Volume 7

Heat Transfer between Immersed Horizontal Tubes and Aerated Vibrated Fluidized Beds

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摘要 Heat transfer coefficients between an immersed horizontal tube and an aerated vibrated

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关键词 <u>Vibration heat transfer</u> <u>vibration fluidization</u> <u>heat transfer</u> <u>vibration</u> <u>fluidization</u> 分类号

DOI:

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Received 1998–1–6 Revised Online Accepted 1998–11–10 **Abstract** Heat transfer coefficients between an immersed horizontal tube and an aerated vibrated fluidized bed are measured. There is a maximum value in the h-G experimental curve. The heat transfer coefficient increases with decrease in particle diameter in the fully fluidized region. The particle density has less effect on the heat transfer coefficients. High amplitude and low frequency, or low amplitude and high frequency are favorable to heat transfer. Exceedingly high gas velocity is unfavorable to the surface-bed heat transfer. A model based on the "pocket" theory was proposed for predicting the surface-to-bed heat transfer coefficients in fully fluidized region. The predictions from the model were compared with observed data. The reasonable fit suggests the adequacy of the model.

Key words Vibration heat transfer; vibration fluidization; heat transfer; vibration; fluidization

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- 李川娜
- <u>陈匡民</u>