



International Journal of Photoenergy

Special Issue on
**Structurally and Elementally Promoted
Nanomaterials for Photocatalysis 2016**

CALL FOR PAPERS

Photocatalysis, in which photoinduced charge carriers are essential for a variety of catalytic behaviors, has attracted considerable attention in recent years across a broad range of environmental and energy-related fields. It has nowadays become one of the most important ways of converting photoenergy or even solar energy. Noticeably, employing nanomaterials as heterogeneous photocatalysts can lead to many outstanding performances. This is because the nanomaterials with particle or pore sizes in nanometers are favourable over traditional catalysts due to the enhanced surface to volume ratio, consisting of more catalytic active sites, which not only increases the rate of reaction, but also generates specific products. However, these nanocatalysts still suffer from low photocatalytic efficiency.

Although many factors can promote the photocatalytic activity, we grouped them into two main categories, structural and elemental modifications. For example, the structural controlling of the particle size, specific surface area, pore volume, and so forth may contribute to the increased mass transport, adsorption sites, and photoabsorption efficiency. On the other hand, the chemical doping of foreign elements can greatly alter the optical property of the resultant nanomaterials leading to extended photoabsorption range and reduce the recombination of photoinduced electrons and holes. Thus the use of these two mentioned strategies may lead to a highly efficient nanocatalyst. To achieve the rational design of photocatalysis, we invite investigators to contribute original research articles as well as review articles on the development of novel nanomaterials for the use of photocatalysis.

Potential topics include, but are not limited to:

- ▶ Photocatalysts with different morphologies like nanocrystals, nanopores, and hierarchical structure
- ▶ Doped or composite nanomaterials for photocatalysis
- ▶ Self-doped semiconductors for photocatalysis
- ▶ Various photocatalytic applications like water splitting, pollutant removal, CO₂ reduction, and useful products synthesis
- ▶ Both experimental and theoretical results
- ▶ Recent advances in nanomaterials as photocatalysts

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/ijp/stel16/>.

Lead Guest Editor

Tian-Yi Ma, University of Adelaide,
Adelaide, Australia
matianyichem@gmail.com

Guest Editors

Lei Zhang, University of Adelaide,
Adelaide, Australia
lei.zhang01@adelaide.edu.au

Jian-Liang Cao, Henan Polytechnic
University, Jiaozuo, China
caojianliang@gmail.com

Xu Zong, Chinese Academy of Sciences,
Beijing, China
xzong@dicp.ac.cn

Yong Ma, Bohai University, Jinzhou,
China
mayong0416@163.com

Lei Liu, Shandong University of Science
and Technology, Shandong, China
slicel@163.com

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