Special Issue

Towards Artificial Photosynthesis: Sustainable Hydrogen Utilization for Photocatalytic Reduction of CO_2 to High-Value Renewable Fuels

Message from the Guest Editors

Hitherto, various pathways have been developed to promote CO2 reduction. However, the performance of current catalysts has still been low due to the utilized material and reactor. Utilization of sustainable hydrogen has turned out to be a promising approach to boost CO2 reduction in terms of solar conversion efficiency and selectivity. Thus, the generation of high-value chemicals produced in CO2 reduction reaction is feasible with the assistance of hydrogen. Therefore, this approach offers great opportunities for the generation of high-value chemicals from CO2. In this context, the exploration of robust materials and proper catalytic reactors has been considered the key component to address those aforementioned restrictions. This Special Issue aims at providing novel approaches toward photocatalytic CO2 reduction associated with sustainable hydrogen. This issue will cover state-of-the-art development of material-, reactor-, and theoretical-related investigations in the field the solar-driven hydrogenation of CO2.

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