Special Issue

Photocatalysis: Recent Developments and Technological Advancements

Message from the Guest Editor

Water purification is one of the main issues for sustainable development for the future. After the discovery of the photocatalytic behavior of graphitic carbon nitride g-C_3N_4, research on catalysts has increased in order to improve their performance by combining with other composites. The fascinating properties of g-C_3N_4 include visible light response, good oxidation power, environmental friendliness, good chemical and thermal stability, metal-free nature, easy fabrication from precursors, and easy modifications of its polymer structure. Typically, the active catalyst is deposited on a skeleton with high porosity consisting of stable oxides or carbonaceous materials. The photocatalytic performance depends on the bandgap, but also other parameters, such as the recombination rate, carrier concentration, electron mobility, and modification of orbitals of attached particles such as dyes or nanosized noble metal particles. Photocatalysts can not only improve the efficiency of various chemical reactions, but have also successfully demonstrated water purification through the degradation of organic pollutants, even including bacteria or viruses.

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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