

LIST OF CONTENTS

NUMBER 1

- Avram Bar-Cohen, Zvi Ruder and Peter Griffith** 1 Circumferential wall temperature variations in horizontal boiler tubes
- Y. L. Sinai** 13 A Charnock-based estimate of interfacial resistance and roughness for internal, fully-developed, stratified, two-phase horizontal flow
- K. Rietema and H. E. A. van den Akker** 21 On the momentum equations in dispersed two-phase systems
- P. V. Deo and D. R. Webb** 37 An experimental investigation of the effect of waves on vapour side heat and mass transfer in filmwise condensation inside a vertical tube
- El-Sayed D. I. El-Ayouty and J. B. Stepanek** 49 Use of microwaves in the measurements of frequencies and amplitudes in liquid hold-up fluctuations
- Martha Salcudean, Dionysius C. Groeneveld and Laurence Leung** 73 Effect of flow-obstruction geometry on pressure drops in horizontal air-water flow
- Brief Communications*
- M. Salcudean, J. H. Chun and D. C. Groeneveld** 87 Effect of flow obstructions on the flow pattern transitions in horizontal two-phase flow
- M. Salcudean, J. H. Chun and D. C. Groeneveld** 91 Effect of flow obstruction on void distribution in horizontal air-water flow
- Abolfazl Salehpour and Shi-Chune Yao** 97 Thermal hysteresis of forced convective boiling
- Book Reviews*
- J. W. Westwater** 101 Multiphase Science and Technology edited by G. F. Hewitt, J. M. Delhay and N. Zuber
- Shimon Haber** 102 Heat Exchangers edited by S. Kakac, A. E. Bergles and F. Mayinger

NUMBER 2

- Z. Zapryanov, A. K. Malhotra, N. Aderangi and D. T. Wasan** 105 Emulsion stability: an analysis of the effects of bulk and interfacial properties on film mobility and drainage rate
- S. Hasegawa, R. Echigo, K. Kanemaru, K. Ichimiya and M. Sanui** 131 Experimental study on forced convective heat transfer of flowing gaseous solid suspension at high temperature

- J. J. J. Chen** and
P. L. Spedding 147 An analysis of holdup in horizontal two-phase gas-liquid flow
- R. Bartolini,**
G. Guglielmini and
E. Nannei 161 Experimental study on nucleate boiling of water in vertical upflow and downflow
- Jan Iciek** 167 The hydrodynamics of a free, liquid jet and their influence on direct contact heat transfer—III. Direct contact heating of a cylindrical, free falling liquid jet
- A. S. Sangani** and
A. Acrivos 181 Creeping flow through cubic arrays of spherical bubbles
- P. O. Brunn** 187 Hydrodynamically induced cross stream migration of dissolved macromolecules (modelled as nonlinearly elastic dumbbells)
- Z. Adamczyk** and
T. G. M. van de Ven 203 Pathlines around freely rotating spheroids in simple shear flow
- K. Viswanathan** and
D. S. Rao 219 *Letter to the Editor*
Comments on bubble hold up in fluidized beds
- 221 *Announcements*
Fluidized Bed Technology. Stanford University, Department of Chemical Engineering, 8–12 August 1983
- 223 Heat Transfer with Phase Change. Two-Phase Short Course, Stanford University, Department of Chemical Engineering, 15–19 August 1983
- 225 On Performance Characteristics of Hydraulic Turbines and Pumps. Fluids Engineering Division—ASME, 1983 Winter Annual Meeting, Boston, 13–18 November 1983
- 226 Euromech Colloquium 176. The Mechanics of Gas-Liquid Flow Systems, Grenoble, France, 21–23 September 1983

NUMBER 3

- R. Shail** and **D. K. Gooden** 227 On the slow translation of a solid submerged in a fluid with a surfactant surface film—II
- R. N. Bernier** and
C. E. Brennen 251 Use of the electromagnetic flowmeter in a two-phase flow
- M. Filla, L. Massimilla** and
S. Vaccaro 259 Gas jets in fluidized beds: the influence of particle size, shape and density on gas and solids entrainment

