

**Day 1: Monday, 2<sup>nd</sup> September 2013**

| Monday 2 <sup>nd</sup> September 2013  |  |   |  |
|--|--|---|--|
| Session: 1a  | Mini, Micro & Nano 1   |   | Room: G.16   |
| Chair: Professor Khellil Sefiane, University of Edinburgh  |  |   |  |
| 09:40 – 10:00  | 10:00 – 10:20  | 10:20 – 10:40   | 10:40 – 11:00  |
| COMPARISON OF THEORY AND MEASUREMENTS FOR CONDENSATION IN MICROCHANNELS<br><br><i>Hua Sheng Wang, John W. Rose</i> | ASSESSMENT OF CORRELATION METHODS INTO FLOW BOILING HEAT TRANSFER IN PLANE AND PARALLEL MINI-CHANNEL HEAT SINKS<br><br><i>A.H. Raeisi, D.A. McNeil, P.A. Kew</i> | NUMERICAL SIMULATION OF MULTI-MATERIAL MICROCHANNEL REGENERATOR FOR MAGNETIC REFRIGERATOR/ HEAT PUMP<br><br><i>M.S. Kamran, J. Sun, H.S. Wang</i> | FLOW BOILING OF WATER IN THREE DIFFERENT HYDRAULIC DIAMETER RECTANGULAR MICROCHANNELS<br><br><i>Mirmanto, J.S. Lewis, T.G. Karayiannis</i> |

| Monday 2 <sup>nd</sup> September 2013   |   |   |   |
|---|---|---|---|
| Session: 1b   | Applications 1  |   | Room: G.34  |
| Chair: Professor Andrew Heyes, University of Leeds  |   |   |   |
| 09:40 – 10:00   | 10:00 – 10:20   | 10:20 – 10:40   | 10:40 – 11:00   |
| THERMAL FLUIDS: THE KEY TO IMPROVING THE ENERGY EFFICIENCY OF LARGE CHEMICAL SITES<br><br><i>G.T. Polley, M. Picon Nunez, E. Tamakloe</i> | HEAT LOSSES FROM A PILOT-SCALE COUNTER-CURRENT SPRAY DRYING TOWER<br><br><i>Muzammil Ali, Tariq Mahmud, Peter John Heggs, Mojtaba Ghadiri, Anne Davidson, Hossein Ahmadian, Luis Martindejuan, Dusan Djurdjevic, Andrew Bayly</i> | WORK PIECE TEMPERATURE DISTRIBUTION ANALYSIS WITH INVERSE HEAT TRANSFER METHOD IN MILLING<br><br><i>T.R. Güngör, A.T. Kuzu, M. Bakkal, M. Özdemir</i> | STEAM SPRAY FOR TEMPERATURE CONTROL IN UTILITY BOILERS, ADVANTAGES & DISADVANTAGES OF TRIFLUX OVER STEAM SPRAY, AN ANALYSIS<br><br><i>Vivek Asthana, Praveen Pandey</i> |

| Monday 2 <sup>nd</sup> September 2013   |   |   |  |
|---|---|---|--|
| Session: 1c   | Solar Systems   |   | Room: 119  |
| Chair: Dr. Ned Ekins-Daukes, Imperial College London  |   |   |  |
| 09:40 – 10:00   | 10:00 – 10:20   | 10:20 – 10:40   | 10:40 – 11:00  |
| AN ASSESSMENT OF SOLAR-THERMAL COLLECTOR DESIGNS FOR SMALL-SCALE COMBINED HEATING AND POWER APPLICATIONS IN THE UK<br><br><i>James Freeman, Christos N. Markides, Klaus Hellgardt</i> | NUMERICAL SIMULATION OF HEAT TRANSFER IN A DIRECT VOLUMETRIC ABSORPTION SOLAR RECEIVER<br><br><i>Ityona Amber, Tadhg S. O'Donovan</i> | A UK-BASED ASSESSMENT OF HYBRID PV/SOLAR-THERMAL SYSTEMS FOR DOMESTIC HEATING AND POWER<br><br><i>María Herrando, Christos N. Markides, Klaus Hellgardt</i> | SOLAR SPECTRUM DEPENDENT THERMAL MODEL FOR HCPV SYSTEMS<br><br><i>Marios Theristis, Georgios Arnaoutakis, Nabin Sarmah, Tapas K. Mallick, Tadhg S. O'Donovan</i> |

