



Advanced Materials and Coatings for Photocatalytic Applications

Guest Editor:

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Message from the Guest Editor

Dear Colleagues,

Photocatalysis is a technique that uses light energy to successfully initiate chemical reactions in order to breakdown harmful contaminants or produce fuels. Nonetheless, there are issues, such as the poor stability of nanocatalysts, the low efficiency of photogenerated carrier transport and separation, and unclear mechanisms of charge separation and transfer. Nanostructured photocatalysts are difficult to separate or recycle, and some metal ions from semiconductor photocatalysts are dissolved out by photocorrosion, which results in secondary pollution. Therefore, nano-sized semiconductor or polymer coatings have been grown on nanostructured photocatalysts, and these can accelerate carrier transport and separation or enhance the stability of catalysts. This Special Issue attempts to evaluate the latest basic and advanced developments in advanced materials and coatings used in photocatalytic applications, including organic pollutant removal, wastewater treatment, VOCs and NO_x elimination, H₂ production, CO₂ or N₂ conversion, and so forth.





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Message from the Editorial Board

Now more than ever, research is asked to deliver knowledge and technologies to solve the major challenges faced by our society. The development of new materials and devices for (without the ambition to be exhaustive) energy, health and food technology, together with the need for establishing processes that reduce the impact on critical resources and the environment, is indeed in the spotlight of most contemporary research. Surface science and engineering play a key role in this regard, with an incredible potential in delivering new and deep scientific understanding and technical solutions essential to solve most of the major societal challenges.

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