

CHT-08 Programme

	Sunday 11 May	Monday 12 May	Tuesday 13 May	Wednesday 14 May		Thursday 15 May	Friday 16 May	
8.30 – 9		Registration	Laundry	Patankar	8.30 – 9	Lee	Fueyo	8.30 – 9
9 – 9.30	ICHMT-EC meeting	Opening session			9 – 9.30			9 – 9.30
9.30 – 10		Spalding	Poster Session 3	Poster Session 5	9.30 – 10	Poster Session 6	Poster Session 8	9.30 – 10
10 – 10.30					10 – 10.30			10 – 10.30
10.30 – 11		Runchal			10.30 – 11			10.30 – 11
11 – 11.30					11 – 11.30			11 – 11.30
11.30 – 12			Poster Session 1	Radiation panel	Rodi	Nakayama	Closing session	11.30 – 12
12 – 12.30					12 – 12.30			12 – 12.30
12.30 – 1		Registration			Free	12.30 – 1	Pollard	
1 – 1.30				1 – 1.30				1 – 1.30
1.30 – 2	Lunch*		Lunch*	1.30 – 2		Lunch*		1.30 – 2
2 – 2.30				2 – 2.30				2 – 2.30
2.30 – 3				2.30 – 3				2.30 – 3
3 – 3.30				3 – 3.30		Poster Session 7		3 – 3.30
3.30 – 4	Poster Session 2		Poster Session 4	3.30 – 4			3.30 – 4	
4 – 4.30				4 – 4.30				4 – 4.30
4.30 – 5			4.30 – 5			4.30 – 5		
5 – 5.30		Mallinson	Jaluria	5 – 5.30	Free		5 – 5.30	
5.30 – 6	Welcome reception			5.30 – 6		5.30 – 6		
6 – 6.30		Free	Free	6 – 6.30		6 – 6.30		
6.30 – 7				6.30 – 7		6.30 – 7		
7 – 7.30				7 – 7.30			7 – 7.30	
7.30 – 8				7.30 – 8	Gala dinner (to 11pm)		7.30 – 8	
8 – 8.30				8 – 8.30		8 – 8.30		
8.30 – 9				8.30 – 9		8.30 – 9		

* For suggested lunch choices, click [here](#)

Keynote authors and speakers:

- D. Brian Spalding, CHAM Ltd, UK:
CHT-08-001: Simultaneous Solid Stress and CFD/CHT
- Tim Craft, Hector Iacovides, **Brian Launder** and Athansios Zacharos, The University of Manchester, UK:
CHT-08-002: Some Swirling-Flow Challenges for Turbulent CFD
- Norberto Fueyo, University of Zaragoza, Spain:
CHT-08-003: Turbulent Combustion and Detailed Chemistry
- Yogesh Jaluria, Rutgers, The State University of New Jersey, USA:
CHT-08-005: Experimental Data Driven Simulation of Convective Transport
- Joon Sik Lee, Seoul National University, Korea:
CHT-08-006: Thermal Transport Modeling for the Simulation of Heat Transfer in Micro/nanoscale Devices
- Gordon Mallinson, University of Auckland, New Zealand:
CHT-08-007: Visualisation Applied to Computational Heat Transfer
- Akira Nakayama, Shizuoka University, Japan:
CHT-08-008: Theory of Porous media and its Numerical Applications to Engineering Problems
- Suhas Patankar, Innovative Research Inc, USA:
CHT-08-009: CFD Simulation of Airflow and Cooling in a Data Center
- Andrew Pollard, Queens University, Canada:
CHT-08-010: Whither The Axisymmetric Free Jet after 50 Years of Research?
- Jan G. Wissink and **Wolfgang Rodi**, University of Karlsruhe, Germany:
CHT-08-011: DNS of Flow and Heat Transfer in Transitional Turbine-Blade Boundary Layers
- Aki Runchal, ACRi - Analytic & Computational Research, Inc., USA:
CHT-08-012: Brian Spalding: CFD & Reality

Poster sessions

Session	Topics	Session	Topics
1	Solidification and melting; Two-phase flow and heat transfer	5	Materials and manufacturing; Mixed modes
2	Bio heat transfer; Applications	6	Conduction; Forced convection; Micro and nano heat transfer
3	Computational and mathematical methods; Turbulence	7	Natural convection; Verification and validation
4	Radiation; Combustion	8	Heat Exchangers; Open Forum

Session Allocation for Posters

(NB: Some posters have been allocated for presentation at the Symposium to different sessions from their placement on the CD)