| Monday 2 <sup>nd</sup> September 2013  |   |  |  |
|--|---|--|--|
| Session: 2a  | Mini, Micro & Nano 2  |  | Room: G.16   |
| Chair: Professor Tassos Karayiannis, Brunel University   |   |  |  |
| 11:20 – 11:40  | 11:40 – 12:00   | 12:00 – 12:20  | 12:20 – 12:40  |
| INVESTIGATION OF LAMINAR AND TURBULENT CONVECTIVE HEAT TRANSFER OF AL <sub>2</sub> O <sub>3</sub> /WATER NANOFLUID<br><br><i>M. Ghanbarpour, H. Bitaraf Haghighi, R. Khodabandeh</i> | EXPERIMENTAL STUDY OF NANOFLUID EFFECT ON THE THERMAL PERFORMANCE OF SCREEN MESH HEAT PIPE<br><br><i>M. Ghanbarpour, N. Nikkam, R. Khodabandeh, M. Toprak</i> | CHARACTERIZATION OF THERMOPHYSICAL PROPERTIES OF TITANIUM OXIDE NANOFLUIDS<br><br><i>S.M.S. Murshed, F.J.V. Santos, C.A. Nieto de Castro</i> | INVESTIGATION INTO EFFECTIVE VISCOSITY AND ELECTRICAL CONDUCTIVITY OF $\gamma$ -AL <sub>2</sub> O <sub>3</sub> -GLYCEROL NANOFLUIDS IN EINSTEIN CONCENTRATION REGIME<br><br><i>S.A. Adio, M. Sharifpur, J.P. Meyer</i> |

| Monday 2 <sup>nd</sup> September 2013   |   |   |   |
|---|---|---|---|
| Session: 2b   | Applications 2  |   | Room: G.34  |
| Chair: Professor Joe Quarini, University of Bristol   |   |   |   |
| 11:20 – 11:40   | 11:40 – 12:00   | 12:00 – 12:20   | 12:20 – 12:40   |
| INVESTIGATION OF FLOW AND PRESSURE DROP IN A PLAIN JACKET OF A STIRRED TANK REACTOR<br><br><i>Erik Bentham, Peter Heggs, Tariq Mahmud</i> | NUMERICAL SIMULATION METHOD OF HEAT AND MASS TRANSFER IN BLAST FURNACE SHAFT WITH LAYERED BURDEN<br><br><i>Dong Fu, Md. Taifur Rahman, Yan Chen, Yongfu Zhao, John D'Alessio, Kyle J. Ferron, Chenn Q. Zhou</i> | DESIGN OF HEAT RECOVERY AND WATER DISTRIBUTION SYSTEMS FOR AQUEOUS PROCESSES UTILISING A HOT WELL<br><br><i>G.T. Polley, M. Picon Nunez, J. Marciel</i> | PREDICTIONS OF HEAT TRANSFER AND CIRCULATION IN DIFFERENTIALLY HEATED LIQUID COLUMNS WITH APPLICATIONS TO LOW PRESSURE EVAPORATORS<br><br><i>Jujar S. Panesar, Peter J. Heggs, Alan D. Burns, Lin Ma, Stephen J. Graham</i> |

| Monday 2 <sup>nd</sup> September 2013   |   |   |  |
|---|---|---|--|
| Session: 2c   | Building Ventilation & Thermal Comfort  |   | Room: 119  |
| Chair: Professor Peter Childs, Imperial College London  |   |   |  |
| 11:20 – 11:40   | 11:40 – 12:00   | 12:00 – 12:20   | 12:20 – 12:40  |
| PASSIVE VENTILATION OF BUILDINGS WITH HEAT RECOVERY (PVHR)<br><br><i>T. Lipinski, Szu-Hung Lee, P.R.N. Childs</i> | REVIEW ON THERMAL PERFORMANCE OF GREEN ROOFS<br><br><i>V. Kumar, A.M. Mahalle</i> | A NUMERICAL STUDY OF THERMAL COMFORT IN AN ATRIUM SPACE WITH A HYBRID VENTILATION SYSTEM<br><br><i>Shafqat Hussain, Patrick H. Oosthuizen</i> | NUMERICAL STUDY OF THE EFFECT OF VENT POSITIONING ON THE NATURAL CONVECTIVE HEAT TRANSFER RATE FROM A HORIZONTAL ISOTHERMAL HEATED SURFACE MOUNTED IN A FLAT ADIABATIC BASE AND SURROUNDED BY A PROTECTIVE SURFACE<br><br><i>Patrick H. Oosthuizen, Jane T. Paul</i> |

