

A Comprehensive Overview On Advanced Approaches for Remediation of Textile Wastewater

Shumaila Kiran^{1*}, Tahsin Gulzar¹, Bushra Munir²

¹Department of Applied Chemistry, Government College University, Faisalabad, Pakistan

²Institute of Chemistry, University of Sargodha, Sargodha, Pakistan

*E-mail: shumaila.asimch@gmail.com

ABSTRACT

Fabricators utilize textile dyes to create a variety of goods, including leather, paper, and certain items needed in daily life. Industrial effluents from the textile industry leak synthetic colours into the environment. It lowers photosynthetic activity and makes living things more poisonous. The extraction of textile colours from industrial wastewater is now a major environmental concern on a global scale. Water contamination poses a serious hazard to both the environment and human health because it can lead to several chronic diseases. Despite the fact that many dangerous compounds are contained in textile dyes, it is vital to remove them from industrial effluents as quickly as possible using the proper treatment. Numerous textile dyes come in a variety of chemical structures, each with unique features that relate to industrial reaction activity. A discussion of the poisonous and mutagenic properties of textile dyes, as well as the bacteria and other embedded organisms, provides a prelude to the release of metals into the environment. The wastewater that is released from textile companies passes through a variety of physio-chemical processes, including flocculation, coagulation, ozonation, etc. biological processes to remove metals, phosphorus, nitrogen, and organics are then applied. Primary therapy, secondary treatment, and tertiary treatment are the three steps that make up the entire treatment procedure. Nanotechnology is an emerging field for its wide applications in wastewater treatment. It is crucial to consider both the technical and financial viability of an integrated process for the treatment of textile effluents.

Keywords: Textile wastewater, Treatment, Physical methods, chemical methods, biological methods, nanotechnology, comparison