Applications – Poster Session 2 – Monday 3 pm – 5 pm

- 110 Improvement of heat exchange in a ventilated double wall with an aim of increasing summer comfort in a timber-frame house
G. Fraisse, B. Souyri, R. Boichot and J-L. Kouyoumji
- 130 Integral analyses of the convective heat transfer around ice protected airfoils with non-isothermal surfaces
Guilherme Araújo Lima da Silva, Otávio de Mattos Silveiras, and Euryale Jorge de Godoy Jesus Zerbini
- 132 Airflow and heat transfer in a slot-ventilated enclosure application to refrigerated trucks
Jean Moureh, Serge Tapsoba and Denis Flick
- 149 Convection suppression in an attic shaped enclosure
Timothy Anderson, Mike Duke and James Carson
- 164 Numerical modeling of pulse tube refrigerator with inertance tube
T.R. Ashwin, G. S. V. L. Narasimham
- 174 Thermal coupling of computational fluid dynamics with advanced process simulation software to model heat exchangers for utility boilers
Nuray Kayakol
- 175 Determination of the optimal rate of feed of the solar desalination plants by distillation of small capacities provided with a system of regulation
Ousmane Sow, Thierry Mare, Jacques Miriel and Mamadou Adj .
- 187 Air circulation simulation of urban microclimate interaction with building in case canyon street in west-south Algeria
A. Missoum, A. Slimani, B. Draoui, R. Khelifaoui and R. Belarbi
- 197 Transient analysis of a double – pass photovoltaic thermal (PV/T) solar collector with fins
Ebrahim M. Ali Alfegi, Kamaruzzaman Sopian, Mohd Yusof Hj Othman and Baharudin Bin Yatim
- 212 Numerical study of turbulent flow and heat transfer in a rotor-stator system
Rachid Boutarfa, Julien Pelle and Souad Harmand
- 221 Modelling of heat transfer processes in fuel channels of RBMK-type reactors
Eugenijus Uspuras, Mindaugas Vaisnoras and Algirdas Kaliatka
- 227 Dynamic model for a revolving kiln of drying of phosphates
T. Raffak, M. Agouzoul, M. Mabsate, H. Ezzaki and A. Chik
- 244 Numerical simulation of the fluidized bed: application to ice slurry systems
Tarik.El Rhafiki, Tarik.Kousksou, Youssef.Zeraouli, Eric.Schall and Abdelaziz.Mimet
- 254 Thermal behavior of series of vaulted and flat roofs exposed to wind flow and solar radiation
A. Mehdizadeh , Professor M. Yaghoubi
- 255 Temporary evolution of the thermal field of a stirred tank in Bingham fluid and laminar inertial regime
M. Bouanini, A.Youcefi, L. Rahmani, O. Hami, B. Mebarki and B. Draoui
- 258 Numerical model for a laminar flow and heat transfer in the agitated vessel by inclined blades anchor
O. Hami, B. Draoui, B. Mebarki, L. Rahmani and M. Bouanini
- 268 A numerical study of heat convection in a thermal chaotic mixer with two rods
Kamal El Omari and Yves Le Guer
- 269 Coupled heat and mass transfer during absorption of water vapour into LiBr-H₂O solution fan sheets
A. Acosta, N. Garcia and P.A. Rodríguez
- 278 Numerical study of effect of heat and mass transfer on solid oxide fuel cell performance
H. Mahcene , H. Ben Moussa ,H. Bouguettaia and D.Bechki
- 297 Numerical and experimental study of a ground-coupled heat pump combined with thermal solar collectors
G. Achard, V. Trillat-Berdal and B. Souyri
- 330 Effects of surface catalyticity on computed heat transfer over a reentry vehicle
A. Viviani., G. Pezzella and C. Golia
- 358 Numerical investigation of a topology and optics of the multiphase flow past a sphere, illuminated by the “light sheet”
E.B. Vasilevskiy, A.B. Miller, G.V. Molleson and A.L. Stasenko
- 374 Effect of dust on the heat transfer under fixed bed reactor conditions
H. Häring, B. Weiss, F. Winter, R. Lange, G. Aichinger and J. Wurm
- 375 Numerical study of the heat transfer and the air flow in heated greenhouses
Nadia Dihmani, Ahmed Mezrhab, Larbi Elfarh, Hicham Bouali and Hassan Naji
- 383 A numerical method for three-dimensional parabolic fluid flow and heat transfer in straight ducts of irregular-shaped cross-section
Nirmalakanth Jesuthasan and B. Rabi Baliga
- 398 Numerical studies for pyrolysis, gasification and heat transfer in an RDF fixed-bed gasifier under non-premixed conditions
C. Y. Tsai, H. G. Im, T. Y. Kim and J. H. Kim

Bio Heat Transfer – Poster Session 2 – Monday 3 pm – 5 pm

- 109 Analysis of the cardiac system: transport and energetics
Sam Sideman, Amir Landesberg and Efrath Barta
- 176 Review of computational bio-heat transfer modeling for tumour treatment

Rashad Aouf, Vojislav Ilic and Steve Hansen

- 177 Enhancing hyperthermic treatment by incorporation of some molecular dynamics (MDS) aspects of the propagation of a phase change front in a polymeric fluid
Rashad Aouf and Vojislav Ilic
- 270 Heat transfer in interstitial ultrasound heating of brain tumors, including the effect of bifurcated blood vessels
Boguslaw J. Jarosz
- 332 Convection and pattern formation of micro-organisms in a stratified fluid
Q.T. Mach, T.H. Nguyen and G. LePelec

Combustion – Poster Session 4 Tuesday 3 pm – 5 pm

- 113 Computational analysis of compressed gas injection systems for combustion engines
Dirk Hubner and Harald Ortwig
- 167 Numerical simulation of confined diffusion flames
A. Khelil, H. Naji, L. Loukarfi and G. Mompean
- 241 Flame stabilization, onset of oscillations and re-stabilization
Moshe Matalon and Vadim Kurdyoumov
- 263 Numerical study of flame flashback criteria and flame propagation in premixed combustion
N.S. Mehdizadeh and S.A. Nichkoohi
- 275 Numerical study of the effect of type of fuel on pollutant emissions in a diesel engine
Kabar Seloua and Kadja Mahfoud
- 316 Simulation of coal combustion in a pulverized coal-fired boiler
M.J. Chernetsky, A.A. Dekterev and A.A. Gavrilov
- 321 Numerical simulation of a ceramic furnace burner. Study of the influence of the operating modes on the dynamic and thermal fields
Anouar Souid, Wassim Kriaa, Hatem Mhiri, Georges Le Palec and Philippe Bournot
- 327 CFD computations on fire and smoke propagation with Phoenics2006; validation of 6-flux radiation model and simple combustion model using physical model tests
G.M. van Uffelen and W.D. Wormgoor
- 334 Direct numerical simulation of ignition and propagation of turbulent H₂/air, CH₄/air and n-heptane/air premixed flames
Makoto Sato, Shingo Matsuura, Mamoru Tanahashi and Toshio Miyauchi
- 348 Estimate of the subgrid variance of the mixture fraction in spray turbulent combustion
H. Meftah, J. Reveillon and A. Mir
- 371 Modelling and simulation of lean premixed turbulent methane/hydrogen/air flames for two flow configurations
F. Dinkelacker, B. Manickam, N.K. Aluri, S.P.R. Muppala and J. X Wen

