NURETH-12 SPECIAL ISSUE

1 Foreword: NURETH-12 Special Issue / Fan-Bill Cheung, Karen Vierow, Joy Rempe

TECHNICAL PAPERS

2 Geometric Effects of 45-deg Elbow in Horizontal Air-Water Bubbly Flow / Justin D. Talley, Seungjin Kim, Tangwen Guo, Gunol Kojasoy

13 Variable Property Effects on Vapor Condensation with a Noncondensable Gas / Yehong Liao, Karen Vierow

20 Interfacial Area Transport in Horizontal Bubbly Flow with 90-deg Elbow / Seungjin Kim, Kennard Callender, Gunol Kojasoy


46 CFD Modeling and Experiments of Insulation Debris Transport Phenomena in Water Flow / Eckhard Krepper, Gregory Cartland-Glover, Alexander Grahn, Frank-Peter Weiss, Sören Alt, Rainer Hampel, Wolfgang Kästner, André Seeliger

60 Validation of NEPTUNE_CFD Module with Data of a Plunging Water Jet Entering a Free Surface / M. C. Galassi, D. Bestion, C. Morel, J. Pouvreau, F. D’Auria

71 CFD Simulation of Phase Distribution in Adiabatic Upward Bubbly Flows Using Interfacial Area Transport Equation / Xia Wang, Xiaodong Sun

83 Numerical Analysis of Melting/Solidification Phenomena Using a Moving Boundary Analysis Method X-FEM / A. Uchibori, H. Ohshima

95 Simulation of Sulfur-Iodine Thermochemical Hydrogen Production Plant Coupled to High-Temperature Heat Source / Nicholas R. Brown, Seungmin Oh, Shripad T. Revankar, Karen Vierow, Salvador Rodriguez, Randall Cole, Jr., Randall Gauntt

107 RCCS Experiments and Validation for High-Temperature Gas-Cooled Reactor / Chang H. Oh, Goon C. Park, Cliff Davis

118 Thermal Influence on Steam Generator Heat Transfer Tube During Sodium-Water Reaction Accident of Sodium-Cooled Fast Reactor / Akira Yamaguchi, Takashi Takata, Hiroyuki Ohshima, Akikazu Kurihara

127 Thermal-Hydraulic Challenges in Fast Reactor Design / Neil E. Todreas

145 Transport Phenomena in Supercritical Fluids in Gen-IV Reactor Designs / Michael L. Corradini

157 Assessment of Steam Generator Tube Flaw Size and Leak Rate Models / Shripad T. Revankar, Jovica R. Riznic

169 Options Extending the Applicability of High-Temperature Irradiation-Resistant Thermocouples / Joy L. Rempe, Darrell L. Knudson, Keith G. Condie, John C. Crepeau, Joshua E. Daw, S. Curtis Wilkins

(Continued)
178 Optimal Gap Size for Downward Facing Boiling and Steam Venting in a Hemispherical Annular Channel / Shankar Narayanan, Fan-Bill Cheung, Lawrence Hochreiter

187 Thermal-Hydraulic Aspects of Progression to Severe Accidents in CANDU Reactors / John C. Luxat

211 Experimental Study on the Boiling Heat Removal at the Upper Surface of the Metallic Layer During Late-Phase Coolant Injection / Kyoung-Ho Kang, Rae-Joon Park, Sang-Baik Kim, Seong-Wan Hong

223 Dynamics and Preconditioning in a Single-Droplet Vapor Explosion / Roberta Concilio Hansson, Hyun Sun Park, Truc-Nam Dinh

235 Improvement of Core Modeling in ICARE/CATHARE: Application to the Calculation of a Six-Inch-Break LOCA Leading to a Severely Degraded Situation / Patrick Drai, Olivier Marchand, Patrick Chatelard, Florian Fichot, Joëlle Fleurot