



Volume 35, issue 5, July 2011

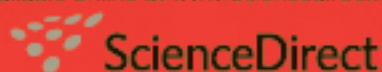
ISSN 0894-1777



Experimental Thermal and Fluid Science

*International Journal
of Experimental
Heat Transfer,
Thermodynamics,
and Fluid Mechanics*

Available online at www.sciencedirect.com



Special Issue:
7th ECT-International Conference on
Boiling Heat Transfer – ICBH11-2009
Edited by: Julio César Passos

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Special Issue

7TH ECI-INTERNATIONAL CONFERENCE ON BOILING HEAT TRANSFER – ICBHT-2009

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Experimental Thermal and Fluid Science

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Preface

Editorial on selected papers from the ICBHT-2009

This special issue of *Experimental Thermal and Fluid Science* contains 12 selected papers presented at the 7th ECI-International Conference on Boiling Heat Transfer – ICBHT-2009 held in Florianópolis, the state capital of Santa Catarina, in the south of Brazil, at the beach resort Costão do Santinho, from May 03–07, 2009. This conference was organized by the Department of Mechanical Engineering of the Federal University of Santa Catarina, under the auspices of the *Brazilian Society of Mechanical Sciences and Engineering (ABCM)* and the *American Society of Mechanical Engineering (ASME)*. These papers are representative of the main topics presented in 18 sessions and 13 keynote lectures and were accepted after being submitted to the peer review process of the journal, which included at least two independent reviewers. As in the previous editions of the conference, the papers focused on the fundamentals and processes associated with boiling topics related to traditional and emerging applications.

These papers can be divided into three groups: the first with six papers deals with pool boiling, the second with five papers relates to flow boiling and the third with one paper addresses the quenching problem.

The first group is opened by a study on heterogeneous nucleation of highly wetting fluids (pentane and butane) on very smooth surfaces; the second paper is on the onset nucleate boiling of propane on surface finishes with artificial sites on single horizontal tubes of steel and copper; the third paper investigates bubble formation on a single artificial nucleation site on a polished copper surface with and without the application of an electrical field; the fourth paper investigates the pool boiling heat transfer and critical heat flux of saturated HFE-7100 on a confined horizontal smooth copper surface with gaps of 0.5–3.5 mm; the fifth and sixth papers address nucleate boiling under microgravity conditions, the former using FC72 with and without the presence of an electrical field and the latter investigating HFE-7000 pool boiling under microgravity and terrestrial conditions.

The second group is opened by an investigation on the aspect ratio on subcooled flow boiling of Forane 365 HX in two single microchannels of the same hydraulic diameter; the second paper analyzes the flow boiling of water in 10 parallel microchannels with diverging cross sections and includes the effect of artificial nucleation sites; the third paper investigates the effect of surface wettability on the water, flow boiling, heat transfer coefficient and two-phase pressure drop inside single microchannels with a hydraulic diameter close to 0.5 mm; the fourth paper is an analysis of the heat transfer and flow dynamics in narrow-gap coolers showing the effects of the shear-driven water films on the critical heat flux, the fifth paper presents an investigation of R-134a flow boiling heat transfer and pressure drop in one smooth and two commercial microfinned tubes of 9.52 mm external diameter, as used in the refrigeration industry.

The last paper reports a study on the effect of oil-in-water emulsion jet impingements on a preheated metal disk.

Finally, I would like to thank the Elsevier editors and the editors-in-chief of the ETFS, Dr. Celata and Professor Kennedy, for providing the opportunity to publish this special issue with selected papers from the Boiling 2009 Conference in Florianópolis. Gratitude is also due to the reviewers of these papers.

The next ECI-ICBHT, Boiling-2012, will be held in Switzerland, during June 2012, chaired by Professor John R. Thome, from Ecole Polytechnique Fédérale de Lausanne – EPFL.

Guest Editor and chair of the ICBHT-2009

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