# Special Issue

# Chemical Characterization of Nanomaterials with Electrochemical Technology

## Message from the Guest Editors

This study details the chemical characterization of nanomaterials employing advanced electrochemical techniques, focusing on their potential for precise structural and compositional determination. Electrochemical methodologies, including cyclic voltammetry, chronoamperometry, electrochemical impedance spectroscopy (EIS), and potentiodynamic polarization, were systematically applied to evaluate redox behavior, surface activity, and stability of nanostructured materials under various conditions.

Results demonstrate significant correlations between electrochemical properties and the nanomaterials' functional performance, emphasizing the critical role of meticulous electrochemical characterization for optimizing nanomaterial applications in sensors, energy storage devices, catalysis, and biomedical fields. Furthermore, this approach offers a robust, efficient, and non-destructive alternative to conventional analytical techniques, presenting substantial advantages for routine characterization and real-time monitoring of nanomaterials during synthesis and practical applications.

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## Deadline for manuscript submissions

31 January 2026

**Processes**

**an Open Access Journal by MDPI**

**Impact Factor 2.8**
**CiteScore 5.5**

mdpi.com/si/244588

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