

Index to Volume 11, 1990

Author/Title Index

- Agrawal, A. K. and Sengupta, S.: Laminar flow and heat transfer in a finned tube annulus, 54
- Aihara, T. *See* Maruyama, S.
- Astill, K. N. *See* Molki, M.
- Aston, J. G. L. *See* Barclay, W. H.
- Barclay, W. H. and Aston, J. G. L.: Influence of vent positions on smoke clearance from a room, 362
- Bejan, A., Zhang, Z. and Jany, P.: The horizontal intrusion layer of melt in a saturated porous medium, 284
- Bejan, A. *See* Lage, J. L.
- Boysan, F. *See* Weber, R.
- Calvert, J. R.: Pressure drop for foam flow through pipes, 236
- Campo, A.: Development of the thermal boundary layer at the inlet of a circular pipe and comparison with L  v  que solution, 60
- Campo, A. *See* Salazar, A. J.
- Campo, A. *See* Schuler, C.
- Chan, W. K.: Correlation between cavitation type and cavitation erosion in centrifugal pumps, 269
- Char, M. I., Chen, C. K. and Cleaver, J. W.: Conjugate forced convection heat transfer from a continuous, moving flat sheet, 257
- Chen, C. H. *See* Chen, C. K.
- Chen, C. K. and Chen, C. H.: Nonuniform porosity and non-Darcian effects on conjugate mixed convection heat transfer from a plate fin in porous media, 65
- Chen, C. K. *See* Char, M. I.
- Chen, M. S. and Jones, B. W.: Condensation by heterogeneous nucleation in a thermal boundary layer, 290
- Chiu, C. P. and Wu, T. S.: Numerical study of turbulent in-cylinder flow during motoring utilizing a general curvilinear coordinate system, 303
- Chiu, P. C. and Fung, E. H. K.: Flow-forced dynamics of a triple heat exchanger—Part I: Formulation of mathematical model, 10
- Flow-forced dynamics of a triple heat exchanger—Part II: Experimentation and results, 17
- Cho, H. W. and Hyun, J. M.: Numerical solutions of pulsating flow and heat transfer characteristics in a pipe, 321
- Choi, B. S. *See* Hyun, J. M.
- Cleaver, J. W. *See* Char, M. I.
- Crane, R. I. *See* Leoutsakos, G.
- Daniels, P. G.: Minimum heat transfer by laminar natural convection across a laterally heated vertical slot, 371
- Date, A. W. and Saha, S. K.: Numerical prediction of laminar flow and heat transfer characteristics in a tube fitted with regularly spaced twisted-tape elements, 346
- Ebinuma, C. D. *See* Nakayama, A.
- El-Dujaily, M. J. and Mobbs, F. R.: The effect of end walls on subcritical flow between concentric and eccentric rotating cylinders, 72
- Fox, T. A.: Flow visualization at the center of a cross composed of tubes, 160
- Fung, E. H. K. *See* Chiu, P. C.
- Ghorashi, G. *See* Wangskarn, P.
- Gorla, R. S. R. *See* Wangskarn, P.
- Guezennec, Y. G. *See* Trigui, N.
- Haynes, B. D. *See* Parang, M.
- Ho, C. J. and Lin, Y. H.: On simulation of transient thermal convection of two-fluid layers in a horizontal circular enclosure, 355
- Huang, C. H. and   zi  k, M. N.: A direct integration approach for simultaneously estimating spatially varying thermal conductivity and heat capacity, 262
- Humphrey, J. A. C.: Fundamentals of fluid motion in erosion by solid particle impact (Review), 170
- Hyun, J. M. and Choi, B. S.: Transient natural convection in a parallelogram-shaped enclosure, 129
- Hyun, J. M. *See* Cho, H. W.
- Jany, P. *See* Bejan, A.
- Jones, B. W. *See* Chen, M. S.
- Kazmierczak, M. and Poulidakos, D.: Transient double diffusion in a stably stratified fluid layer heated from below, 30
- Kim, S. J. *See* Vafai, K.
- Kim, S. S. *See* Yoa, S. J.
- Kim, W. S. and   zi  k, M. N.: Conjugated laminar forced convection in ducts with periodic variation of inlet temperature, 311
- Lage, J. L. and Bejan, A.: Numerical study of forced convection near a surface covered with hair, 242
- Leal, E. *See* Molki, M.
- Lee, J. S. *See* Yoa, S. J.
- Leoutsakos, G. and Crane, R. I.: Three-dimensional boundary layer transition on a concave surface, 2
- Ligrani, P. M. and Schwartz, G. E.: Control of embedded longitudinal vortices using a wall jet, 274
- Lin, Y. H. *See* Ho, C. J.
- Liu, C. Y. *See* Tan, J. O.
- Low, H. G. *See* Tso, C. P.
