

Removal of Textile Dye from Industrial Wastewater by Natural and Modified Diatomite

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Abstract :

The textile industry produces high amount of colored effluent each year. The management or treatment of these discharges depends on the applied techniques. Adsorption is one of wastewater treatment techniques destined to treat this kind of pollution, and the performance and efficiency predominantly depend on the nature of the adsorbent used. Therefore, scientific research is directed towards the development of new materials using different physical and chemical treatments to improve their adsorption capacities. In the same perspective, we looked at the effect of the heat treatment on the effectiveness of diatomite, which is found in abundance in Algeria. The textile dye Orange Bezaktiv (SRL-150) which is used as organic pollutants in this study is provided by the textile company SOITEXHAM in Oran city (west Algeria). The effect of different physicochemical parameters on the adsorption of SRL-150 on natural and modified diatomite is studied, and the results of the kinetics and adsorption isotherms were modeled.

Keywords : wastewater treatment, diatomite, adsorption, dye pollution, kinetic, isotherm

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