

## Accepted Manuscript

The characteristics of premature and stable critical heat flux for downward flow boiling at low pressure in a narrow rectangular channel

Juhyung Lee, Daeseong Jo, Heetaek Chae, Soon Heung Chang, Yong Hoon Jeong, Jae Jun Jeong

PII: S0894-1777(15)00192-2

DOI: <http://dx.doi.org/10.1016/j.expthermflusci.2015.07.015>

Reference: ETF 8525

To appear in: *Experimental Thermal and Fluid Science*

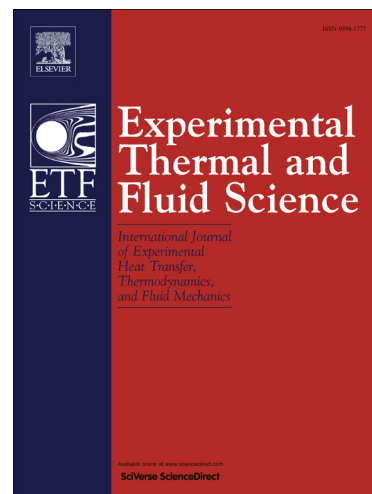
Received Date: 1 April 2015

Revised Date: 17 July 2015

Accepted Date: 17 July 2015

Please cite this article as: J. Lee, D. Jo, H. Chae, S.H. Chang, Y.H. Jeong, J.J. Jeong, The characteristics of premature and stable critical heat flux for downward flow boiling at low pressure in a narrow rectangular channel, *Experimental Thermal and Fluid Science* (2015), doi: <http://dx.doi.org/10.1016/j.expthermflusci.2015.07.015>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



## The characteristics of premature and stable critical heat flux for downward flow boiling at low pressure in a narrow rectangular channel

Juhyung Lee<sup>a</sup>, Daeseong Jo<sup>b</sup>, Heetaek Chae<sup>c</sup>, Soon Heung Chang<sup>a, d</sup>, Yong Hoon Jeong<sup>\* a</sup>, Jae Jun Jeong<sup>c</sup>

<sup>a</sup> Korea Advanced Institute of Science and Technology, 373-1 Guseong-dong, Yuseong-gu, Daejeon 305-701, Republic of Korea

<sup>b</sup> Kyungpook National University, 80 Daehak-ro, Buk-gu, Daegu 702-701, Republic of Korea

<sup>c</sup> Korea Atomic Energy Research Institute, 1045 Daeduk-Daero, Dukjin-Dong, Yuseong-Gu, Daejeon 305-353, Republic of Korea

<sup>d</sup> Handong Global University, Heunghae-eup, Buk-gu, Pohang, Gyeongbuk 791-708, Republic of Korea

<sup>e</sup> Pusan National University, 63-gil, Busandaehak-ro, Geumjeong-gu, Busan 607-735, Republic of Korea

\* Corresponding author. Tel.: +82 42 350 3826 (office); fax: +82 42 350 3810.

E-mail addresses: leejh9841@kaist.ac.kr (J. Lee), djo@knu.ac.kr (D. Jo), htchae@kaeri.re.kr (H.T. Chae), shchang@kaist.ac.kr (S.H. Chang), jeongyh@kaist.ac.kr (Y.H. Jeong), jjjeong@pusan.ac.kr (J.J. Jeong)

### Abstract

Flow instability and critical heat flux (CHF) especially for downward flow of water in a vertical narrow rectangular channel heated from both sides were experimentally investigated. The gap, width, heated width, and heated length of the channel were 2.35, 40, 30, and 350 mm, respectively. The flow boiling was developed as the wall heat flux was increased for the imposed mass flux of 500 and 1,000 kg m<sup>-2</sup> s<sup>-1</sup> for high inlet subcooling (52 -74 K)

Download English Version:

<https://daneshyari.com/en/article/7052121>

Download Persian Version:

<https://daneshyari.com/article/7052121>

[Daneshyari.com](https://daneshyari.com)