| Monday 2 <sup>nd</sup> September 2013  |   |  |               |
|--|---|--|---------------|
| Session: 3a  | Mini, Micro & Nano 3  |  | Room: G.16    |
| Chair: Professor Dongsheng Wen, University of Leeds  |   |  |               |
| 14:40 – 15:00  | 15:00 – 15:20   | 15:20 – 15:40  | 15:40 – 16:00 |
| INVESTIGATING HEAT TRANSFER IN ABSORBER PLATES WITH MINICHANNELS<br><br><i>M.A. Oyinlola, G.S.F. Shire</i> | INVESTIGATION OF HEAT TRANSFER ENHANCEMENT IN MICROCHANNELS USING NANOFLUIDS<br><br><i>G. Duursma, J. Skilling, K. Sefiane, A. Dehaene, S. Harmand, Y. Wang</i> | HARNESSING STRANDED AND FLARED ASSOCIATED NATURAL GAS: THE ROLE OF HEAT TRANSFER IN COMBINED MICRO-CHANNEL REACTORS/HEAT EXCHANGERS<br><br><i>A.O. Odunsi, T.S. O'Donovan, D.A. Reay</i> |               |

| Monday 2 <sup>nd</sup> September 2013   |   |   |  |
|---|---|---|--|
| Session: 3b   | Applications 3  |   | Room: G.34   |
| Chair: Dr. Ned Ekins-Daukes, Imperial College London  |   |   |  |
| 14:40 – 15:00   | 15:00 – 15:20   | 15:20 – 15:40   | 15:40 – 16:00  |
| STUDY OF HEAT TRANSFER PROCESS FROM A CIRCUIT BOARD USING HEAT PIPES<br><br><i>Joaquin Capablo, Nelson Garcia-Palanco, John Doyle</i> | INVESTIGATING MECHANISMS FOR AN EVAPORATIVE COOLED IN-WHEEL AFPM MACHINE<br><br><i>R. Camilleri, M.D. McCulloch</i> | OIL-IMMERSION DIRECT-LIQUID-COOLING OF PERMANENT-MAGNET SYNCHRONOUS MOTOR<br><br><i>Maria Polikarpova, Pavel Ponomarev, Juha Pyrhönen</i> | INVESTIGATION OF VORTEX PROMOTER'S EFFECTS ON HEAT TRANSFER FROM HEATED ELECTRONIC COMPONENTS USING IMPINGING JETS<br><br><i>Mustafa Kılıç, Tamer Çalışır, Şenol Başkaya</i> |

| Monday 2 <sup>nd</sup> September 2013   |   |   |   |
|---|---|---|---|
| Session: 3c   | Thermodynamics 1  |   | Room: 119   |
| Chair: Dr. Alexander White, University of Cambridge   |   |   |   |
| 14:40 – 15:00   | 15:00 – 15:20   | 15:20 – 15:40   | 15:40 – 16:00   |
| AN EXTERNAL COMBUSTION HEAT ENGINE WITH PHASE-CHANGE WORKING FLUID<br><br><i>Aleksandr Samoilov, Valeriy Kirillov, Nikolay Kuzin, Aleksandr Kronberg, Maksim Gloushenkov, Aly Taleb, Christos N. Markides</i> | OPTIMISING THE NON-INERTIVE-FEEDBACK THERMOFLUIDIC ENGINE FOR THE CONVERSION OF LOW-GRADE HEAT TO PUMPING WORK<br><br><i>Karthikeyan Palanisamy, Christos N. Markides</i> | AN ASSESSMENT OF WORKING-FLUID MIXTURES FOR USE IN ORGANIC RANKINE CYCLES FOR WASTE-HEAT RECOVERY USING SAFT-VR<br><br><i>Oyeniya A. Oyewunmi, Aly I. Taleb, Andrew J. Haslam, Christos N. Markides</i> | ASSESSMENT OF WASTED HEAT RECOVERY OPTIONS IN PASSENGER CAR APPLICATIONS BY VARIOUS RANKINE CYCLES<br><br><i>P. Heidrich, T. Krisch</i> |