Computational and Mathematical Methods – Poster Session 3 – Tuesday 9.30 am – 11.30 pm

- 103 Simultaneous use of analytical and numerical methods in conjugated heat transfer
Reijo Karvinen
- 133 Location and identification of a volumic heat source in a 2D diffusion system using the boundary element method
Y.Touhami and D.Petit
- 154 A new approach to simulate the fluid network of unsteady flow
Zhi Tao, Shengping Hou, Shujun Han, Shuiting Ding, Guoqiang Xu and Hongwei Wu
- 158 The connection between spatial discretization and errors when computing lineal and non-lineal heat transfer processes by the network simulation method
F. Alhama, J. P. Luna Abad and C. F. González-Fernández
- 183 Prediction of thermophysical properties by methods based on similarity of molecular structures
Neima Brauner, Georgi St. Cholakov, Roumiana P. Stateva and Mordechai Shacham
- 203 A skew upwinding scheme for numerical radiative transfer
Daniel R. Rousse
- 248 On the solution of a periodic internal laminar flow
K. Mansouri and A. Hadiouche
- 261 A 3D spectral method for convection equations in low Mach number approximation
Ouafa Bouloumou and Eric Serre
- 276 An adaptive FEM model for unsteady turbulent convective flow over a backward facing step
Xiuling Wang, David B. Carrington and Darrell W. Pepper
- 296 On the accuracy of the incremental unknowns in simulating transient heat and mass transfer problems
R. Saadani, Y. Candau and A. Sbaibi
- 310 Modeling of heat generation by friction
Viet Dung Nguyen, Claudia Cogne, Jérôme Fortin, Mohamed Guessasma, Emmanuel Bellenger
- 315 Finite volume method for conjugate heat transfer in complex geometries using Cartesian cut-cell grids
Vlado Przulj, Paul Birkby and Philip Mason
- 365 Instability of fluid and thermal fronts in non-isothermal flows in homogeneous porous media
M. N. Islam, J. Azaiez and B. Maini
- 367 Steady convection in Newtonian fluid flow through an annular cross section tube
Tudor Boaca, Nicolae Paraschiv and Ioana Boaca

- 372 Computational investigation of laminar flow and convective heat transfer in an obstructed channel using lattice Boltzmann method
M. A. Moussaoui, M. Jami, A. Mezrhab and H. Naji
- 409 A new numerical algorithm for low Mach number supercritical fluids
Jalil Ouazzani and Yves Garrabos

Conduction – Poster Session 6 – Thursday 9.30 am – 11.30 am

- 140 Analysis of the transient thermal response of a solid via a conjugate heat transfer method
Marc Errera, G. Chaineray and M. Lachi
- 204 Modeling of the thermoelectric behaviour of current passage tubes in conductive polymer composite
Jean-Pierre Ploteau, Patrick Glouannec, Hervé Noel, Philippe Chauvelon and Jean François Feller
- 318 Inverse heat conduction parameter identification by genetic algorithm based method
Balázs Czél and Gyula Gróf

Forced Convection – Poster Session – 6 Thursday 9.30 am – 11.30 am

- 106 Laminar forced flow and heat transfer enhancement by using water-based nanofluids in a microchannel
Cong Tam Nguyen, Mojtaba Jarrahi Khameneh and Nicolas Galanis
- 115 St-Re-Pr relationship for a heated/cooled cylinder in laminar cross flow
František Maršík, Zdeněk Trávníček, Ruey-Hor Yen, Wen-Yun, Tu and An-Bang Wang
- 117 Heat transfer on a hot surface impinged by a cold circular liquid jet
Jian-Jun Shu
- 141 A numerical study of flow and heat transfer between two rotating spheres with time- dependent angular velocities
Asgar Baradaran Rahimi
- 142 Numerical simulation of an impinging single square jet
L. B. Y. Aldabbagh
- 169 The optimal spacing between parallel heat generating boards cooled by turbulent forced convection
H.Yüncü and Ö Ekici
- 173 The influence of thermal conductivity on the heat transfer between a cylinder and ascending fluid
B. Dadda, A. Ghezal, Z. Ouchiha, A. Benzaoui and S. Abboudi
- 210 Heat transfer in thin liquid films flowing down heated inclined grooved plates
Hongyi Yu, Karsten Löffler, Tatiana Gambaryan-Roisman and Peter Stephan
- 242 Fluid flow and heat transfer in a channel with porous blocks of different shapes
N. Guerroudj and H. Kahalerras
- 251 Investigation of excursion instability in forced convection in a vertical heated channel
N. Ibrahim.Rassoul, T.Hamidouche and EK.Si Ahmed
- 252 Analytical and numerical study of heat transfer in laminar pulsatile flow around a heated cylinder
Y. Benakcha, R. Hadj-Ali, Z. Ouchiha, A. Ghezal, and J.C. Loraud
- 280 Prandtl number effects on vertical wall jets in forced convection regime
Amèni Mokni, Jamel Kechiche, Hatem Mhiri, Georges Le Palec and Philippe Bournot
- 290 Numerical simulation of two heated parallel plane air jets
Bentarzi Fatiha, Mataoui Amina1 and Terfous Abdelali
- 294 Quantifying irreversibilities in transient thermal convection
Emilia-Cerna Mladin, Colette Padet, Monica Costea, Mohammed Lachi, Mourad Rebay
- 320 Influence of corona discharges on the convective heat transfer in a channel flow
Sid'Ahmed Ould Ahmedou and Michel Havet
- 331 Conjugate heat transfer on a wall-mounted cube cooled simultaneously by an impinging jet and a cross flow
M. Popovac and K. Hanjalić
- 355 Numerical simulation of stability of a supersonic near-wall flow past rounded compression corner
I.V. Egorov, A.V. Fedorov and A.V. Novikov
- 380 CFD Investigation the flow over distorted and un-distorted cuboids
L.C. Akalanne and S.A. MacGregor
- 389 The radial injection of a hot fluid into a cold porous medium: the effects of local thermal non-equilibrium
D. Andrew. S. Rees and Andrew P. Bassom
- 400 Numerical investigation of heat and fluid flow across a rotating circular cylinder dissipating uniform heat flux in 2D laminar flow regime
Sachin B. Paramane
- 404 Laminar flow for heat transfer enhancement in rectangular channels with protrusion
O. Alshroof, J. Reizes, V. Timchenko and E. Leonardi

