

传递现象

活性炭/水浆料中CO₂吸收过程的增强

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摘要 针对分散相微粒增强难溶气体的吸收过程,提出了一个一维非稳态非均相传质的二区模型,并进行了理论求解。根据表面更新理论,得到了增强因子的数学表达式。利用恒温反应釜,对活性炭/水浆料中发生的CO₂吸收过程进行了实验研究,测定了不同颗粒浓度及转速下的增强因子。实验结果与模型预测值吻合良好,表明本文模型具有很高的预测精度。

关键词 [吸收](#); [增强因子](#); [传质](#); [活性炭微粒](#)

分类号

Absorption enhancement of carbon dioxide in aqueous activated carbon slurries

Abstract

A one-dimensional unstable heterogeneous mass transfer model was proposed and solved theoretically for the absorption enhancement of a sparingly soluble gas by dispersed micro particles. The enhancement factor was derived based on the surface renewal theory. The absorption of carbon dioxide into water with the added micro activated carbon particles was investigated experimentally in a thermostatic reactor, and the enhancement factors were measured at different solids loadings and stirrer speeds. The experimental data agreed well with the model predictions, and showed that the present model had high prediction accuracy.

Key words [absorption](#) [enhancement factor](#) [mass transfer](#) [micro activated carbon particles](#)

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