

# Accepted Manuscript

Title: Visualization of flow distribution in rectangular and triangular header geometries

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PII: S0140-7007(17)30054-3

DOI: <http://dx.doi.org/doi: 10.1016/j.ijrefrig.2017.02.002>

Reference: IJIR 3546

To appear in: *International Journal of Refrigeration*

Received date: 5-5-2016

Revised date: 3-2-2017

Accepted date: 4-2-2017

Please cite this article as: Allison J. Mahvi, Srinivas Garimella, Visualization of flow distribution in rectangular and triangular header geometries, *International Journal of Refrigeration* (2017), <http://dx.doi.org/doi: 10.1016/j.ijrefrig.2017.02.002>.

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# Visualization of flow distribution in rectangular and triangular header geometries

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## Highlights

- Experimentally quantifies distribution of air-water mixtures in heat exchanger headers
- Categorizes flow regimes in headers and presents a flow regime map
- Discusses effects of inlet mass flux and quality on distribution
- Compares distribution characteristics in rectangular and triangular headers
- Discusses average and local pressure drops in headers

## ABSTRACT

The high heat transfer coefficients and compact sizes of minichannel heat exchangers have become increasingly critical to the development of efficient, inexpensive, and compact thermal systems. In many cases, however, these systems do not work as well as models predict because of unanticipated flow maldistribution. This problem can be mitigated with effective header designs. The present study quantifies the distribution of air-water mixture flows in header geometries relevant to heat exchangers that are important in refrigeration and chemical

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