

Review on Visualization Results of DNB and Relations with Hypertheses of DNB Models

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Abstract

This paper provides the review of the previous results of visual experiments on DNB phenomena and the considerations of relations with hypertheses of DNB models. Hypotheses of DNB models with good prediction performance in forced convective boiling and Visualization results in various experiments of some major authors are summarized. And then, the relations with the hypertheses and the visual results are discussed. Two major models are competitive and one additional model is selected for good relation. Theses models have not be tightly linked to any visual results till now. However, recent some advanced visualizations capable to give a clue to the closely relation between the hypothesis and the results have reported.

A Nucleate Boiling Limitation Model for the Prediction of Pool Boiling CHF

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Abstract

A new nucleate boiling limitation model which can predict both the heat transfer in the nucleate boiling region and CHF is proposed for pool boiling on a horizontal surface. This model is developed based on the results of direct observation on the physical boiling phenomena. Verification of the performance of prediction is accomplished by comparing with the existing experimental data. Verification results show that the present model incorporates the contact angle effect on CHF, and agrees well with experimental data.