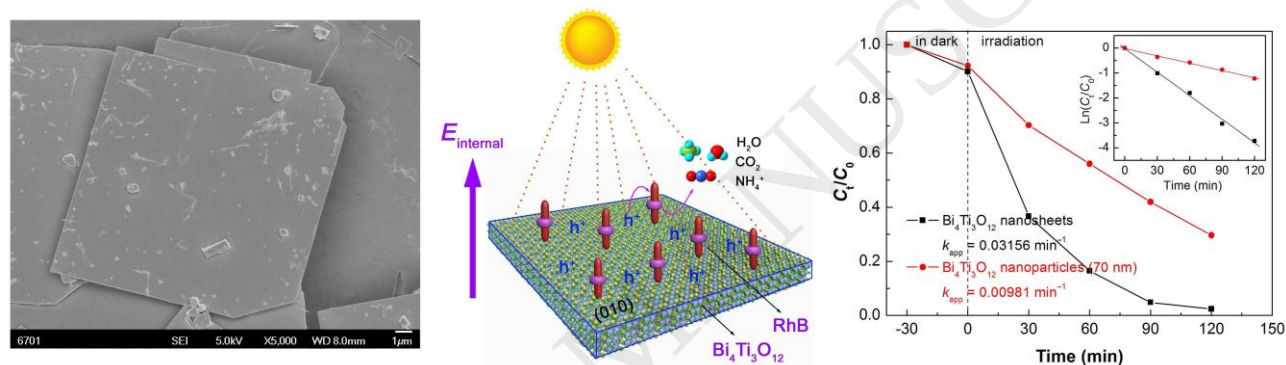
Synthesis and theoretical study of large-sized $\text{Bi}_4\text{Ti}_3\text{O}_{12}$ square nanosheets with high photocatalytic activity

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Graphical abstract



Highlights

Large-sized $\text{Bi}_4\text{Ti}_3\text{O}_{12}$ square nanosheets were synthesized. ► The nanosheets have nearly 100% exposed (010) facet. ► The photocatalytic activity of the nanosheets was evaluated by degrading RhB. ► The nanosheets exhibit photocatalytic activity much higher than nanoparticles. ► The (010) facet has much higher surface energy than (100) and (101) facets

Abstract:

In this work, large-sized $\text{Bi}_4\text{Ti}_3\text{O}_{12}$ square nanosheets with highly exposed (010) facet were synthesized by a hydrothermal route. It is demonstrated that the lateral size of $\text{Bi}_4\text{Ti}_3\text{O}_{12}$ square nanosheets reaches as large as $14 \mu\text{m}$, while their average thickness is only about 60 nm, implying that the nanosheets have nearly 100% exposed (010) facet. The photocatalytic activity of

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