Special Issue

Advanced Catalysts towards Lignocellulosic Biomass Conversion and Water Splitting

Message from the Guest Editors

Development of new energy is currently a significant supplement of traditional fossil resources. Lignocellulosic biomass conversion and water splitting are two of the most important styles of energy conversion and utilization. However, it is challenging to develop high-performance catalysts for the two processes. Current applied catalysts are mainly precious and non-noble metal catalysts coupled with acid and/or base sites for one-pot conversion of lignocellulosic biomass to sugars and sugar alcohols, as well as some platform molecules. Various transition-metal hydroxides, nitrides, chalcogenides, and phosphides have been investigated as efficient bifunctional electrocatalysts for water splitting. The aim of this Special Issue is to understand the basic principles of catalyst preparation and catalytic performance, as well as the structure–property relationship for lignocellulosic biomass conversion and water splitting. Today, it is widely recognized that a rational design is necessary to the render superior properties needed and, thus, enable excellent catalytic performance of catalysts during reactions.

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Deadline for manuscript submissions

closed (20 April 2023)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/132070

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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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