

## Electrochemical Study of Ni and/or Fe Based Mono- And Bi- Hydroxides

**Authors :** H. Benaldjia, N. Habib, F. Djefafia, A. Nait-Merzoug, A. Harat, J. El-Haskouri, O. Guellati

**Abstract :** Currently, the technology has attracted knowledge of energy storage sources similar to batteries, capacitors and super-capacitors because of its very different applications in many fields with major social and economic challenges. Moreover, hydroxides have attracted much attention as a promising and active material choice in large-scale applications such as molecular adsorption/storage and separation for the environment, ion exchange, nanotechnology, supercapacitor for energy storage and conversion, electro-biosensing, and catalysts, due to their unique properties which are strongly influenced by their composition, microstructure, and synthesis method. In this context, we report in this study the synthesis of hydroxide-based nanomaterials precisely based on Ni and Fe using a simple hydrothermal method with mono and bi precursors at optimized growth conditions (6h-120°C). The obtained products were characterized using different techniques, such as XRD, FTIR, FESEM and BET, as well as electrochemical measurements.

**Keywords :** energy storage, Supercapacitors, nanocomposites, nanohybride, electro-active materials.

**Conference Title :** ICMHN 2023 : International Conference on Multifunctional, Hybrid and Nanomaterials

**Conference Location :** Lisbon, Portugal

**Conference Dates :** October 30-31, 2023