

# Use of SPIONs for Removal of Heavy Metal and its Isotherm Studies <sup>†</sup>

Jenifer Selvarani A. <sup>1</sup>, Chin Hooi Sze <sup>2,\*</sup>, Raji P. <sup>1</sup>

<sup>1</sup> Department of Biotechnology, School of Bio and Chemical Engineering, Sathyabama Institute of Science and Technology

<sup>2</sup> School of Bioscience, Faculty of Medicine, Bioscience and Nursing, MAHSA University, Jenjarom, Selangor, Malaysia

\* Correspondence: [hooisze0303@gmail.com](mailto:hooisze0303@gmail.com);

<sup>†</sup> Presented at International e-Conference on Bioengineering for Health and Environment (ICBHE 2020)

**Received: 5.07.2020; Revised: 10.07.2020; Accepted: 12.07.2020; Published: 15.07.2020**

**Abstract:** The presence of heavy metals is unpreventable in the current era leading to anthropogenic pollution and production of toxicants such as hexavalent chromium [Cr(VI)] to the environment. It is a common, known carcinogen to humans through inhalation as well as ingestion. With proper treatment of the effluents from industrial activity, the concentration of Cr(VI) would be minimized and eliminated. Superparamagnetic iron oxide nanoparticles (SPIONs) were once employed to evaluate its absorption efficiency against Cr(VI). The research now centered the concern on Cr(VI) elimination with SPIONs with carbon and used in batch adsorption study with optimized pH, adsorbent, and adsorbent-adsorbate concentrations. The adsorption then evaluated the result by Langmuir, Freundlich, and Temkin isotherms.

**Keywords:** Heavy metal; Chromium; toxicity; SPIONs; absorption.

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## Funding

This research received no external funding.

## Acknowledgments

This research has no acknowledgment.

## Conflicts of Interest

The authors declare no conflict of interest.