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Review on two-phase flow boiling in oblique fined microchannel heat sink with different channel cross section

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Abstract: The research era and development on two-phase flow boiling will give a tremendous choice in various application fields. In spite of this progression, there arise disarray forms under the different streams of the cross-section, oblique fins and types of fluid being used. This study deals on various cross-sections such as rectangular, square, triangle and with a variable aspect ratio of the microchannel. The paper focuses on the behavior of different types of fluid used in a microchannel with various thermo-physical properties. The formulated growth in the fields of flow boiling from the introductory to the modern changes is enumerated in both the ways of experimental as well as numerical. In addition to that, this paper concerns the bubble growth rate and heat transfer characteristics of flow boiling experiments. Numerical solutions and their correlations with their experimental data are also summarised. The stimulated improvements in various aspects of microchannel era in experimental and theoretical data are tabulated. Based on the consolidated database a new model approach on two-phase flow boiling has resulted out.

Keywords: Microchannel, Flow boiling, Oblique fins, Heat transfer rate.

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