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Review

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Nanomaterials for the adsorptive treatment of Hg(II) ions from water

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Abstract

The prolific growth of modern industrial practices has been accompanied by the extensive release of byproducts rich in toxic heavy metals (e.g., mercury). Therefore, the abatement of mercury has become a crucial prophylactic measure to protect human health, ecosystems, and food resources. Although several conventional techniques are available, it is highly desirable to develop more efficient and economical adsorbents for the removal of mercury. In this regard, the development of advanced materials with very large surface areas and multifunctional, tailorable, and flexible surface active sites is expected to efficiently promote mercury abatement. This review explores recent trends and advancements in nanomaterial technology for the mitigation of mercury and analyses the current hindrances and future prospects for the development of nanomaterial-based approaches.

Keywords: Nanotechnology, mercury, adsorption, pollution control, wastewater treatment, heavy metal

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