Heat Exchangers – Poster Session 8 – Friday 9.30 am – 11.30 am

- 170 Effect of baffle orientation on heat transfer and pressure drop of shell and tube heat exchangers with and without leakage flows
K Mohammadi, W Heidemann and H Müller-Steinhagen
- 220 Thermal analysis and optimization of a heat regenerator composed by two coupled moving bed heat exchangers
J.A. Almendros-Ibáñez, A. Soria-Verdugo, U. Ruiz-Rivas and D. Santana

- 233 Coupled conduction and convection in coolant passages with arrays of pin fins
G. Comini, G. Croce and P. D'Agaro
- 234 Heat exchangers used in refrigeration circuits - modelling and experimental validation
Fatma Marhoon, Peter Senior and Peter Heggs
- 236 Mathematical analysis of laminar counterflow parallel plate heat exchangers for large prandtl and peclet numbers
Marcos Vera and Amable Liñán
- 237 Optimum operating condition for heat transfer in an air-water heat exchanger
A. Bassam, G. Urquiza and J. A. Hernandez
- 239 Combined heat and mass transfer analysis from annular fins of constant cross-sectional area
Mostafa H. Sharqawy and Syed M. Zubair
- 273 Numerical determination of heat transfer enhancement in channels by placing fins at the entrance
Yassine Kabar and Mahfoud Kadja
- 286 Transient thermal and hydrodynamic models of a flat heat pipe for the cooling of electronic components
R. Sonan, S. Harmand, J. Pellé, D. Leger and M. Fakès
- 298 DNS of flow and heat transfer in fin-tube heat exchangers
Yan Su, C.T. Hsu
- 301 DNS of turbulent heat transfer of supercritical CO₂
Katsumi Hashimoto, Xinliang Li, Yasuhiro Tominaga, Mamoru Tanahashi and Toshio Miyauchi
- 337 Numerical investigation of two-phase aqueous foam flow for heat exchanger applications
I. Gabrielaitiene, B. Sunden and J. Gylys
- 353 Heat transfer and air flow patterns inside an air-conditioned large auditorium
Waleed Abdel-Samea, Gamal ElHariry and Essam E. Khalil
- 354 CFD Applications for the preservation of the tombs of the Valley of Kings, Luxor
Essam E Khalil
- 360 Quick and accurate computer program for three-dimensional analysis of shell-and-tube type of industrial heat exchanger
Masato Handa

Materials and Manufacturing – Poster Session 5 – Wednesday 9.30 am – 11.30 am

- 116 Second sound and shock waves in rigid crystals: an extended thermodynamic analysis
G. Lebon P.C. Dauby, Th. Desaive and A. Valenti
- 180 Modeling the breakthrough performance of n-butane adsorption on carbon-coated ceramic monoliths
Hong-sung Yang and Cheng-tung Chou
- 235 CFD simulation of heat transfer and high temperature conversion of plastic particles after injection into blast furnace raceway
Christian Jordan, Michael Harasek, Christian Maier, Franz Winter, Georg Aichinger, Christoph Feilmayr and Stefan Schuster
- 287 Heat, mass and momentum transfer within an iron ore pellet during drying
Anna-Lena Ljung and T. Staffan Lundström
- 357 Application of multi-physics modeling in electro-chemical machining process for 3D compressor blade
Ryo Tsuboi, Dai Kato and Makoto Yamamoto

Micro and Nano Heat Transfer – Poster Session 6 – Thursday 9.30 am – 11.30 am

- 153 Numerical analysis of flow and heat transfer characteristics of y-fractal-link micro-channel networks
Guoqiang Xu, Meng Wang, Zhi Tao, Shuiting Ding, Hongwei Wu and Jun Guo
- 156 Thermal conductivity and heat transfer in a semi conductor nanotube
Leila Choobineh, Afrasiab Raisi and Mahmood Yaghoubi
- 304 Thermally controlled size reduction of nanoink droplets in water
Magnus Fischer and Dimos Poulidakos
- 356 Theoretical investigation on the thermal performance of flat two-phase heat spreaders with micro channels
J. Mansouri, S. Maalej and M.C. Zaghoudi
- 361 Laminar forced convection of nanofluids in circular pipes
Mehrdad Raisee, Mostafa Moghaddami and Zahra Niroobakhsh
- 399 Natural convection and heat transfer of nanofluids considering the Soret effect
R. Bennacer, M. El Ganaoui T. Maré and T. Nguyen
- 402 Coarse-grained micro-hydrodynamics simulation of high heat-flux boiling using the CMFD code TransAT
D. Caviezel, C. Narayanan, D. Lakehal and T-N. Dinh
- 405 The effect of operating frequency and jet Reynolds number on heat transfer in microchannel with synthetic jet
D. Li, V. Timchenko, J.A. Reizes and E. Leonardi

