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ADSORPTIVE REMOVAL OF
POLLUTANTS FROM TEXTILE
WASTEWATER BY METAL ORGANIC
FRAMEWORKS (MOFs)

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ABSTRACT

In recent years, water pollution is increased with increasing industrialization. The industrial requirement is increased with human demands day by day. High amount of wastewater with color is created from many industries including textile, paper, printing, leather etc. Textile wastewater characteristics are varying from industry to industry, and also, they are varying according to the type fabric produced, factory schedule, etc. The wastewater that contains dyes must be treated before discharge due to its negative effects on human and environmental health.

In recent years, new methods were developed to remove the dyes from aqueous solutions. The adsorption process has advantages such as efficient treatment effect, simple operation design, lack of cost effectiveness.

In this study, the studies on the synthesis of Metal Organic Frameworks (MOFs), which are substances developed recent years, and the adsorption capacities of MOFs over different types of dyes were reviewed. MOFs are porous materials formed by combining organic compounds and metal ions. MOFs are considered as the most promising aspirants in pollutant removal due to their high surface area, ultrahigh porosity, tunable pore sizes.

According to the obtained results, adsorption using MOFs can effectively remove the dye from aqueous solutions.

Keywords: MOFs, Adsorption, dye, methyln blue, methyln orange, congo red, MIL101(Fe), Cu-BTC MOFs, MOF235, Ni-Zn MOFs, MOF-199, UiO-66 MOFs