



*catalysts*



*Special Issue Reprint*

## **Layered Double Hydroxide-Based Catalytic Materials for Sustainable Processes**

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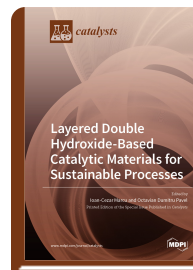
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ISBN 978-3-0365-4979-8 (Hardback)

ISBN 978-3-0365-4980-4 (PDF)



Layered double hydroxides (LDHs), also known as two-dimensional anionic clays, as well as the derived materials, including hybrids, nanocomposites, mixed oxides, and supported metals, have been highlighted as outstanding heterogeneous catalysts with unlimited applications in various processes involving both acid–base (addition, alkylation, acylation, decarboxylation, etc.) and redox (oxidation, reduction, dehydrogenation, etc.) mechanisms. This is mainly due to their flexibility in chemical composition, allowing the fine tuning of the nature of the active sites and the control of the balance between them. Additionally, LDHs display a large anion exchange capacity and the possibility to modify their interlayer space, constraining the size and type of reactants entering in the interlamellar space. Furthermore, their easy and economic synthesis, with high levels of purity and efficiency, at both the laboratory and industrial scales, make LDHs and their derived materials excellent solid catalysts. This Special Issue collects original research papers, reviews, and commentaries focused on the catalytic applications of these remarkable materials.



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