Determination of Liquid Film Thickness in Slug and Annular Flow for Improvement of Flow Boiling Heat Transfer Models

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Objective
Refine current regime based microchannel boiling heat transfer models by empirically modeling liquid film thickness in slug and annular flow.

Approach
- Develop a measurement technique capable of determining film thickness
- Construct transparent microchannel test section allowing optical access to flow
- Experimentally model film thickness in slug and annular flow regimes

Impact
- Refine existing regime based microchannel boiling heat transfer models
- Improve design tools for flow boiling heat transfer in microchannel heat sinks

Selected Publications