Special Issue

Catalytic Applications of Layered Double Hydroxides

Message from the Guest Editors

As two-dimensional anionic clays, LDHs consist of positively charged brucite-like layers (M(OH)6 octahedra) and interlayer anions and are described by the general formula [M2+1−XM3+X (OH)2]X+[An−]X /n ·mH2O, where M represents the metal cations and A represents the intercalated anionic species. Upon calcination, LDHs transform into mixed metal oxides. LDH-based materials benefit from their structural and compositional flexibility, cost effectiveness, relatively high specific surface area, abundant hydroxyl groups, thermal stability, unique memory properties, and semiconductor and charge transport characteristics. These properties collectively enhance their potential as catalysts for various applications. This Special Issue will explore, but is not limited to, the design and synthesis of layered double hydroxides and their derived mixed metal oxides for many applications.

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