



Synthesis and Application of Porous Clay Materials in Heterogeneous Catalysis and Treatment of Hazardous Wastes

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Message from the Guest Editor

Dear Colleagues,

Clay minerals are hydrous aluminum silicates (bentonite/montmorillonite/kaolinite) and the key constituents of soils containing magnesium, alkali metals, alkaline earths, and other cations. Because of their several valuable properties (ion-exchange capacity, porous structure, large surface area, surface charge, highly crystallinity, and structure stability), clay materials are potentially used in numerous applications, e.g., heterogeneous catalysis (e.g., catalytic conversion in petrochemical industries), removal/sorption of hazardous waste (e.g., toxic metals, radionuclides, and organic contaminants), and as backfill material in nuclear waste disposal. The synthesis of clay materials has an edge over their natural (mineral) counterparts as their properties (ion-exchange capacity, surface area, etc.) could be efficiently altered by controlled synthesis conditions. Moreover, post-synthesis treatment of clay materials (e.g., surface modification) using various organic/inorganic surface modifiers can significantly change their potential applications in various fields/sectors.





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Message from the Editor-in-Chief

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