Accepted Manuscript

Review

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

Kumar Vikrant, Ki-Hyun Kim

PII: S1385-8947(18)31963-6
DOI: https://doi.org/10.1016/j.cej.2018.10.022
Reference: CEJ 20085

To appear in: *Chemical Engineering Journal*

Received Date: 3 August 2018
Revised Date: 13 September 2018
Accepted Date: 3 October 2018

Please cite this article as: K. Vikrant, K-H. Kim, Nanomaterials for the adsorptive treatment of Hg(II) ions from water, *Chemical Engineering Journal* (2018), doi: https://doi.org/10.1016/j.cej.2018.10.022

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

Kumar Vikrant[1], Ki-Hyun Kim[1*]

[1] Department of Civil and Environmental Engineering, Hanyang University, 222 Wangsimni-Ro, Seoul 04763, Republic of Korea.

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

***Corresponding Author: kkim61@hanyang.ac.kr (K.H. Kim)**