

Special Issue

Clean Hydrogen for Decarbonizing Energy Sector

Message from the Guest Editors

Climate change is one of the critical challenges of the 21st Century. Combustion of fossil fuels are the main source of greenhouse gases (GHGs). At present, hydrogen is produced primarily from catalytic steam methane reforming (SRM) and coal gasification processes. Both of these processes lead to GHG emissions. Zero-carbon hydrogen is observed as a promising fuel to decarbonize energy, transportation, industry, and agricultural sectors which account for more than 80% of the global GHG emissions. To meet the rising demands of global hydrogen economy, the emphasis has been on producing carbon-neutral or carbon-negative hydrogen at a low cost.

The overall focus of this Special Issue is zero-carbon and low-cost hydrogen production for decarbonizing energy, transportation, power, and agricultural sectors. The scope mainly includes hydrogen production through gasification of biomass and waste resources, electrochemical water splitting, and microbial fermentation of biomass.

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