



Advanced Oxide-Based Materials for Photocatalytic Applications

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Message from the Guest Editor

Oxide-based photocatalysts have become a viable technology in various fields of application, such as photovoltaics, artificial photosynthesis and water splitting, hydrogen photoproduction, CO₂ reduction, organic synthesis, chemical sensors, and photodegradation of air pollutants. The fields of application shown are very broad, and the study of new oxide-based materials in combination with organic compounds and/or metal nanoparticles is widely studied. After the historical discovery of Fujishima and Honda, much of the work was performed by taking the metal oxide system based on d0 and d10, and TiO₂ is the most widely used oxide in the photocatalytic application, but other oxides can be used (ZnO₂, Fe₂O₃, Ta₂O₃, CuO, NiO, Cr₂O₃, RuO₂, etc.). However, depending on the oxide-based material of the field of application, the different crystalline shape and composition can drastically modify the properties. In recent years, various specific aspects of oxide-based photocatalysis have been investigated. The purpose of this Special Issue is to show the current state-of-the-art in the synthesis, functionalization, characterization, and application of oxide-based materials in photocatalysis.





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Message from the Editor-in-Chief

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