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Title: Three dimensional hierarchical heterostructures of g-C₃N₄ nanosheets/TiO₂ nanofibers: controllable growth via gas-solid reaction and enhanced photocatalytic activity under visible light

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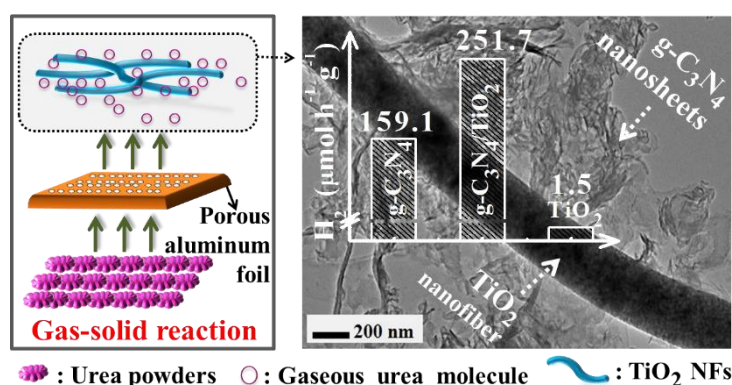
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Three dimensional hierarchical heterostructures of g-C₃N₄ nanosheets/TiO₂ nanofibers: controllable growth via gas-solid reaction and enhanced photocatalytic activity under visible light

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Graphical Abstract



Highlights

- G-C₃N₄ nanosheets were grown on TiO₂ nanofibers by a facile gas-solid reaction.
- The 3D g-C₃N₄ nanosheets/TiO₂ nanofibers had uniform hierarchical heterostructures.
- The mass loading of g-C₃N₄ nanosheets on TiO₂ nanofibers could be controlled easily.
- The g-C₃N₄/TiO₂ hierarchical heterostructures showed superior photodegradation of RhB and H₂ evolution under visible-light.

Abstract

Graphitic C₃N₄ nanosheets were uniformly grown on electrospun TiO₂ nanofibers with three-dimensional nanofibrous networks via a facial gas-solid reaction. The mass loading of g-C₃N₄ nanosheets could be easily controlled by adjusting the mass ratios of gaseous precursors (urea) to TiO₂ NFs. The three-dimensional hierarchical heterostructures of g-C₃N₄ nanosheets/TiO₂ nanofibers could be obtained with

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