

## STUDIES ON MASS TRANSFER ON THE INNER WALL OF AN ANNULAR CONDUITS WITH COAXIALLY PLACED ENTRY REGION SPIRAL COIL AS TURBULENCE PROMOTERS

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### Abstract

Mass transfer studies were conducted at the inner wall of test section with entry region coil as turbulence promoters. Ferri-ferro cyanide redox system was chosen as system of the study. The study covered wide range of parameters like Effect of Pitch, length, diameter of the coil, diameter of the coil wire and diameter of the annular rod on mass transfer were studied. A model was developed for mass transfer data. A study is also made on the energy efficiency of the promoter. The developed model is presented here under.

$$\bar{g} h = 14.193 R_{em}^{+} \left( \frac{P_c}{d_e} \right)^{0.00438} \left( \frac{D_c}{d_e} \right)^{0.00779} \left( \frac{D_w}{d_e} \right)^{-0.0561} \left( \frac{L_c}{d_e} \right)^{1.412}$$

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