Mixed Modes – Poster Session 5 – Wednesday 9.30 am – 11.30 am

- 111 Entropy production for developing laminar mixed convection in vertical tubes
Ridha Ben Mansour, Nicolas Galanis and Cong Tam Nguyen
- 134 Buoyancy effect on the flow and heat transfer around an unconfined heated square cylinder
S. Turki
- 145 Numerical analysis of flow regimes in developing mixed convection of air flow in vertical tube with variables fluid properties

- A. Behzadmehr and A. Laneville*
- 146 Soret and Dufour effects on convection flow past a vertical porous flat plate
Z. Aouachria
- 172 Modelling of the opposing mixed convection heat transfer in a one-side heated vertical flat channel in the transition region
Povilas Poskas, Arunas Sirvydas and Robertas Poskas
- 193 Three-dimensional numerical simulation of the interaction between natural convection and radiation in a differentially heated cavity in the low Mach number approximation
Gilles Scarella, Gilbert Accary, Sofiane Meradji, Dominique Morvan and Oleg Bessonov
- 215 Simulation of transient two-dimensional radiative and conductive heat exchanges in high-temperature glass
F. Asllanaj, L. Soudre, Y. Meshaka and G. Jeandel
- 218 Some investigations on transient mixed convection
M. Ezan; J. Padet; N. El Wakil and R-M. Cotta
- 232 Computation of fluid flow patterns and heat transfer in horizontal channel mixed convection
A. Haddad, A. Benderradji, R. Taher, M. Médale and C. Abid
- 293 Computation of combined mixed convection and surface radiation in a partitioned ventilated rectangular cavity
Ahmed Bahlaoui, Abdelghani Raji, Mohammed Hasnaoui, Mohamed Naïmi, Taoufik Makayssi, Mohamed Lamsaadi
- 307 Mixed convection in an annulus embedded with an anisotropic porous matrix
Rachid Kibboua, Yacine Ould-Amer and Abdelwahid Azzi
- 312 Fast radiative model for modeling coupled heat transfers in solid and liquid semi-transparent materials
Hoang Quan Nguyen, Benjamin Remy and Alain Degiovanni
- 325 Impact of turbulence and radiation models on heat transfer prediction
D. Suzzi and C. Rauch, S. Jagsch and R. Almbauer
- 342 Development of laminar mixed convection in vertical semicircular ducts
N. A. Elsharif, A. A. Busedra and Y. El.Hasadi
- 369 Transient conjugated upward and downward mixed convection in a partially heated thick pipe
Abdeslam Omara and Said Abboudi
- 378 Combined buoyancy effects of thermal and mass diffusion on laminar convection in a vertical isothermal channel
Othmane Oulaid, Brahim Benhamou and Nicolas Galanis
- 381 Inverse problem analysis for heat flux estimation in conjugated conduction-external convection
Mohammed Lachi, Carolina P. Naveira, Helcio R.B. Orlande and Renato M. Cotta
- 390 Pool fire model comparison for radiation evaluation in case of fire in tank farms
Marco Fossa and Giovanni Tanda
- 396 Competition between lid driven and natural convection in square cavity: lattice boltzmann method
D.E. Ameziani , Y. Guo, R. Bennacer, M. El Ganaoui and M. Bouzidi

Natural Convection – Poster Session 7 – Thursday 3 pm – 5 pm

- 107 Conjugate natural convection in an enclosure with local heat sources
G.V. Kuznetsov and M.A. Sheremet
- 118 Inverse boundary design free convection problem by conjugate gradient method
S. Payan, S.M.H. Sarvari and H. Ajam
- 120 Numerical study of permeability effect on convection in fractured porous media filled with hydrocarbon ternary mixture
T. J. Jaber and M. Z. Saghir
- 121 Thermodiffusion coefficient of binary liquid mixtures of n-alkane nC₅-nC₁₀: comparison between experimental and numerical results
P. Blanco, M. Bou-Ali, Y Yan and M.Z. Saghir
- 135 Natural convection between two confocal elliptical tubes using spectral method
Fathi M. Mahfouz
- 136 Numerical solution of thermal buoyant flow with higher order Lagrangian blobs method
Carmine Golia , Bernardo Buonomo and Antonio Viviani
- 159 Computing coupled density driven flow and heat flux in porous media
A. Soto Meca and F. Alhama
- 162 Natural convection in a horizontal annulus with an inner heat generating solid square cylinder and an outer isothermal circular boundary
A. Shaija and G. S. V. L. Narasimham
- 163 Free convection in a cubical enclosure with four heated sections on the lower surface and isothermal side surfaces
Patrick H. Oosthuizen and Jane T. Paul
- 213 Numerical simulation of the natural convective flow for electronics packaging application
Florence Michel, Heinrich Reister and Bernard Desmet
- 231 Numerical investigation of heat transfer in a tall enclosures with ribbing walls
V.I. Terekhov, V.V. Terekhov and E.O. Maslova
- 243 Numerical study of laminar natural convection in the boundary layer around a vertical cylinder with opposing buoyancies
M. Si Abdallah, B.Zeghmami and L.P.E, Physics
- 245 Effect of non uniform conductivity on natural convection across a horizontal layered porous cavity
Yacine Ould-Amer
- 247 Natural double diffusive convection induced by opposing buoyancy forces in a shallow horizontal cavity filled with non-Newtonian power-law fluids.
Taoufik Makayssi, Mohamed Naïmi, Mohamed Lamsaadi, Mohammed Hasnaoui, Abdelghani Raji, Ahmed Bahlaoui
- 262 Numerical investigation of Marangoni convection around a bubble

