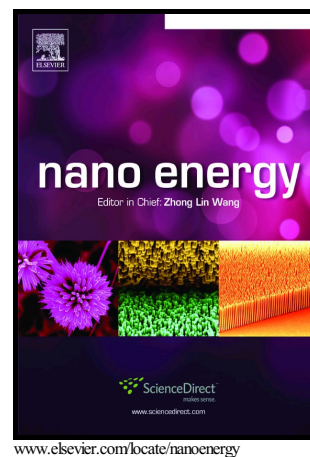


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Defect engineering in photocatalytic materials

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Abstract:

Defect engineering in photocatalytic materials has been proven as a versatile approach to maneuver their performance in solar-to-chemical energy conversion. In this article, the state-of-the-art progress on the defect-engineered photocatalytic materials is reviewed. We first give the critical classifications for defects in photocatalysts. Then various strategies for fabricating defects in photocatalytic materials are summarized together with their characterization techniques. As a focus, the promotion of three basic steps in photocatalysis, including light absorption, charge transfer and separation, and surface catalytic reaction by defect engineering is discussed in detail. Moreover, some other important functions of defects in photocatalysis are introduced in the article, followed by the discussion on some recent

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