- Z. Bilicki and J. Kestin** 269 Two-phase flow in a vertical pipe and the phenomenon of choking: homogeneous diffusion model—I. Homogeneous flow models
- G. A. Irons and J. S. Chang** 289 Particle fraction and velocity measurement in gas-powder streams by capacitance transducers
- Masud Mansuripur** 299 Orientational effect of the extensional flow field on solutions of rigid rodlike macromolecules—disappearance of the isotropic to nematic phase transition
- L. C. Singal, C. P. Sharma and H. K. Varma** 309 Pressure drop during forced convection boiling of binary refrigerant mixtures
- Graham B. Wallis and Barbara J. Hutchings** 325 Compressibility effects on waves in stratified two-phase flow
- Brief Communication*
- E. Rushton and G. A. Davies** 337 Settling of encapsulated droplets at low Reynolds numbers
- Announcements*
- 343 Fluidized Bed Technology. Stanford University, Department of Chemical Engineering, 8–12 August 1983
- 345 Heat Transfer with Phase Change. Two-Phase Short Course, Stanford University, Department of Chemical Engineering, 15–19 August 1983
- 347 Selected Topics in Two Phase Flow. A Series of Lectures, The University of Trondheim, Norwegian Institute of Technology, 5–6 May 1983
- NUMBER 4**
- D. Bharathan and G. B. Wallis** 349 Air-water countercurrent annular flow
- G. C. Gardner** 367 Flooded countercurrent two-phase flow in horizontal tubes and channels
- N. S. Wilkes, B. J. Azzopardi and C. P. Thompson** 383 Wave coalescence and entrainment in vertical annular two-phase flow
- Kenichi Hashizume** 399 Flow pattern, void fraction and pressure drop of refrigerant two-phase flow in a horizontal pipe—I. Experimental data
- E. Guevara and D. H. T. Gotham** 411 Entrainment in condensing annular flow
- J. J. E. Williams and R. I. Crane** 421 Particle collision rate in turbulent flow

Tülay A. Özbelge	437	An algorithm for hydrodynamics of turbulent upward flowing dilute gas-solids suspensions
		<i>Brief Communications</i>
Mark A. Vince and James R. Fincke	447	The relationship between density and void fraction measurement uncertainty in radiation densitometry
R. Krishna	451	Comments on "Verification of multicomponent mass transfer models for condensation inside a vertical tube"
D. R. Webb and R. G. Sardesai	455	Reply to comments on "Verification of multi-component mass transfer models for condensation inside a vertical tube"
		<i>Announcements</i>
	459	Fluidized Bed Technology. Stanford University, Department of Chemical Engineering, 8–12 August 1983
	461	Heat Transfer with Phase Change. Two-Phase Short Course, Stanford University, Department of Chemical Engineering, 15–19 August 1983

NUMBER 5

Parveen K. Jain and Ramendra P. Roy	463	Stochastic characteristics of vapor fraction and wall pressure fluctuations in boiling flows
R. Jackson and B. J. Davidson	491	An equation set for non-equilibrium two phase flow, and an analysis of some aspects of choking, acoustic propagation, and losses in low pressure wet steam
H. J. Richter	511	Separated two-phase flow model: application to critical two-phase flow
A. A. Borisov, B. E. Gelfand and E. I. Timofeev	531	Shock waves in liquids containing gas bubbles
A. Sharon, L. Chen and S. G. Bankoff	545	Convective boiling heat transfer in a concentric annular gap
S. Haber and R. Mauri	561	Boundary conditions for Darcy's flow through porous media
A. M. J. Davis	575	Force and torque formulae for a sphere moving in an axisymmetric Stokes flow with finite boundaries: asymmetric Stokeslets near a hole in a plane wall
		<i>Announcements</i>
	609	Fluidized Bed Technology. Stanford University, Department of Chemical Engineering, 8–12 August 1983

- 611 Heat Transfer with Phase Change. Two-Phase Short Course, Stanford University, Department of Chemical Engineering, 15–19 August 1983
- 613 Second International Symposium on Applications of Laser Anemometry to Fluid Mechanics, Lisbon, Portugal, 2–4 July 1984
- 615 New Patents

NUMBER 6

Abhaya K. Datye and
Robert Lemlich

- 627 Liquid distribution and electrical conductivity in foam

Yehuda Taitel and
Dvora Barnea

- 637 Counter current gas–liquid vertical flow, model for flow pattern and pressure drop

F. Avellan and
F. Resch

- 649 A scattering light probe for the measurement of oceanic air bubble sizes

D. Lübbsmeyer and
B. Leoni

- 665 Fluid-velocity measurements and flow-pattern identification by noise-analysis of light-beam signals