- Séamus M. O'Shaughnessy and Anthony J. Robinson*
- 292 Effect of aspect ratio on the route to chaos of convective flows in rectangular enclosures.
Sabiha Aklouche, Belkacem Zeghmati, Khadidja Bouhadef, Michel Daguenet and Madjid Tata
- 300 A numerical investigation of interactions of particles with Benard cells in horizontal channels
Ilker Tari, Andrew Tangborn and Yaman Yener
- 302 Control of convective heat transfer between two walls
Hassen Abbassi
- 323 Effects of floor wall located heat barrier on natural convection fluid flow in a square enclosure
Erinç Hakyemez, Moghtada Mobedi and Hakan F. Öztop
- 329 On the Boussinesq approximation for the Poiseuille Rayleigh Benard problem
Serge Blancher, René Creff and Carlos Perez Wilson
- 343 LES and RANS computations of natural convection in a nearly-horizontal shallow cavity
Y. Addad, M. Mahmoodilari and D. Laurence
- 359 2D transient natural convection generated by an isothermal active walls in parallelogramic enclosures
A. Bai'ri, N. Nguyen, I. Bai'ri, N. Laraq, J.M. García de María, N. Alilat
- 363 Prandtl number scaling of a natural convection flow over an evenly heated vertical plate ($Pr > 1$)
T. Aberra, S. W. Armfield and M. Behnia
- 373 Numerical study of natural convection in a single-phase closed tubular thermosyphon
Isao Ishihara and Yasufumi Yamamoto
- 376 Free convection from a horizontal array of cylinders beneath an adiabatic ceiling
M. Yaghoubi, D. Ehyaie and A.H. Eshtiaghi
- 382 Numerical simulation of natural convection and condensation of humid air in a partitioned enclosure
N. Laaroussi, H. Sun and G. Lauriat
- 384 Heatfunction analysis of the Rayleigh-Bénard problem in porous media
M. A. Waheed and D. A. S. Rees
- 403 Numerical and experimental investigation of natural convection in double facades
Stéphanie Giroux-Julien, Christophe Ménézo, Jérémie Vareilles, Hervé Pabiou, Marco Fossa and E. Leonardi
- 410 Natural convection cooling of hot molybdenum plates.
Mark Ho, Guillaume Bois, Dave Wassink and Guan Yeoh

Open Forum – Poster Session 8 – Friday 9.30 am – 11.30 am

- OF-101 Modelisation of convective drying of a liquor mud in a ventilated drying oven
Z. Chaibi, A. Gonzalez and B. Zeghmati
- OF-103 Direct simulations of radiative heat transfer in porous media
S. Haussener, J. Petrasch, H. Friess, W. Lipiński, and A. Steinfeld,
- OF-104 Stefan problem with a contact line – an inverse formulation
Oleg Volkov and Bartosz Protas
- OF-105 Numerical and experimental analysis of thermogravitational stability
Abdelfattah Zebib, M. Mounir Bou-Ali, J. Karl Platten
- OF-106 Global heat exchange models for crystal growth control considering interface radiation and kinetics
V.I. Deshko, V.D. Golishev, A.Ya. Karvatskii, A.V. Lenkin, Yu.V. Lokhmanets
- OF-107 Numerical simulation of radiation and complicated heat transfer problem by boundary elements method
Karvatsky A.Ya., Dudnikov P.I., Leleka S.V., Deshko V.I., Lokhmanets I.V.
- OF-108 Numerical study of heat transfer in a non-Newtonian fluid between vertical concentric cylinders
M. Amoura, N. Zeraibi, A. Benzaoui
- OF-109 Nonstationary solidification of binary melts with a non-equilibrium mushy layer
D Alexandrov

Radiation – Poster Session 4 – Tuesday 3 pm – 5 pm

- 114 A quasi-steady method for inverse design and control of a two-dimensional radiant oven in transient state
S. Mehraban, S.M.H. Sarvari and S. Farahat
- 152 Radiative properties of cellular foams
A. Kaemmerlen, R. Coquard and D. Baillis
- 155 Thermal radiation modeling in numerical simulation of melt-coolant interaction
L.A. Dombrovsky, M.V. Davydov and P. Kudinov
- 184 Radiative heat transfer in a plate-fuel reactor core
Magali Zabiégo
- 230 Extension to complex geometries of the hybrid finite element / finite volume method for the solution of the radiative transfer equation
P. J. Coelho
- 238 Prediction of airflow and temperature field in an ice rink with radiant heat sources
Mohamed Omri and Nicolas Galanis
- 277 A multiscale full-spectrum k-distribution method for radiative transfer in nonhomogeneous gas-soot mixtures with wall emission
Gopalendu Pal and Michael F Modest
- 282 Improved radiation calculations for hypersonic reentry flows using efficient databasing schemes
I. Sohn, D. A. Levin and M. F. Modest

