IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 8, April 2023

A Review Based on the Bioremediation of Industrial Wastewater and Effluents

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Abstract: *Industries face a formidable challenge in dealing with pollutant removal from their effluents, given the severe environmental risks posed by these contaminants. Nanotechnology emerges as a promising approach, as it allows the creation of eco-friendly nanomaterials, thereby reducing the financial burden associated with pollutant mitigation. The use of nanomaterials gains considerable attention owing to their enhanced physical, chemical, and mechanical properties. Integrating microorganisms in nanoparticle production further bolsters green biotechnology as a nascent field within nanotechnology, offering sustainable production and cost reduction prospects. This mini review delves into the various facets of industrial effluent bioremediation through the incorporation of microbial nanotechnology. By harnessing nanotechnology alongside enzymes, we can achieve heightened enzyme activity and reusability. Additionally, this review underscores the advantages of nanotechnology over conventional practices in these crucial domains.*

Keywords: industrial effluents, pollutant removal, nanotechnology, eco-friendly nanomaterials, microorganisms, green biotechnology, cost reduction, microbial nanotechnology, enzyme activity

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