**Enhancement of copper cementation using ceramic suspended solids under single phase flow**

Abstract Rate of Cu++ removal from waste solution by cementation on zinc rod was studied under single phase flow. Suspended ceramic particles were used to enhance the rate of cementation of Cu++. The cementations process was studied under different conditions of superficial liquid velocities and different ratios of suspended solid to liquid (X). It was found that the rate of Cu++ removal increases with increasing superficial liquid velocity and increase in liquid to solid ratio. The dependence of cementation rate on both superficial liquid velocity and the concentration of ceramic suspended solids confirmed that the diffusion controlled nature of the reaction. Mass transfer study of the process has revealed that the data can be represented by the following equation: 

\[ J = 2.76 \, Re^{0.521} \, X^{0.5233} \]

where 761 < Re < 1726, 0.0087 < X < 0.0218 and Sc = 1526. Keywords: Wastewater; Cementation; Copper removal; Mass transfer; Single phase flow; Suspended solids

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**References:**


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