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Sorption characteristics of heavy metal ions by aquatic weed

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ABSTRACT

Heavy metals are one of the prominent sources of pollution in industrial wastewater and excessive presence of these metals is cause of severe health and environmental problems. The prevailing purification technologies used to remove these contaminants are so costly and sometimes non-eco-friendly. Several aquatic weeds were found to be capable of sorbing these metal ions from their solution and could be one of the cheapest sources for the treatment of wastewater. The present study deals with the characteristics of this sorption process for chromium, lead, zinc and iron with macrophyte *Eichhornia crassipes* and data obtained is mathematically modeled with the help of statistical analysis. All the modeling results and statistical analysis is found to be very much concurrent to expectation. *Eichhornia crassipes* is found to have great efficiency in removing metal ions from the sample and could be used as one of the best sources of water treatment for metal ions.

Keywords: Sorption; Aquatic weed; *Eichhornia crassipes*; Heavy metals; Mathematical modeling; Statistical analysis; SSE; R^2; RMSE

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