P. Andreussi and
B. J. Azzopardi

- 681 Droplet deposition and interchange in annular two-phase flow

Paolo Andreussi

- 697 Droplet transfer in two-phase annular flow

G. F. Hewitt

- 715 Two phase flow studies in the United Kingdom

Brief Communications

J. L. Steimke and
A. E. Dukler

- 751 Laser Doppler velocimeter measurements of aerosols in turbulent pipe flow

William G. Gray

- 755 Local volume averaging of multiphase systems using a non-constant averaging volume

Ismail Tosun and
Max S. Willis

- 763 Fluid velocity variation in filter cakes

Announcement

- 767 International Symposium on Two-Phase Annular and Dispersed Flows, University of Pisa, Pisa, Italy, 24–29 June 1984

- 769 New Patents

AUTHOR INDEX

- ACRIVOS, A. 181
ADAMCZYK, Z. 203
ADERANGI, N. 105
ANDREUSSI, P. 681, 697
AVELLAN, F. 649
AZZOPARDI, B. J. 383, 681
- BANKOFF, S. G. 545
BAR-COHEN, A. 1
BARNEA, D. 637
BARTOLINI, R. 161
BERNIER, R. N. 251
BHARATHAN, D. 349
BILICKI, Z. 269
BORISOV, A. A. 531
BRENNEN, C. E. 251
BRUNN, P. O. 187
- CHANG, J. S. 289
CHEN, J. J. J. 147
CHEN, L. 545
CHUN, J. H. 87, 91
CRANE, R. I. 421
- DAVIDSON, B. J. 491
DAVIES, G. A. 337
DAVIS, A. M. J. 575
DATYE, A. K. 627
DEO, P. V. 37
DUKLER, A. E. 751
- ECHIGO, R. 131
EL-AYOUTY, EL-SAYED D. I. 49
- FILLA, M. 259
FINCKE, J. R. 447
- GARDNER, G. C. 367
GELFAND, B. E. 531
GOODEN, D. K. 227
GOTHAM, D. H. T. 411
- GRAY, W. G. 755
GRIFFITH, P. 1
GROENEVELD, D. C. 73, 87, 91
GUEVARA, E. 411
GUGLIELMINI, G. 161
- HABER, S. 102, 561
HASEGAWA, S. 131
HASHIZUME, K. 399
HEWITT, G. F. 715
HUTCHINGS, B. J. 325
- ICHIMIYA, K. 131
ICIEK, J. 167
IRONS, G. A. 289
- JACKSON, R. 491
JAIN, P. K. 463
- KANEMARU, K. 131
KESTIN, J. 269
KRISHNA, R. 451
- LEMLICH, R. 627
LEONI, B. 665
LEUNG, L. 73
LÜBBESMEYER, D. 665
- MALHOTRA, A. K. 105
MANSURIPUR, M. 299
MASSILLA, L. 259
MAURI, R. 561
- NANNEI, E. 161
- ÖZBELGE, T. A. 437
- RAO, D. S. 219
RESCH, F. 649
RICHTER, H. J. 511
RIETEMA, K. 21
- ROY, R. P. 463
RUDER, Z. 1
RUSHTON, E. 337
- SALCUDEAN, M. 73, 87, 91
SALEHPOUR, A. 97
SANGANI, A. S. 181
SANUI, M. 131
SARDESAI, R. G. 455
SHAIL, R. 227
SHARMA, C. P. 309
SHARON, A. 545
SINAI, Y. L. 13
SINGAL, L. C. 309
SPEDDING, P. L. 147
STEIMKE, J. L. 751
STEPANEK, J. B. 49
- TAITEL, Y. 637
THOMPSON, C. P. 383
TIMOFEEV, E. I. 531
TOSUN, I. 763
- VACCARO, S. 259
VAN DEN AKKER, H. E. A. 21
VAN DE VEN, T. G. M. 203
VARMA, H. K. 309
VINCE, M. A. 447
VISWANATHAN, K. 219
- WALLIS, G. B. 325, 349
WASAN, D. T. 105
WEBB, D. R. 37, 455
WESTWATER, J. W. 101
WILKES, N. S. 383
WILLIAMS, J. J. E. 421
WILLIS, M. S. 763
- YAO, S.-C. 97
- ZAPRYANOV, Z. 105