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Thermal Engineering Journal Announces
Groundbreaking Article on Saturated Flow Boiling

Nanoscale and Microscale Thermophysical Engineering, a leading journal covering the rapidly emerging field of microscale energy conversion, is pleased to announce a landmark article on saturated flow boiling in small channels. The article (Volume 12, Issue 3) is available for free viewing on the journal's website, **www.tandf.co.uk/15567265**.

The authors, Stefan S. Bertsch, Eckhard A. Groll, and Suresh V. Garimella, review the rapidly growing body of literature on the topic of flow boiling in minichannels and microchannels. While there is some consensus in previous investigations on the behavior of heat transfer coefficient under differing flow regimes and heat flux conditions, conflicting trends have been observed particularly relating to the influence of vapor quality.

"This article offers a critical analysis of such recent studies that explore the influence of vapor quality in determining the heat transfer characteristics," says Dr. Suresh Garimella, Director of the Cooling Technologies Research Center at Perdue University. "We have also quantitatively assessed a wide range of available correlations for flow boiling by comparing them against ten independent data sets from the published literature covering a range of hydraulic diameters."

As supplemental information related to the article, the journal's website also offers a complete list of all the correlations used in this work (including some in which errata in the original publications have been corrected), including definitions, geometries and ranges of applicability. In addition, a spreadsheet of the database of the published results against which the correlations are compared is available. "We hope that these supplements add to the convenience of the reader in repeating such comparative exercises," says Dr. Garimella.

Nanoscale and Microscale Thermophysical Engineering is a quarterly, peer reviewed journal covering the basic science and engineering of nanoscale and microscale energy conversion, transport, storage, mass transport, and reactions. In addition, the journal addresses their integration and uses in devices and systems in the fields of medicine,

transportation, energy, environment, and information. Papers range from historical accounts to future directions in this rapidly emerging field and cover such topics as:

Photon, phonon, and electron energy transport and interactions in solids

Molecular-level energy storage, conversion, and transport phenomena

Processing of nanostructured materials including composites

Microfluidic/nanofluidic devices and systems

Multi length and time scale modeling and computations

"This article presents a truly comprehensive review of the literature in this field, and will serve as a key reference for those of us working in two-phase microflows. The applications range from microscale heat exchangers to other devices in which two-phase flow is important including fuel cells," says Dr. Kenneth Goodson, Editor-in-Chief of the journal and Director of the Stanford Microscale Heat Transfer Laboratory. "The editors are particularly delighted to bring this article to the research community, which helps us advance one of our goals of providing key reviews of topics in micro and nanoscale transport phenomena."

Nanoscale and Microscale Thermophysical Engineering, published quarterly, is available at an individual print subscription rate of $298/£179/€238, an institutional print and online subscription rate of $848/£513/€678, and an institutional online-only subscription rate of $805/£487/€644.

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