| Monday 2 <sup>nd</sup> September 2013   |   |   |   |
|---|---|---|---|
| Session: 4a   | Mini, Micro & Nano 4  |   | Room: G.16  |
| Chair: Professor Dongsheng Wen, University of Leeds   |   |   |   |
| 16:20 – 16:40   | 16:40 – 17:00   | 17:00 – 17:20   | 17:20 – 17:40   |
| EXPERIMENTAL MEASUREMENTS OF R134A FLOW BOILING INSIDE A 3.4 MM ID MICROFIN TUBE<br><br><i>Simone Mancin, Andrea Diani, Claudio Zilio, Luisa Rossetto</i> | FLOW BOILING OF R600A IN A UNIFORMLY HEATED VERTICAL MINICHANNEL<br><br><i>Zahid Anwar, Björn Palm, Rahmatollah Khodabandeh</i> | DRYOUT CHARACTERISTICS OF R600A IN A UNIFORMLY HEATED VERTICAL MINICHANNEL<br><br><i>Zahid Anwar, Björn Palm, Rahmatollah Khodabandeh</i> | COMPARATIVE STUDY ON THERMAL CONDUCTIVITY OF AL <sub>2</sub> O <sub>3</sub> AND TiO <sub>2</sub> NANOFUIDS<br><br><i>Rohit S. Khedkar, Shriram S. Sonawane, Kailas L. Wasewar</i> |

| Monday 2 <sup>nd</sup> September 2013   |  |   |  |
|---|--|---|--|
| Session: 4b   | Electric & Magnetic Effects  |   | Room: G.34   |
| Chair: Dr. Klaus Hellgardt, Imperial College London   |  |   |  |
| 16:20 – 16:40   | 16:40 – 17:00  | 17:00 – 17:20   | 17:20 – 17:40  |
| OPTIMIZATION OF PASSIVE AND ACTIVE MAGNETOCALORIC REGENERATORS VIA ENTROPY GENERATION MINIMIZATION<br><br><i>Paulo V. Trevizoli, Diego P. Alcalde, Jader R. Barbosa Jr.</i> | EXPERIMENTAL STUDY ON THERMOELECTRIC GENERATOR PERFORMANCE APPLIED TO A COMBI BOILER<br><br><i>M. Zeki Yilmazoglu, Salih Karaaslan, Tamer Calisir, Turgut O. Yilmaz, Senol Baskaya</i> | ANALYTIC OSCILLATORY MHD FLOW OF A MAXWELL FLUID THROUGH A POROUS CHANNEL CONSIDERING ION-SLIP AND HALL EFFECTS<br><br><i>Alireza Taklifi, Abbas Aliabadi</i> | THERMAL RECTIFICATION BY WAY OF SOLID STATE TRANSITIONS<br><br><i>Karla I. Garcia Garcia, Josue J. Martinez Flores, Jaime Alvarez Quintana</i> |

| Monday 2 <sup>nd</sup> September 2013   |   |  |   |
|---|---|--|---|
| Session: 4c   | Thermodynamics 2  |  | Room: 119   |
| Chair: Dr. Christos Markides, Imperial College London   |   |  |   |
| 16:20 – 16:40   | 16:40 – 17:00   | 17:00 – 17:20  | 17:20 – 17:40   |
| HEAT TRANSFER AT SUPERCRITICAL PRESSURES IN POWER-ENGINEERING APPLICATIONS<br><br><i>I. Pioro, S. Mokry, S. Gupta, Eu. Saltanov, A. Dragunov, Sh. Draper, D. Mann</i> | A SPRAY-BASED HEAT SINK INTEGRATED WITH A COMPACT VAPOR COMPRESSION COOLING SYSTEM FOR REMOVAL OF HIGH HEAT FLUXES<br><br><i>Pablo A. de Oliveira, Jader R. Barbosa Jr.</i> | DESIGN AND ANALYSIS OF A THERMALLY DRIVEN THERMOACOUSTIC AIR CONDITIONER FOR LOW GRADE HEAT RECOVERY<br><br><i>Zhibin Yu</i> | A PARAMETRIC STUDY AND OPTIMISATION OF LOSSES IN PACKED BED THERMAL RESERVOIRS FOR ELECTRICAL ENERGY STORAGE SYSTEMS<br><br><i>Joshua D. McTigue, Alexander J. White, Geoffrey T. Parks</i> |

