عنوان مقاله:

Metal-Organic Frameworks (MOFs) as Adsorbents for Purification of Dye-Contaminated Wastewater: A Review

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خلاصه مقاله:

Continual and excessive accumulation of coloured contaminants discharged into various water bodies by many industries (textile, leather, paper, dyestuff and plastic) in our environment leading to direct and indirect contamination and pollution of our water system endanger human and aquatic lives. The thermal and photostability nature of these coloured contaminants which makes them difficult to be eliminated from our water system is of great concern. Researchers are continually putting massive attention on the possibilities of improving existing methods and technologies, developing novel strategies, and bring about solutions to subdue these dye-related water contamination problems which will be economically and environmentally friendly. One of the most sustainable technology or method employed in the decontamination and purification of coloured wastewater is adsorption. It possesses several advantages as it has simple and easy design of operation and is highly economical. Metal-organic frameworks (MOFs) play substantial roles under this application as a new class of porous adsorbents that are characterized by a highly crystalline molecular structure and relatively large surface area which is a significant parameter to be considered in adsorption processes. They are also recommended as a good choice of sorbents employed in wastewater purification technologies as a result of their tunable features. This research study aimed at providing a comprehensive review of recent studies on the adsorptive use of MOFs for the removal of these developing organic .pollutants from wastewater

کلمات کلیدی:

Adsorption, Dyes, Efficiency, Metal-organic Frameworks, Purification, Wastewater