CONTENTS

Foreword
Reviewers
Noncondensable Gas Effects in Nuclear Reactor Systems Stephen M. Bajorek, Chair
The Implementation of Non-Condensable Mass Equations Including a Dissolved Gas Source Term in WCOBRA/TRAC David L. Aumiller and John H. Mahaffy 1
The Effect of Noncondensables on Condensation in Reactor LOCA Transients M.Y. Young and S.M. Bajorek . 6
Film Waviness Effect on the Condensation Mass Transfer of Turbulent Pipe Flow in the Presence of Noncondensable Gas S.Z. Kuhn, P.F. Peterson and V.F. Schrock
Thermal Modeling in Mixed Waste Management Y.S. (Tom) Tang, Chair; Cetin Unal, Co-Chair
Combustion Modeling in Waste TanksC. Müller. R.K. Fuiita. C. Unal and J.R. Travis.21
Potential Hydraulic Modelling Errors Associated With Rheological Data Extrapolation in Laminar Flow Martin A. Shadday, Jr
Thermal Modeling of Core Sampling in Flammable Gas Waste Tanks: Part I - Push-Mode Sampling C. Unal, K. Stroh and K.O. Pasamehmetoglu
Thermal Modeling of Core Sampling in Flammable Gas Waste Tanks: Part II - Rotary-Mode Sampling C. Unal, D. Poston, K.S. Witwer and K.O. Pasamehmetoglu
Containment Heat Transfer W. Choe, Chair; Y.A. Hassan, Co-Chair
Use of CONTAIN Code to Assess a Vented, Multi-Condenser Pool Confinement System Evaldas Zvinys and Kazys Aimenas
Deterministic and Probabilistic Assessments of Ex-Vessel Molten Corium Thermal Attack on Mark-1 Drywell Steel Liner Yehia F. Khalil
r.c

Application of Gothic 3.4e Distributed-Parameter Modeling Feature to Hydrogen Mixing Test HDR E Kevin Mun and Lothar Wolf	211.1
Large-Scale Fire Experiments in the HDR-Containment	
Lothar T. Wolf and Jason E. Floyd	.69
Comparison of Measured Data from the HDR-T51 Gas Fire Tests to Predictions Made by CFAST Jason E. Floyd and Lothar T. Wolf	80
Cooling of High Heat Flux Systems Dae H. Cho, Chair; Michael L. Corradini, Co-Chair	
An Experimental Investigation of Single-Phase Forced Convection in Microchannels	
T.M. Adams, S.I. Abdel-Khalik, S.M. Jeter and Z.H. Qureshi	.87
High-Heat-Flux Nucleate Boiling on the Outer Surface of a Heated Hemispherical Vessel F.B. Cheung, K.H. Haddad, Y.C. Liu and S.W. Shiah	.95
Role of Inhomogenity and Capillary Effects in Debris Bed Coolability Problem V.V. Likhanskii, A.I. Loboiko and O.V. Khoruzjii	102
Evaluation of Condensation Modeling Based on Heat/Mass Transfer Analogy Mark H. Anderson. Luis E. Herranz and Michael Corradini	
Two-Phase Flow and Heat Transfer Phenomena R. Dowlati, Chair; M. Kawaji, Co-Chair	
A Study of Forces Acting on a Single Bubble in Subcooled Flow Boiling at Low Pressure V. Prodanovic, D. Fraser and M. Salcudean	114
A Computational Model for Swirl Vane Phase Separators	
Serhat Lider, John H. Mahaffy, Anthony J. Baratta and Gordon E. Robinson	.122
Liquid Pool Heat Transfer in Small Cylindrical Enclosures With Uniform Wall Heating Mohamed S. El-Genk and Hamed H. Saber	131
Numerical Study of Hastandy Warry Lizzid Film Floring Deserves 11 (1111)	
Yutaka Abe and Masahiro Kawaji	.138
Hydrodynamic and Heat-Transfer Characteristics of a Magnetically Stabilized Fluidized Bed of Ferromagnetic Particles	
NC Navena and VI, Ganzha	146

-2

Fundamentals of Heat Pipes in Aerospace Applications Scott Thomas, Chair; Jay M. Ochterbeck, Co-Chair

Structural Optimization of Axially Grooved Flat Minature Heat Pipes M. Gao, Y. Cao. J.E. Beam and B. Donovan

A Study of the Fundamental Operation of a Capillary Driven Heat Transfer Device in Microgravity Jeffrey S. Allen and Kevin P. Hallinan

Heat Transfer and Energy Conversion in Biological Systems Kyung A. Kang, Chair; Duane F. Bruley, Co-Chair

Use of IR Spectroscopy for Medical Diagnostics *M.L.G. Althouse and C.-I. Chang*

The Quantification of the 3-D Electromagnetic Power Absorption Rate Produced by the Microwave Antenna for Transurethral Prostatic Thermotherapy Using Heat Transfer Model Liang Zhu, Lisa X. Xu and Norbert Chencinski

The B-W-K Technique Applied to Problems of Hyperthermia *Kyung A. Kang and Duane F. Bruley*