- 283 Modeling of a turbulent ethylene/air jet flame using hybrid finite volume/Monte Carlo methods
Ranjan S. Mehta, Anquan Wang, Michael F. Modest and Daniel C. Haworth
- 285 Higher-order spherical harmonics to model radiation in direct numerical simulation of turbulent reacting flows
Kshitij V. Deshmukh, Michael F. Modest and Daniel C. Haworth
- 289 The efficient calculation of radiation heat transfer in anisotropically scattering media using the QL method
P. Hassanzadeh, G. D. Raithby and E. H. Chui
- 319 Analysis of the relevance of the filtered radiative transfer equation terms for large eddy simulation of turbulence-radiation interaction
M. Roger, P.J. Coelho and C.B. da Silva
- 346 Simulation of radiative heat transfer in a fluidized bed solar receiver by Monte Carlo Method
Arezki Bounaceur, Nicolas Meilhac, Mouna El Hafi and Jean-Jacques Bézian
- 392 Heat exchange in two-phase industrial processes
G. Guj, F. Stella, R. Camussi, S. Rinaldi, M. Iannuccelli, F. Tomassi, M. Giangi, Ferretti
- 393 Thermal and electrical behaviors of silicon photovoltaic cells with antireflection layers
Mohamed Amara, Rodolphe Vaillon and Christophe Ménézo

Solidification and Melting – Poster Session 1 – Monday 9.30 am – 11.30 am

- 131 Crystal growth of $\text{Ge}_{0.98}\text{Si}_{0.02}$ in the presence of convection due to the various gravity levels suppressed by rotating magnetic field (RMF) by utilizing traveling solvent method (TSM)
M.M. Shemirani, T.J. Jaber and M.Z. Saghir
- 150 Steady-state solidification of binary melts with a non-equilibrium mushy layer
D Alexandrov and I Alexandrova
- 195 Modelling and numerical simulation of stabilized ice slurry in plane plate heat exchanger: the thermal behaviour
Mohamed Naji El Boujaddaini, Philippe Haberschill, Abdelaziz Mimet, André Lallemand
- 200 Dynamics and solidification of metallic foams
Anthony M. Anderson, Lucien N. Brush, and Stephen H. Davis
- 201 Effective method for solution of difference equation systems and validation of numerical model of melt crystallization process
Vladimir Ginkin, Olga Ginkina, Svetlana Ganina, Kirill Chernov
- 209 Cluster fluid dynamics model of biocrystal growth
Vladimir Ginkin, Svetlana Ganina
- 214 Computational modeling of three-dimensional compressible filling and post-filling processes of injection molding
Mustafa Tutar and Ali Karakus
- 225 Molecular orientation and crystallization of composite fibres
J. I. Ramos
- 246 Numerical analysis of ice melting in a rectangular shell under periodic and linear temperature
A. Arid, T. Kousksou, Y. Zeraoui, A. Mimet and J.-P. Dumas
- 274 Study of heat transfer during solidification of phase change material inside capsules
M. Teggat and E. Mezaache
- 370 Modelling of thermo-solutal convective flow during directional solidification of a semiconductor
F. Mechighel, M. Kadja, M. EL Ganaoui and B. Pateyron
- 385 Heat and mass transfer modeling for understanding the behaviour of phase change material
Thierry Duforestel, Hassan Bouia and Emmanuelle Pons
- 387 Effect of shrinkage on Al – Si alloy solidification
Hongda Wang, M.S. Hamed and S. Shankar
- 391 Numerical simulation of heat and mass transfer during spray freeze drying process
Chi Sung Song, Chang-Dae Park and Chan Ho Song
- 406 Thermal modulation effects on thermosolutal convection in a vertical Bridgman cavity.
E. A. Semma, M. El Ganaoui, V. Timchenko and E. Leonardi
- 412 Evaporation of a suspended multicomponent droplet under convective conditions
George Strotos, Manolis Gavaises and George Bergeles

Turbulence – Poster Session 3 – Tuesday 9.30 am – 11.30 am

- 137 Numerical prediction of mass transfer in turbulent flow through a 90° bend
T. Asadi and M. Nasr Esfahany
- 139 Assessment of the sst and omega-based reynolds stress models for the prediction of flow and heat transfer in a square-section U-bend
Paul E. Geyer, David F. Fletcher and Brian S. Haynes
- 206 A dynamic SGS model for LES of turbulent premixed flames
S. R. Gubba, S. S. Ibrahim and W. Malalasekera
- 223 LES versus RANS modelling of turbulent mixing involving chemical reacting in a co-axial jet mixer
Andrei Chorny, Johann Turnow, Nikolai Kornev and Egon Hassel
- 226 Coherent structures in the turbulent channel flow with density variation
Elteyeb Eljack and Takeo Kajishima
- 249 Turbulent forced convection in a horizontal channel with rectangular obstacle
Annabelle Joulin, Yassine Cherif, Laurent Zalewski, Stéphane Lassue and Daniel Rousse
- 256 Numerical prediction of turbulent flow in porous media: Modified κ - ϵ model
N. Allouache and S. Chikh

- 257 Effect of turbulent heat flux models on prediction of film cooling characteristics
F. Bazdidi-Tehrani and M. Rajabi-Zargarabadi
- 291 A numerical study of flow and heat transfer in a turbulent jet impinging on a curved surface
Lyes Khezzar, Adra Benhacine and Zoubir Nemouchi
- 303 New advanced two-equation heat transfer model for complex turbulent thermal fields
H. Hattori and Y. Nagano
- 317 DNS analysis of heat and mass transfers in a droplet-laden turbulent jet
Z. Bouali, B. Delhom, K. Truffin, H. Meftah and J. Reveillon
- 340 Effect of droplet initial conditions on droplet evaporation in a turbulent environment at elevated ambient pressure and temperature conditions
Maher M. Abou Al-Sood and Madjid Birouk
- 379 Numerical simulation of turbulent forced convection in solar collector provided with thickness baffles and fins
Rachid Saim, Boumediène Benyoucef and Said Abboudi
- 401 Self-similar solution of turbulent boundary layer with injection
Micha Wolfshtein
- 407 Refined eddy viscosity schemes and large eddy simulations for ascending mixed convection flows
Amir Keshmiri, Yacine Addad, Mark A. Cotton, Dominique R. Laurence and Flavien Billard
- 411 A study of passive scalar dissipation rate in a variable density turbulent jet
Mériem Safer, Abdelhamid Bounif and Iskender Gokalp

