Advances in Materials Science and Engineering

Hindawi

Special Issue on

Graphene-Based Materials for Photocatalysis

CALL FOR PAPERS

The growing global energy demand and environmental impact of fossil energy resources have led to energy security and global climate change issues. Photocatalysis has demonstrated tremendous potential in dealing with these issues in different ways such as CO_2 reduction, volatile organic compound degradation, and water treatment. In the drive towards green and sustainable development, carbon materials without metal elements, particularly graphene-based, have been explored and studied extensively for photocatalytic applications. They have attracted increasing attention due to their superior performance. However, the zero-band gap property of pristine graphene weakens their activity and limits their broader applications.

The introduction of heteroatoms into graphene-based materials presents the potential to tweak electronic and electrochemical properties by changing the electronic density. Accordingly, doping with foreign nonmetallic atoms has been demonstrated as a successful method to tune graphene's electronic structure, improving performance significantly.

For this special issue, we welcome both original research and review articles that examine recent advanced technology and engineering approaches for designing, synthesizing, characterizing, and evaluating these graphene-based materials for photocatalytic applications, with a focus on their experimental investigations.

Potential topics include but are not limited to the following:

- Novel approaches for the synthesis of advanced graphene-based materials
- Advanced techniques for the characterization of graphene-based materials
- Engineered graphene-based materials for various photocatalytic reactions
- Studies that explore the mechanism of graphene-based materials for various photocatalytic applications

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/amse/grapm/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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