Heat Transfer and Fluid Aspects in Heat Exchangers Michael M. Ohadi, Chair; David M. Pratt, Co-Chair

Evaluation of the Heat Transfer Coefficient in a Bank of Elliptic Tubes E. Salazar, J.J. González, A. López de Ramos, F. Pironti and D. González-Mendizabal

Experimental Determination of the Heat Transfer Coefficient in a Three-Phase Fluidized	
Cross Flow Tubes Bank	
Dosinda González-Mendizabal, Emma Sánchez, Juan Carlos Pérez and Filippo Pironti	191
An Overview of Basic Models on Frost Formation Phenomenon and Recent Progress on the Use of an Electric Field in Suppressing or Promoting Frost S. Mishra, A. Gidwani. M.M. Ohadi and S.V. Dessiatoun	
Sensible Heat Transfer Characteristics of Plate Fin-and-Tube Heat Exchangers Having 7-mm Tubes C.C. Wang, C.T. Chang and W.S. Lee	.21

Waste Heat Powered Ammonia Absorption Refrigeration System D.C. Erickson, R. Papar, G. Anand, S. Brueske and B. Brant

Process Heat Transfer Fernando J. Aguirre, Chair

Condensation of Organic Vapors on Teflon Coated Mild Steel R. Chandrasekharan and T. Venkatram	.221
Reflux Condensation of Pure Vapors With and Without a Noncondensable Gas Inside Plain and Enhanced Tubes <i>A.N. Abdelmessih. T.J. Rabas and C.B. Panchal</i>	.227
Mixture Effect in Boiling Salt Solutions Vishwas V. Wadekar. Peter D. Hills and Joachim Mattes	.233
Experimental and Analytical Study of Condensation of Ammonia-Water Mixtures C.B. Panchal, W.C. Kuru, F.C. Chen, N. Domingo and E.P. HuangFu	.239
Optimization of Plate Type Air Preheaters in Process Furnaces Petr Stehlik, Zdenek Jegla and Josef Kohoutek	245
Emerging Refrigeration Technologies Celia Herman, Chair; Omar Konio, Co-Chair	
New Approaches to Thermoelectric Cooling Effects in Magnetic Fields A. Migloiri, T.W. Darling, F. Freibert, S.A. Trugman, E. Moshopoulou and J.L. Sarrao	
A Thermoacoustic Pin Stack for Improved Efficiency Rodney J. Gibson, F. Scott Nessler and Robert M. Keolian	
Measurements and Empirical Model of Temperature Evolution in a Short Stack Ralph T. Muehleisen, Anthony A. Atchley, David D. Hebert and Arthur R. Salindong	
Numerical Simulation of Acoustically-Generated Temperature Gradients in Short Thermoacoustic Stacks: A Validation Study Aniruddha S. Worlikar, Omar M. Knio and Rupert Klein	
Transport Phenomena in Oscillatory Flows Celia Herman, Chair; Omar Knio, Co-Chair	
A Test Facility for Absorber Tube Bundle Enhancement Studies Bor-Bin Tsai and Horacio Perez-Blanco	
Pulsed Radial Jet Reattachment Nozzle Heat Transfer to a Flat Plate Jeffrey A. Castleberry and D.L. James	

Pulsatile Non-Newtonian Flow in a Converging-Diverging Tube Amodor M. Guzman, Nelson O. Moraga, Guillermo O. Munoz and Cristina H. Amon

Transport Phenomena in Multiphase Reactors and Contractors Carolyn Hyndman, Chair; Ayodeji A. Jeje, Co-Chair

Local and Instantaneous Heat Transfer Measurement in a Three-Phase Slurry Bubble Column H. Li and A. Prakash

Analysis of Reacting and Vaporizing Bitumen Droplets and Wet Coke Particles in a Fluidized Bed Reactor John D. Adjaye, Caroline L. Hyndman, Barry B. Pruden and Franco Berruti

Fouling Formation and Control in Heat Exchange Equipment C.B. Panchal, Chair; Joe W. Palen, Co-Chair

Case Studies in Data Reconciliation for Fouling Management D.I. Wilson, P.I. Condron and S.G. Garrett

Hydrothermal Stress Coefficient: A Novel Model for Predicting Heat Exchanger Fouling in Cooling Systems Douglas B. DeWitt-Dick, George F. Hays and Edward S. Beardwood

Effects of Ozonation on Fouling of Heat Exchangers Bang-Yenn Wu and S.H. Chan

The Effects of Velocity on Biocide Use for Biofilm Removal in Flowing Systems T. R. Bott and R. J. Taylor

An Experimental Study on Fouling Around Tubes Man Yeong Ha, Dae Rae Lee, Seung Phyo Ahn and Ho Dong Park.

High-Temperature Organic-Fluid Fouling Unit W. C. Kuru and C.B. Panchal

Field-Fouling Units for Refinery Experiments W.C. Kuru, C. B. Panchal, C.F. Liao, J. Palen and W.A. Ebert

Index

.345

.327