- Lupo, M. *See* Pozzi, A.
- Maruyama, S., Viskanta, R. and Aihara, T.: Analysis of an active high-temperature thermal insulation system, 196
- McDonnell, V. G. *See* Mostafa, A. A.
- Mobbs, F. R. *See* El-Dujaily, M. J.
- Mohamed, O. E. E. *See* Neti, S.
- Mongia, H. C. *See* Mostafa, A. A.
- Molki, M., Astill, K. N. and Leal, A.: Convective heat-mass transfer in the entrance region of a concentric annulus having a rotating inner cylinder, 120
- Mortazavi, S. S. *See* Rostami, A. A.
- Mostafa, A. A., Mongia, H. C., McDonnell, V. G. and Samuelson, G. S.: An experimental and numerical study of particle-laden coaxial jet flows, 90
- Nakayama, A. and Ebinuma, C. D.: Transient non-Darcy forced convective heat transfer from a flat plate embedded in a fluid-saturated porous medium, 249
- Nelson, D. A., Ohadi, M. M., Zia, S. and Whipple, R. L.: Electrostatic effects on pressure drop in tube flows, 298
- Neti, S. and Mohamed, O. E. E.: Numerical simulation of turbulent two-phase flows, 204
- Ng, S. M. *See* Tso, C. P.
- Ohadi, M. M. *See* Nelson, D. A.
-   zi  k, M. N. *See* Huang, C. H.
-   zi  k, M. N. *See* Kim, W. S.
- Parang, M., Crocker, D. S. and Haynes, B. D.: Perturbation solution for spherical and cylindrical solidification by combined and convective and radiative cooling, 142
- Po  kas, P. *See* Vilemas, J.
- Poulidakos, D. *See* Kazmierczak, M.
- Poulidakos, D. *See* Wietrzak, A.
- Pozzi, A. and Lupo, M.: Variable-property effects in free convection, 135
- Quinn, W. R.: Mean flow and turbulence measurements in a triangular turbulent free jet, 220
- Rajab, I. and Winterton, R. H. S.: The two transition boiling curves and solid-liquid contact on a horizontal surface, 149
- Rostami, A. A. and Mortazavi, S. S.: Analytical prediction of Nusselt number in a simultaneously developing laminar flow between parallel plates, 44
- Saha, S. K. *See* Date, A. W.
- Salazar, A. J. and Campo, A.: Prediction of the thermal entry length without solving the complete entrance length problem, 48
- Samuelson, G. S. *See* Mostafa, A. A.
- Schuler, C. and Campo, A.: A calculation procedure for momentum and heat transfer in the turbulent boundary layer of gases using the methods of lines and control volumes (MOLCV), 79
- Schwartz, G. E. *See* Ligrani, P. M.
- Sengupta, S. *See* Agrawal, A. K.
- Tan, J. O. and Liu, C. Y.: Predicting the performance of a heat-pipe heat exchanger, using the effectiveness-NTU method, 376

- Tarada, F.: Prediction of rough-wall boundary layers using a low Reynolds number $k-\epsilon$ model, 331
- Trigui, N. and Guezennec, Y. G.: Heat transfer reduction in manipulated turbulent boundary layers, 214
- Tso, C. P., Low, H. G. and Ng, S. M.: Pool film boiling from spheres to saturated and subcooled liquids of Freon-12 and Freon-22, 154
- Ušpuras, E. *See* Vilemas, J.
- Vafai, K. and Kim, S. J.: Fluid mechanics of the interface region between a porous medium and a fluid layer—an exact solution, 254
- Vilemas, J., Ušpuras, E. and Poškas, P.: Investigation of heat transfer Prandtl number dependence by $\overline{u't'}$ and $\overline{v't'}$ solutions, 23
- Viskanta, R. *See* Maruyama, S.
- Visser, B. M. *See* Weber, R.
- Wangskarn, P., Ghorashi, G. and Gorla, R. S. R.: A numerical solution for the turbulent flow of non-Newtonian fluids in the entrance region of a heated circular tube, 40
- Weber, R., Visser, B. M. and Boysan, F.: Assessment of turbulence modeling for engineering prediction of swirling vortices in the near burner zone, 225
- Wietrzak, A. and Poulikakos, D.: Turbulent forced convective cooling of microelectronic devices, 105
- Whipple, R. L. *See* Nelson, D. A.
- Winterton, R. H. S. *See* Rajab, I.
- Wu, T. S. *See* Chiu, C. P.
- Xie, D. G.: Torsion effect on secondary flow in a helical pipe, 114
- Yoa, S. J., Kim, S. S. and Lee, J. S.: Thermophoresis of highly absorbing, emitting particles in laminar tube flow, 98
- Zhang, Z. *See* Bejan, A.
