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## Removal of Nickel from Wastewater using Natural Adsorbents through Regression Model

C.G. Hemamalini <sup>(1)\*</sup> R. Shruthi Meena <sup>(2)</sup> M. Sreevelan <sup>(3)</sup> G. Saravanan <sup>(4)</sup> R. W. Wilsha <sup>(5)</sup>

<sup>(1)</sup> Professor, Department of Civil Engineering, Easwari Engineering College, Chennai, India.

<sup>(2)</sup> Final Year Under Graduate students, Department of Civil Engineering, Easwari Engineering College, Chennai, India.

<sup>(3)</sup> Final Year Under Graduate students, Department of Civil Engineering, Easwari Engineering College, Chennai, India.

<sup>(4)</sup> Final Year Under Graduate students, Department of Civil Engineering, Easwari Engineering College, Chennai, India.

<sup>(5)</sup> Final Year Under Graduate students, Department of Civil Engineering, Easwari Engineering College, Chennai, India.

\* Corresponding author

### Abstract

Nickel is one of the heavy metals present in industrial effluents from metal plating, electroplating, fertilizers, pesticide and battery industries which are contaminating land and water due to its disposal. The methods which are used to remove nickel from waste water are adsorption, ion exchange, coagulation / flocculation, membrane separation, electro coagulation, floatation and biological methods. In this study, adsorption method has been used for treating the industrial waste water. The naturally and locally available materials are used as adsorbents to remove nickel. The objective of the paper is to study the removal efficiency of natural materials such as orange peel powder, neem leaf ash, saw dust and coffee husk on synthetic nickel solution. The performance of these adsorbents have been analyzed through batch test and column study. The results of important parameters such as adsorption capacity, concentration of nickel, adsorbent dosage and contact time were discussed using regression analysis.

### Author Keywords

Nickel, orange peel powder, neem leaf ash, saw dust, coffee husk, batch test, column study, regression analysis

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