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Condensation character of a stratified flow inside a horizontal tube

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ABSTRACT

A series of experiments was performed to investigate the steam condensation phenomenon of stratified flow inside horizontal tube in vacuum condition. Using segmented cooling mode to maintain a near-constant temperature of cooling water. Based on the experimental results, this paper analyses the influence of temperature difference and the inlet velocity of vapor on both heat flux density ratio and heat transfer coefficient ratio between water side and vapor side. It is found that inlet velocity and condensate quantity has obvious effect on both heat flux density ratio and heat transfer coefficient ratio.

Keywords: Heat flux density ratio; Heat transfer coefficient ratio; Stratified flow; Condensation; Desalination

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