- Zia, S. *See* Nelson, D. A.
- Keyword Index**
- Algebraic grid generation technique, 303
- Annular flow, 120
- Annulus and effects, 72
- Anomalous circulation, 72
- Asymptotic solutions, 249
- Augmentation and enhancement, 54
- Boiling in Freon-12 and Freon-22, 154
- Boiling over spheres, 154
- Boundary layer(s), 2, 290, 331
- Cavitation, 269
- Cavity wall insulation, 371
- Circular tube, 346
- Clearance air jet, 362
- Coaxial jet, 90
- Collisions, 170
- Complex eigenvalue, 311
- Compressibility, 236
- Condensation, 290
- Conjugate, 257
- Conjugate mixed convection, 65
- Conjugated laminar forced convection, 311
- Control-volume discretization, 79
- Convective heat-mass transfer, 120
- Convective heat transfer, 23, 48
- Cooling of electronic equipment, 105
- Cross composed of tubes, 160
- Cubic spline collocation method, 257
- Cumulative collection efficiency, 98
- Curved pipe flows, 114
- Deformed boundary, 303
- Developing flow and heat transfer, 120
- Developing region, 40, 321
- Disk fin, 60
- Dissipation, 23
- Double diffusion, 30
- Drag reduction, 214
- Duct flows, 48
- Dynamic model, 10, 17
- Eccentric cylinders, 72
- Electrohydrodynamics, 298
- Electrostatic pressure, 298
- Enclosure flows, 355
- Entrance region, 40
- Erosion, 170, 269
- Exact solution, 254
- Fibers on a surface, 242
- Film boiling, 154
- Finned surfaces, 54
- Flow, 170
- Flow separation, 54
- Flow visualization, 160
- Fluid dynamics, 225
- Fluid flow, 254
- Foam, 236
- Forced convection, 249, 257, 346
- Friction, 236
- Gas injection, 196
- Gortler vortices, 2
- Hair, 242
- Heat exchangers, 10, 17, 376
- Heat pipe, 376
- Heat transfer, 142, 321, 371
- Heat transfer reduction, 214
- Heterogeneous nucleation, 290
- High temperature, 196
- In-cylinder air motion, 303
- Injectant, 274
- Insulation, 196
- Interface, 254
- Inverse conduction, 262
- Inverse heat conduction, 149
- Jet flow, 204
- K- ϵ model, 204
- Laminar flow, 346
- Large-eddy breakup devices, 214
- Lévéque problem, 60
- Longitudinal curvature, 2
- Longitudinal vortex, 274
- Measurements, 90
- Melting, 284
- Method of lines, 60, 79
- Modeling, 90
- Natural convection, 135, 284, 371
- Net positive suction head (NPSH), 269
- Non-Darcy flow, 249
- Non-Newtonian fluids, 40
- NTU method, 376
- Numerical analysis, 23
- Numerical simulation(s), 30, 204
- Parallelogram-shaped cavity, 129
- Particles, 170
- Perturbation method(s), 114, 142
- Pipe flow, 23, 204, 236
- Pool boiling, 149
- Porous media, 65, 242, 249, 254, 284
- Power-law fluids, 40
- Prandtl number, 23
- Pressure drop, 236
- Production, 23
- Property determination, 262
- Pulsating flow in a pipe, 321
- Radiative-convective cooling, 142
- Reynolds analogy, 214
- Rotating annular flow, 120
- Roughness, 331
- Secondary flows, 114
- Sentfleben effect, 298
- Sharp-edged slot, 220
- Skin friction, 321
- Smoke clearance, 362
- Solidification, 142
- Solid-liquid contact, 149
- Steady state, 149
- Subcritical vortices, 72
- Sublimation techniques for heat transfer, 120
- Swirling confined flows, 225
- Taylor vortex flow, 120
- Taylor vortices, 72
- Thermal diode, 129
- Thermal entry length, 48
- Thermophoresis, 98
- Transient, 30, 149
- Transient conduction, 262
- Transient duct flow, 311
- Transient natural convection, 129
- Transient solution, 249
- Transient thermal convection, 355
- Transition, 2
- Transition boiling, 149
- Triangular jet, 220
- Turbulence, 23, 90, 204, 220
- Turbulence control, 214
- Turbulence modeling, 225, 331
- Turbulent, 170
- Turbulent boundary layer(s), 79, 214, 274
- Turbulent convection, 105
- Turbulent heat flux, 23
- Twisted-tape elements, 346
- Two-fluid layers, 355
- Two-fluid model, 98
- Two-phase, 90, 204
- Two-phase layer flow, 154
- Unsteady turbulent flow, 303
- Variable-property effects, 135
- Vent positions, 362
- Vortex control, 274
- Wake, 160
- Wall jet, 274
- Weighted residuals, 10, 17
- Wettability, 149