Special Issue

Advanced Electrocatalysts for Clean and Renewable Energy Conversion and Storage Processes

Message from the Guest Editors

Electrochemical devices such as metal–air batteries, water-splitting cells, and alkaline fuel cells present clean, green, and renewable energy technologies, and they have been widely examined in recent decades. Namely, the crucial impacts of their high performances are electrocatalysts for hydrogen evolution reaction (HER), oxygen evolution reaction (OER), and oxygen reduction reaction (ORR). The state-of-the-art electrocatalysts for all three reactions are noble metal-based catalysts where Pt/C is the best electrocatalyst for HER and ORR and IrO2 and RuO2 for OER. On the other hand, the scarcity and high cost of these electrocatalysts present a huge disadvantage in their application in renewable energy technologies. Because of this, it is fundamentally important to make and explore low-cost electrocatalysts with high activity and stability for HER, OER, and ORR. This Special Issue, entitled "Advanced Electrocatalysts for Clean and Renewable Energy Conversion and Storage Processes", will focus on novel, easy synthesis and low-cost electrocatalysts with high activity for HER, and/or ORR, and/or OER in alkaline media.

Guest Editors

Dr. Jadranka Milikić

Faculty of Physical Chemistry, University of Belgrade, Studentski trg 12–16, 11158 Belgrade, Serbia

Dr. Aldona Balčiūnaitė

Department of Catalysis, Center for Physical Sciences and Technology, Saulėtekio Ave. 3, LT-10257 Vilnius, Lithuania

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
processes@mdpi.com

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Editor-in-Chief

Prof. Dr. Giancarlo Cravotto
Department of Drug Science and Technology, University of Turin, Via P. Giuria 9, 10125 Turin, Italy

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