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Effective Removal of Toxic Methylene Blue Dye from Textile Industry Wastewater using Graphene Oxide- Silica [GO-Si] Nano Composite Adsorbent

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Abstract : Textile companies release wastewater containing lots of colors including Methylene Blue (MB) dye. Those colors are harrmful for human well being. Various procedures have been utilized to expel the color from industrial wastewater. Out of different methods used in practice, adsorption was observed to be exceptionally successful and effective. The reason behind the especiality is when nanocomposites are utilized as an adsorbent, as it has a better adsorption limit, selectivity, and solidness than nanoparticles. In this research, a peculiar synthesis of adsorbent Graphene Oxide Silica [GO-Si] is carried out and it is used to remove methylene blue dye from texile industry wastewater. Analysing the performance of MB dye removal from the waste water using this adsorbent seems to be more effective. Various studies have been carried out for successful analysis of the performance such as adsorption isotherm study, Freundlich and Langmuir analysis. In addition the adsorption process was well explained by a pseudo-second-order kinetics models.

Keywords : Methylene Blue, Graphene Oxide- Silica, Industrial Wastewater, Adsorption, Nano Composites

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