

	Title: Removal of Methylene Blue from Industrial Wastewater in Palestine Using Polysiloxane Surface Modified with Bipyrzolic Tripodal Receptor
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Abstract: <p>Pollution is the process of making land, water, air or other parts of the environment dirty and unsafe or unsuitable to use. This can be done through the introduction of pollutants into a natural environment. Toxic pollution affects more than 200 million people worldwide, according to Pure Earth, a non-profit environmental organization. In some of the world's worst polluted places, babies are born with birth defects, children have lost 30 to 40 IQ points, and life expectancy may be as low as 45 years because of cancers and other diseases. Water pollution happens when chemicals or dangerous foreign substances are introduced to water, including chemicals, sewage, pesticides and fertilizers from agricultural runoff, or metals like lead or mercury [1].</p> <p>The need to maintain a cleaner environment for the survival of both aquatic and terrestrial lives including human beings is very crucial and is a subject of increasing concern to the environmentalist. Pollution caused by agents such as heavy metals and dyes are amongst the list which rendered the environment unwholesome and posed serious health concern to the populace [2].</p> <p>Industrial effluents are one of the major causes of environmental pollution because effluents discharged from dyeing industries are highly colored with a large amount of suspended organic solid. Untreated disposal of this colored water into the receiving water body either causes damage to aquatic life or to human beings by mutagenic and carcinogenic effect. As a matter of fact, the discharge of such effluents is worrying for both toxicological and environmental reasons. Conventional wastewater treatment methods for removing dyes including physicochemical, chemical and biological methods, such as coagulation and flocculation, adsorption, ozonation, electrochemical techniques, and fungal decolorization. Among these methods adsorption has gained favor in recent years due to proven efficiency in the removal of pollutants from effluents to stable forms for the above treatment methods [3].</p> <p>Water pollution due to color dyestuff industrial waste becomes a major concern worldwide. Many industries including leather and textile industries use dyes extensively in different unit operation. There are more than 100,000 commercially available dye and more than 7x10⁵ tons per year are produced annually. Wastewater containing dyes are very difficult to treat, since the dyes are recalcitrant organic molecules, resistant to biological degradation and are stable to light. There are different methods for the removal of textile effluents [4].</p> <p>Many dyes are widely used in different industries, such as textile, paper, rubber, plastics, leather, food and pharmaceutical. These industries release colored wastewater which may present an ecotoxic hazard and introduce the potential danger of bioaccumulation, which affect the human food chain. Wastewater containing small amounts of dyes can affect the aquatic life because of its toxicity and resistance to</p>	

breakdown with time. Most of the dyes are toxic and carcinogenic, causing allergy, skin irritation. Chemical, physical and biological methods were used for removing dyes from wastewater. Adsorption is an effective and low-cost physical and chemical method for removing dyes from wastewater [5].