

Chapter 3

Conclusion and Further Research

Knowledge about CHF is very important to deal with high heat flux for nuclear engineering and electronic equipment. Larger diameter and length of the channels are used for nuclear engineering because of large mass inventory. However, in recent times, the microchannels have been developed and the mass inventory inside the channels is usually very small. Single channel is seldom used, whereas multiple numbers of parallel channels are more often used. CHF increases with mass flux, channel hydraulic diameter for saturated boiling (and inversely for subcooled boiling), length-to-diameter ratio of the channel, saturation temperature and degree of subcooling at channel inlet. Modern machining techniques are now-a-days being routinely used for the fabrication of microchannels. Research with microchannels are using high speed photography with relatively high magnification to capture the details of flow regimes, bubble growth and measuring liquid film thickness. However, widely applicable correlations are needed to predict data accurately. The microchannel heat transport phenomena are still far from being clearly understood. More accurate measuring techniques are necessary. More and more finer models are necessary to predict CHF accurately.