

Nanoparticles Used for Bioremediation of Heavy Metals in Wastewater [†]

Varad Nagar ¹, Vinay Aseri ¹, Mahipal Singh Sankhla ¹, Kumud Kant Awasthi ², Chandra Shekhar Yadav ²

¹ Department of Forensic Science Vivekananda Global University, Jaipur, India; varad.leo10@gmail.com (V.N.); vinayaseri510@outlook.com (V.A.); mahipal4n6@gmail.com (M.S.S.);

² Department of Life Sciences, Vivekananda Global University, Jaipur, India; kumud.awasthi@vgu.ac.in (K.K.A.); chandra.yadav@vgu.ac.in (C.S.Y.)

³ School of Forensic Science, National Forensic Science University, Gandhinagar, Gujrat, India; yadavcs82@hotmail.com (C.S.Y)

* Correspondence: varad.leo10@gmail.com ; (V.N.);

[†] Presented at Environmental Toxicology: Impact on Human Health (Environ Tox 2021)

Received: 5.11.2021; Revised: 18.11.2021; Accepted: 20.11.2021; Published: 30.11.2021

Abstract: The arena of nanotechnology has revolutionized the field of bioremediation to overcome the problems of water contamination due to heavy metals. Approaches applied for the monitoring and treatment of contaminants include control of the level of heavy metals in surface water, groundwater, and industrial water and its bioremediation by nanoparticle synthesis. Showing effectiveness of biosynthesized nanoparticles on the removal of common heavy metals found in water, namely, Arsenic(As), Cadmium(Cd), Chromium(Cr), Copper(Cu), Lead Pb), Nickel(Ni), Mercury(Hg). Bioremediation remains an eco-friendly and inexpensive method employed to eliminate toxic compounds like heavy metals present in wastewater. Green technology is the widely accepted method for bioremediation because of its non-toxic effect, clean and eco-friendly approach. In recent years the development of nanotechnology has given new hope towards a positive, sustainable approach for the environment and human welfare.

Keywords: nanotechnology; bioremediation; heavy metals; contaminated water; nanoparticles; biosynthesis.

© 2021 by the authors. This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Funding

This review received no external funding.

Acknowledgments

This review has no acknowledgment.

Conflicts of Interest

The authors declare no conflict of interest.