Thermodynamic Parameters of Vapour Bubble Growth by Image Analysis

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Using high speed video camera and numerical processing of the digital images transient description of the geometry and the interface velocity for vapour bubble growing at the heated surface is achieved. Particle Image Velocimetry and Thermometry are applied to obtain details about velocity and temperature in the surrounding flow field. The whole bubble growth from time inception to lift-off from the wall and bubble collapse can be observed. Time history of the geometric parameters of the bubble such as equivalent diameter, base diameter and height of bubble center have been evaluated and compared with theoretical prediction obtained by a simple mathematical model.

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