

# Accepted Manuscript

Biosorption of Chromium from Electroplating and Galvanizing Industrial effluents under Extreme Conditions using *Chlorella vulgaris*

Dr. G. Sibi

PII: S2468-0257(16)30029-2

DOI: [10.1016/j.gee.2016.08.002](https://doi.org/10.1016/j.gee.2016.08.002)

Reference: GEE 21

To appear in: *Green Energy and Environment*

Received Date: 28 June 2016

Revised Date: 10 August 2016

Accepted Date: 23 August 2016

Please cite this article as: G Sibi, Biosorption of Chromium from Electroplating and Galvanizing Industrial effluents under Extreme Conditions using *Chlorella vulgaris*, *Green Energy & Environment* (2016), doi: 10.1016/j.gee.2016.08.002.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



**Biosorption of Chromium from Electroplating and Galvanizing Industrial effluents  
under Extreme Conditions using *Chlorella vulgaris***

**Title Page**

Full Title : Biosorption of Chromium from Electroplating and Galvanizing Industrial effluents under Extreme Conditions using *Chlorella vulgaris*

Running Title : Chromium biosorption using *Chlorella vulgaris*

Author names : **Sibi G\***  
Department of Biotechnology  
Indian Academy Degree College  
Centre for Research and Post Graduate Studies  
Bengaluru - 560 043, Karnataka, INDIA

Corresponding Author : \*Dr. Sibi G  
Department of Biotechnology  
Indian Academy Degree College  
Centre for Research and Post Graduate Studies  
Bengaluru - 560 043, Karnataka, INDIA

Phone No. : +91 99864 52875

Email : gsibii@gmail.com

**Abstract**

Hexavalent chromium [Cr(VI)] is a toxic oxidized form and an important metal pollutant in the water bodies. Biosorption of chromium(VI) offers a potential alternative to conventional metal removal methods. Dried biomass of *Chlorella vulgaris* was used as biosorbent for the removal of Cr(VI) from electroplating and galvanizing industry effluents as a function of biosorbent dosage, contact time, pH, salinity and initial metal ion concentration. Batch experiments were conducted for biosorption and the optimum conditions were 1g/L biomass, 4 hrs contact time, pH-2 and 2.893 micro Siemens/cm (mS/cm) of electrical conductivity. The chromium biosorption was strictly pH dependent with a maximum Cr removal of 63.2 mg/L at pH 2. Highest Cr removal at a concentration of 81.3 mg/L was observed at Electrical conductivity (EC) value of 2.893 mS/cm. A comparison of Langmuir and Freundlich isotherm models revealed that Freundlich isotherm model fitted the

Download English Version:

<https://daneshyari.com/en/article/5478757>

Download Persian Version:

<https://daneshyari.com/article/5478757>

[Daneshyari.com](https://daneshyari.com)