

## Special Issue on Photocatalysis for a Sustainable Environment

# CALL FOR PAPERS

In the area of catalysis, heterogeneous photocatalysis plays a vital role in sustainable environmental processes. Large amounts of bio-products in organic waste are produced during the course of reactions in many industrial applications. The bio-product water is one of the universal solvents used in processes of reaction and usually requires further purification which can be aided by photocatalysis. Additionally, removal of organic or inorganic waste from industrial effluent requires degradation or conversion through photocatalysis.

Effluents mainly from jute, oil refineries, leather, paint, agro-processing, chemical and textile industries can result in substantial contamination of fresh water. In recent years, research exploring the removal of products from organic water via photocatalysis has gained increasing attention for the development of a sustainable contaminant-free environment. Therefore, development of photocatalysts has great importance in academia and industry. Photocatalysis has applications in eliminating pollutants from air and water, water splitting to generate hydrogen, odor control, cancer cell inactivation, and bacterial inactivation. Photocatalysis has several applications in environmental cleaning, washing or end product formation, and can therefore play a vital role in the development of a sustainable pollution-free environment.

Developing advanced methods to purify industrial water is a challenging research area given the presence of organic waste in industrial water. Therefore, the removal of organic waste in addition to metal contamination is a relevant topic in photocatalysis research. Photocatalysis research is also emerging in cancer cell studies, bacterial decomposition, in the development of photocatalytic materials for solar energy conversion and storage, for catalytic elimination and adsorption of environmental pollutants, artificial photosynthesis, hydrogen production, carbon dioxide reduction and dye degradation etc. Therefore, it has become important to pursue a methodology to address these problems, which impose a significant impact on environmental sustainability. Additionally, the materials for photocatalysts should be environmentally sustainable, have longevity and be inexpensive.

The aim of this Special Issue is to provide research on novel photocatalytic materials for the purification of water, for hydrogen production from water splitting, and for eco-friendly photo catalytic materials for cancer cell inactivation and bacterial degradation studies.

Potential topics include but are not limited to the following:

- ▶ Preparation, characterization, activation, deactivation and regeneration of novel and commercially applicable eco-friendly photocatalysts
- ▶ Understanding of photocatalysts used in environmental pollution treatment
- ▶ Water splitting to produce hydrogen through photocatalysis
- ▶ Inactivation of cancer cell studies using photocatalytic materials
- ▶ Bacterial decomposition studies using photocatalytic materials
- ▶ Solar energy conversion and storage using photocatalysts
- ▶ Photocatalytic elimination or adsorption of environmental pollutants
- ▶ Artificial photosynthesis
- ▶ Photo catalytic dye degradation
- ▶ Photocatalytic materials for energy conversion and storage

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

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