Two-Phase Flow and Heat Transfer – Poster Session 1 – Monday 9.30 am – 11.30 am

- 101 Hydrodynamic and kinetic models of droplet heating and evaporation: Analysis and applications
Sergei Sazhin, Irina Shishkova, Sergey Martynov and Morgan Heikal
- 122 Stability of two-phase flow in parallel pipes with a common feed
Ludmila Pustyl'nik, Dvora Barnea and Yehuda Taitel
- 125 A numerical study on the heat transfer characteristics of a grooved vapor chamber for thermal spreaders
Zhongliang Liu, Ming Zhang, Guoyuan Ma and Shuiyuan Cheng
- 129 Modelling fluid flow, heat transfer and water condensation in a pressure cooker
Denis Flick, Richard Rocca, Christophe Doursat, Jean Vasseur and Gilles Trystram
- 151 Heat and mass transfer in gas-drops turbulent flow with separation and evaporation
M.A. Pakhomov and V.I. Terekhov
- 190 Numerical method for spherical bubble growth in superheated liquids
A. J. Robinson and F. Lesage
- 191 Phase change model for two-phase fluid flow based on the volume of fluid method
Bitan Shu, Frank Dammal and Peter Stephan
- 192 Study of heat transfer from an immersed bar in a simple batch bubble column by CFD
Rahbar Rahimi and Ali Valypoor Tayeby
- 198 Experimental study and mathematical modelling of thin layer drying of mentha viridis by using indirect solar dryer
B. Touati, B. Lips, B. Benyoucef, J. Virgone, A. Jamali and M. Kouhila
- 202 Influence of droplets heating manner to the sprayed liquid thermal state
Gintautas Miliauskas and Stasys Sinkunas
- 211 Growth and detachment of carbon dioxide bubbles on a horizontal porous surface with a uniform mass injection
Shong-Leih Lee and Wen-Bin Tien
- 222 Numerical simulation of heat transfer and thermo-erosion destruction of a blunt body in a supersonic dusty flow
T.V. Ershova, D.S. Mikhatulin, D.L. Reviznikov, A.V. Sposobin and V.V. Vinnikov
- 224 N-heptane spray evaporation and dispersion in turbulent flow within a complex geometry configuration
M. Chrigui, M. Hage, A. Dreizler, A. Sadiki, and J. Janicka
- 259 Two-phase flow and mass transfer within the diffusion layer of a proton exchange membrane fuel cell
S.B. Beale, D.H. Schwarz, M.E. Malin and D.B. Spalding
- 305 Heat and mass transfer in evaporating a turbulent liquid film falling along a vertical tube
Senhaji Saliha, Feddaoui M'barek, Mediouni Touria and Mir Rachid
- 306 Liquid film evaporation into a gas stream with combined heat and mass transfer along a saturated porous layer within a vertical flow channel
Feddaoui M'barek, Senhaji Saliha, Mediouni Touria and Mir Ahmed
- 311 Turbulent three dimensional two-phase flow modeling of air-coal mixture channels with movable shutters for regulation pulverized coal particles distribution
Rastko Jovanović, Bartosz Swiatkowski, Dejan Cvetinović, Predrag Stefanović, Zoran Marković and Zoran Pavlović
- 349 An analytical model of the Knudsen layer with thermal conduction
L. Pekker, M. Keidar and J.-L. Cambier
- 350 Simplified 2D thermo-mechanical modeling of splat formation in plasma spraying processes
K. Fataoui, B. Pateyron, M. El Ganaoui, M. Amara
- 364 Large eddy simulation of heat transfer and thermophoretic deposition of ultrafine particles in turbulent flow in a square duct
A.F. Shinn and S.P. Vanka
- 386 Combined heat and mass transfer with phase change in a vertical channel
Kassim Mohamed Aboudou and Brahim Benhamou
- 394 Modeling arc heating in twin-wire-arc spray systems
Amir Pourmousa, Javad Mostaghimi and Sanjeev Chandra
- 395 Numerical simulation of the liquid extraction from a stratified liquid-vapor zone using electrohydrodynamics

H. Sadek, J.S.Cotton and C.Y.Ching

- 408 Vaporization of liquid fuels droplets (n-alkanes) under heating effect
Abdelhamid Bounif, Habib Merouane and Iskender Gökalg

Verification and Validation – Poster Session 7 – Thursday 3 pm – 5 pm

- 194 Validation of the transport coefficients in dilute gases by direct simulation Monte Carlo
Djamel Omeiri
- 326 Wind tunnel experiments on pedestrian comfort and validation of CFD ‘virtual wind tunnel’ model
G.M. van Uffelen and W.D. Wormgoor
- 362 Manufactured solution for verification of the 3D thermalhydraulic SACATRI code
Meroun Ossama, Ahmed Al Mers and Tarek El Bardouni
- 397 Numerical and experimental analysis of the validation of the FJO theory
H. Barrutia, M. M. Bou-Ali, J. A. Madariaga and C. Santamaría