## Day 2: Tuesday, 3<sup>rd</sup> September 2013

| <i>Tuesday 3<sup>rd</sup> September 2013</i>   |  |  |   |
|--|--|--|---|
| <b>Session: 5a</b>   | <b>Fluid Mechanics 1</b>   |  | <b>Room: G.16</b>   |
| <i>Chair: Professor Derek Jackson, University of Manchester</i>  |  |  |   |
| 09:40 – 10:00  | 10:00 – 10:20  | 10:20 – 10:40  | 10:40 – 11:00   |
| <p>OPTIMISATION OF MULTIPLE-ARRAYS OF CYLINDRICAL PIN-FINS FOR MINIMUM THERMAL RESISTANCE</p> <p><i>Olabode T. Olakoyejo, Surajudeen O. Obayopo, Lauber Martins, Josua. P. Meyer</i></p> | <p>MICROSTRUCTURE ANALYSIS AND HEAT TRANSFER MEASUREMENTS ON A DRAWN STEEL TUBE</p> <p><i>B.C.F. Müller, S. Skusa, A. Luke</i></p> | <p>NUMERICAL SIMULATION OF LIQUID-GAS TWO PHASE-FLOW IN SINTERED WICK WITH FACE-CENTRED STRUCTURE BY THE ATHERMAL LATTICE BOLTZMANN METHOD</p> <p><i>Tomohiko Yamaguchi, Qian Wang, Yuying Yan</i></p> | <p>SINGLE-PHASE LAMINAR FLOW HEAT TRANSFER FROM CONFINED ELECTRON BEAM ENHANCED SURFACES</p> <p><i>A. Ferhati, T.G. Karayiannis, J.S. Lewis, R.J. McGlen, D.A. Reay</i></p> |

| <i>Tuesday 3<sup>rd</sup> September 2013</i>   |  |  |  |
|--|--|--|--|
| <b>Session: 5b</b>   | <b>Heat Exchangers 1</b>   |  | <b>Room: G.34</b>  |
| <i>Chair: Dr. Francesco Coletti, Hexxcell Ltd. &amp; UNIHEAT</i>   |  |  |  |
| 09:40 – 10:00  | 10:00 – 10:20  | 10:20 – 10:40  | 10:40 – 11:00  |
| <p>HEIGHT INFLUENCE ON THERMAL AND HYDRAULIC PERFORMANCES FOR A WAVY AIR FIN IN A BRAZED ALUMINUM PLATE AND BAR HEAT EXCHANGER</p> <p><i>Vlad Marțian, Mihai Nagi, Septimiu Albețel, Marius Sucilă</i></p> | <p>PERFORMANCE EVALUATION OF PERFORATED PLATE MATRIX HEAT EXCHANGER WITH VARIOUS PERFORATION GEOMETRY</p> <p><i>K. Krishnakumar, Anish K. John</i></p> | <p>EFFECT OF AMBIENT HEAT-IN-LEAK ON A THREE-FLUID CRYOGENIC HEAT EXCHANGER WITH TWO THERMAL COMMUNICATIONS</p> <p><i>V. Krishna, Spoorthi S., Pradeep G. Hegde, K.N. Seetharamu</i></p> | <p>THE USE OF ICE PIGGING TECHNOLOGY TO CLEAN SHELL AND TUBE EXCHANGERS</p> <p><i>A. Hales, G. Quarini, D. Ash, E. Lucas, D. McBryde</i></p> |

| <i>Tuesday 3<sup>rd</sup> September 2013</i>  |   |  |  |
|---|---|--|--|
| <b>Session: 5c</b>  | <b>Phase Change 1</b>   |  | <b>Room: 119</b>   |
| <i>Chair: Professor Peter Heggs, University of Leeds</i>  |   |  |  |
| 09:40 – 10:00   | 10:00 – 10:20   | 10:20 – 10:40  | 10:40 – 11:00  |
| <p>EFFECTS OF VAPOUR VELOCITY AND ETHANOL CONCENTRATION ON MARANGONI CONDENSATION OF STEAM-ETHANOL MIXTURES ON A HORIZONTAL TUBE BANK</p> <p><i>Hassan Ali, Adrian Briggs, John W. