

ABSTRACTED/INDEXED IN: Applied Mechanics Reviews, Applied Science & Technology Abstracts, Applied Science and Technology Index, Cambridge Scientific Abstracts, Chemical Abstracts, Chemical Engineering Abstracts, Current Contents/Engineering, Computing & Technology, Current Contents/SciSearch Database, Current Contents/Social & Behavioral Sciences, Current Technology Index, Engineering Index, INSPEC, MSCI, Mechanics, PASCAL/CNRS, Petroleum Abstracts, Research Alert, TCEA, Zentralblatt MATH. Also covered in the abstract and citation database SCOPUS®. Full text available on ScienceDirect®

Volume 53, issues 19-20

September 2010

## CONTENTS

- |   |      |  |
|---|------|--|
| C. A. CHEN, W. R. CHANG and T. F. LIN                 | 3593 | Time periodic flow boiling heat transfer of R-134a and associated bubble characteristics in a narrow annular duct due to flow rate oscillation     |
| K.-H. CHO, J. LEE, H. S. AHN, A. BEJAN and M. H. KIM  | 3607 | Fluid flow and heat transfer in vascularized cooling plates  |
| T. BASAK, G. ARAVIND, S. ROY and A. R. BALAKRISHNAN   | 3615 | Heatline analysis of heat recovery and thermal transport in materials confined within triangular cavities  |
| G. PONTRELLI and F. DE MONTE                          | 3629 | A multi-layer porous wall model for coronary drug-eluting stents   |
| C. JAMES, C. J. SIMONSON, P. TALUKDAR and S. ROELS    | 3638 | Numerical and experimental data set for benchmarking hygroscopic buffering models  |
| T. BASAK, S. ROY, D. RAMAKRISHNA and B. D. PANDEY     | 3655 | Analysis of heat recovery and heat transfer within entrapped porous triangular cavities via heatline approach                                      |
| X. QUAN, L. DONG and P. CHENG                         | 3670 | Determination of annular condensation heat transfer coefficient of steam in microchannels with trapezoidal cross sections                          |
| R.-H. CHEN, T. X. PHUOC and D. MARTELLO               | 3677 | Effects of nanoparticles on nanofluid droplet evaporation  |
| A. R. BETZ and D. ATTINGER                            | 3683 | Can segmented flow enhance heat transfer in microchannel heat sinks?   |
| M. K. URBKAIN and M. G. DAVIES                        | 3692 | Determination of wall decay times by use of a polynomial equation  |
| D. YANXIA, G. YEWEL, X. CHUNHUA and Y. XIAN           | 3702 | Investigation on heat transfer characteristics of aircraft icing including runback water   |
| X. RUIZ, J. PALLARES and F. X. GRAU                   | 3708 | On the accuracy of the interdiffusion measurements at low and moderate Rayleigh numbers. Some computational considerations                         |
| H. SADEK, C. Y. CHING and J. COTTON                   | 3721 | The effect of pulsed electric fields on horizontal tube side convective condensation   |
| R. BHARDWAJ, J. P. LONGTIN and D. ATTINGER            | 3733 | Interfacial temperature measurements, high-speed visualization and finite-element simulations of droplet impact and evaporation on a solid surface |
| Z. W. MA, P. ZHANG, R. Z. WANG, S. FURUI and G. N. XI | 3745 | Forced flow and convective melting heat transfer of clathrate hydrate slurry in tubes  |
| P. CHASANIS, M. BRASS and E. Y. KENIG                 | 3758 | Investigation of multicomponent mass transfer in liquid-liquid extraction systems at microscale  |
| S. FREUND and S. KABELAC                              | 3764 | Investigation of local heat transfer coefficients in plate heat exchangers with temperature oscillation IR thermography and CFD                    |
| A. SADEGHI and M. H. SAIDI                            | 3782 | Viscous dissipation effects on thermal transport characteristics of combined pressure and electroosmotically driven flow in microchannels          |
| S.-C. WONG, J.-H. LIOU and C.-W. CHANG                | 3792 | Evaporation resistance measurement with visualization for sintered copper-powder evaporator in operating flat-plate heat pipes                     |

(Continued on page 4337)





(Continued from outside back cover)

- J.-M. WANG and C.-Y. WU 3799 Transient radiative transfer in a scattering slab with variable refractive index and diffuse substrate
- D. EDOUARD, T. TRUONG HUU, C. PHAM HUU, F. LUCK and D. SCHWEICH 3807 The effective thermal properties of solid foam beds: Experimental and estimated temperature profiles
- Y. H. JANG and J. R. BARBER 3817 Multiscale analysis of moving clusters of microcontacts
- I. V. DEREVICH 3823 Thermodynamic model of viscosity of hydrocarbons and their mixtures
- J. M. GARCÍA DE MARÍA, A. BAIRI and V. A. F. COSTA 3831 Empirical correlations at high  $Ra$  for steady-state free convection in 2D air-filled parallelogrammic enclosures with isothermal discrete heat sources
- F. SOFOS, T. E. KARAKASIDIS and A. LIAKOPOULOS 3839 Effect of wall roughness on shear viscosity and diffusion in nanochannels
- R. K. KRSTEV 3847 Measuring of heat capacity
- S. H. HAN, D. CHANG and C. Y. KIM 3855 A numerical analysis of slab heating characteristics in a walking beam type reheating furnace
- A. SAHA, R. KUMAR and S. BASU 3862 Infrared thermography and numerical study of vaporization characteristics of pure and blended bio-fuel droplets
- Y. XING and B. WEIGAND 3874 Experimental investigation of impingement heat transfer on a flat and dimpled plate with different crossflow schemes
- W.-S. FU, J.-C. HUANG and C.-G. LI 3887 Enhancement of forced convection heat transfer in a three-dimensional laminar channel flow with insertion of a moving block
- P. HALDENWANG, P. GUICHARDON, G. CHIAVASSA and N. IBASETA 3898 Exact solution to mass transfer in Berman flow: Application to concentration polarization combined with osmosis in crossflow membrane filtration
- S. P. DAS, V. S. NIKOLAYEV, F. LEFEVRE, B. POTTIER, S. KHANDEKAR and J. BONJOUR 3905 Thermally induced two-phase oscillating flow inside a capillary tube
- Q. Y. ZHU, M. H. XIE, J. YANG and Y. LI 3914 Investigation of the 3D model of coupled heat and liquid moisture transfer in hygroscopic porous fibrous media
- A. ZACHÁR 3928 Analysis of coiled-tube heat exchangers to improve heat transfer rate with spirally corrugated wall
- F. ZINK, J. VIPPERMAN and L. SCHAEFER 3940 CFD simulation of thermoacoustic cooling
- J. B. HAELSSIG, A. Y. TREMBLAY, J. THIBAUT and S. GH. ETEMAD 3947 Direct numerical simulation of interphase heat and mass transfer in multi-component vapour-liquid flows
- M. FAUCHOUX, M. BANSAL, P. TALUKDAR, C. J. SIMONSON and D. TORVI 3961 Testing and modelling of a novel ceiling panel for maintaining space relative humidity by moisture transfer
- A. K. DA SILVA and L. GOSSELIN 3969 Volumetric maximization of coolant usage in closed self-driven circuits
- S.-X. ZHANG, Y.-L. HE, G. LAURIAT and W.-Q. TAO 3977 Numerical studies of simultaneously developing laminar flow and heat transfer in microtubes with thick wall and constant outside wall temperature
- J.-C. WANG, R.-T. WANG, T.-L. CHANG and D.-S. HWANG 3990 Development of 30 Watt high-power LEDs vapor chamber-based plate
- S.-M. KIM and I. MUDAWAR 4002 Analytical heat diffusion models for different micro-channel heat sink cross-sectional geometries
- X. XU, A. MEADE and Y. BAYAZITOGLU 4017 Fluence rate distribution in laser-induced interstitial thermotherapy by mesh free collocation

(Continued on next page)



(Continued)

