Special Issue

Synthesis and Application of Photocatalysts and Electrocatalysts: Latest Advances and Prospects

Message from the Guest Editors

The design and synthesis of electrocatalysts and photocatalysts for the affordable and sustainable splitting of sea water and the fabrication of energy-efficient devices to handle the electrolysis/photolysis process is desirable to promote the commercialization of H2 as a future green energy. Furthermore, noble metal- and transition metal-based nanocatalysts have garnered applications in the splitting of H2S & NH3 and utilization of CO2. Various nonmetallic dopants have strongly improved general catalytic behavior and selectivity. Design strategies have been adopted to alter the electrocatalytic/photocatalytic efficiency, durability and environmental robustness. Heterostructures of multiple catalytic systems have emerged as another avenue to promote catalytic efficiency through control of the interface structure and the extent of doping. Considering the environmental concerns associated with carbon emissions from hydrocarbon fuels and the efforts undertaken to achieve zero carbon emissions in the near future, the research and development activities in the domain have strongly reinforced current efforts to reduce...

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Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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