Special Issue

Advanced Nanomaterials for Electrocatalysis: Synthesis, Characterization and Application

Message from the Guest Editor

This Special Issue aims to attract authors seeking to present their up-to-date work on advanced nanomaterials for electrocatalysis. The focus is on a rational design and characterization of functional nanomaterials and the demonstration of the enhancement of their electrocatalytic performance as electrode materials for alternative energy devices (AED). Among the new advanced nanomaterials, those consisting of platinum group metals as highly active electrocatalysts for AEDs and those of non-precious metals with equal or even higher activity are especially interesting. These include nanoparticles of single-crystalline structures, (multi)metallic nanoparticles, alloys with low noble metal content and various composite materials consisting of non-precious metals. High electrocatalytic activity and long-term stability are the most decisive properties of such supported nanocatalysts for their use as electrodes contributing to the improved AED performance. Besides, for this Special Issue, the electrochemical reactions of interest are (but not limited to): hydrogen evolution/oxidation, oxygen reduction/evolution, and CO, methanol and ethanol oxidation.

Guest Editor

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