Special Issue

Novel Electrocatalysts for CO_2 Reduction

Message from the Guest Editor

This transformation is capable of reducing carbon emissions and inducing a “fuel switching” that exploits renewable energy sources. However, the industrial utilization of CO2 to fuel is currently under development. Considerable emphasis has been placed on increasing the present low efficiency and low production rate. In fact, depending on the selected catalyst, reaction conditions and electrolyte, different products—such as carbon monoxide, formic acid, and hydrocarbons including methane, methanol, or mixtures thereof—can be obtained. Moreover, the CO2 is typically dissolved in aqueous media and, consequently, the hydrogen evolution reaction (HER) is in inevitable competition with CO2 reduction. The scope of this issue is to exploit the possibility of novel nano structured non-noble materials to be used for the aforementioned applications, in high current densities and with high selectivity, toward the production of value added products. The thorough electrochemical analysis of the materials (from cyclic voltammetry to Impedance spectroscopy) is highly encouraged.

Guest Editor

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