- S. SAISON, J. KAEW-ON and S. WONGWISER 4023 Flow pattern and heat transfer characteristics of R-134a refrigerant during flow boiling in a horizontal circular mini-channel
- R. H. KHIABANI, Y. JOSHI and C. K. AIDUN 4039 Thermal properties of particulate TIMs in squeeze flow
- F. BOBARU and M. DUANGPANYA 4047 The peridynamic formulation for transient heat conduction
- A. NAVID, D. VANDERPOOL, A. BAH and L. PILON 4060 Towards optimization of a pyroelectric energy converter for harvesting waste heat
- J. TAINE, F. BELLET, V. LEROY and E. IACONA 4071 Generalized radiative transfer equation for porous medium upscaling: Application to the radiative Fourier law
- H. SHMUELI, G. ZISKIND and R. LETAN 4082 Melting in a vertical cylindrical tube: Numerical investigation and comparison with experiments
- H. Q. YANG, T. KIM, T. J. LU and K. ICHIMIYA 4092 Flow structure, wall pressure and heat transfer characteristics of impinging annular jet with/without steady swirling
- L. CHEN, X.-R. ZHANG, H. YAMAGUCHI and Z.-S. (SIMON) LIU 4101 Effect of heat transfer on the instabilities and transitions of supercritical CO<sub>2</sub> flow in a natural circulation loop
- X.-R. ZHANG, L. CHEN and H. YAMAGUCHI 4112 Natural convective flow and heat transfer of supercritical CO<sub>2</sub> in a rectangular circulation loop
- A. V. DEDOV, A. T. KOMOV, A. N. VARAVA and V. V. YAGOV 4123 Hydrodynamics and heat transfer in swirl flow under conditions of one-side heating. Part 1: Pressure drop and single-phase heat transfer
- C.-S. LIU 4132 A highly accurate LGSM for severely ill-posed BHCP under a large noise on the final time data
- H. SADEK, C. Y. CHING and J. COTTON 4141 Characterization of heat transfer modes of tube side convective condensation under the influence of an applied DC voltage
- V. K. PATNANA, R. P. BHARTI and R. P. CHHABRA 4152 Two-dimensional unsteady forced convection heat transfer in power-law fluids from a cylinder
- J. PALLARES, A. VERNET, J. A. FERRE and F. X. GRAU 4168 Turbulent large-scale structures in natural convection vertical channel flow
- H. B. LI, H. S. ZHEN, C. W. LEUNG and C. S. CHEUNG 4176 Effects of plate temperature on heat transfer and emissions of impinging flames
- C. GERARDI, J. BUONGIORNO, L.-W. HU and T. MCKRELL 4185 Study of bubble growth in water pool boiling through synchronized, infrared thermometry and high-speed video
- A. FERRARI 4193 Modelling approaches to acoustic cavitation in transmission pipelines
- J. A. WEIBEL, S. V. GARIMELLA and M. T. NORTH 4204 Characterization of evaporation and boiling from sintered powder wicks fed by capillary action
- T.-M. JENG, S.-C. TZENG and F.-Z. TANG 4216 Fluid flow and heat transfer characteristics of the porous metallic heat sink with a conductive cylinder partially filled in a rectangular channel
- K.-I. SUGIOKA, T. TSUKADA, H. FUKUYAMA, H. KOBATAKE and S. AWAJI 4228 Effect of static magnetic field on thermal conductivity measurement of a molten Si droplet by an EML technique: Comparison between numerical and experimental results
- J. WYRWAL, J. ŚWIRSKA and A. MARYNOWICZ 4233 Some estimates of the diffusion stress tensor and the diffusion energy for a binary mixture of water vapour and dry air
- J. FAN and L. WANG 4238 Constructal design of nanofluids
- A. FABREGAT, J. PALLARÈS, I. CUESTA and F. X. GRAU 4248 Numerical simulations of a second-order chemical reaction in a plane turbulent channel flow

(Continued on next page)

(Continued)

- |   |      |  |
|---|------|--|
| C.-H. CHEN  | 4264 | On the analytic solution of MHD flow and heat transfer for two types of viscoelastic fluid over a stretching sheet with energy dissipation, internal heat source and thermal radiation |
| C. YOUNG LEE, M. M. HOSSAIN BHUIYA and K. J. KIM    | 4274 | Pool boiling heat transfer with nano-porous surface  |
| L. S. SUNDAR and K. V. SHARMA                       | 4280 | Heat transfer enhancements of low volume concentration $Al_2O_3$ nanofluid and with longitudinal strip inserts in a circular tube  |
| C.-C. WANG, C.-Y. TSENG and I. Y. CHEN              | 4287 | A new correlation and the review of two-phase flow pressure change across sudden expansion in small channels   |
| Z.-T. YU, X. XU, Y.-C. HU, L.-W. FAN and K.-F. CEN  | 4296 | Transient natural convective heat transfer from a heated triangular cylinder to its air-filled coaxial cylindrical enclosure   |
| S. SIVASANKARAN, V. SIVAKUMAR and P. PRAKASH        | 4304 | Numerical study on mixed convection in a lid-driven cavity with non-uniform heating on both sidewalls  |
| K. YANG and K. VAFAI                                | 4316 | Analysis of temperature gradient bifurcation in porous media – An exact solution   |
| J. H. JANG, D. E. LEE, M. Y. KIM and H. G. KIM      | 4326 | Investigation of the slab heating characteristics in a reheating furnace with the formation and growth of scale on the slab surface  |
| D. D. LUO, H. S. ZHEN, C. W. LEUNG and C. S. CHEUNG | 4333 | Premixed flame impingement heat transfer with induced swirl  |