Topical Collection

Layered Double Hydroxides and Related Materials for Advanced Heterogeneous Catalytic Processes

Message from the Collection Editors

Layered double hydroxides (LDHs) belong to the class of anionic clays and possess some specific properties, such as uniform distribution of cations/anions in the network, tailored textural characteristics, high surface area, both acid-base and redox properties, and memory effect, which make them peculiar catalytic materials, catalyst supports, and precursors for multicationic mixed oxides, supported metal catalysts, high-entropy oxides, and composite or hybrid materials (polymer/LDH nanocomposites, graphene oxide/LDH hybrids, core/shell multifunctional materials, thin films, etc.). They can act as acid-base, redox, bifunctional or multifunctional heterogeneous catalysts, photocatalysts, and electrocatalysts for different processes. Thus, the present topical collection is devoted to the investigation of the catalytic behavior of innovative LDH-based materials in a wide range of challenging processes, including, but not limited to, the synthesis of value-added chemicals and fuels, biomass conversion, energy production, pollution abatement, etc.

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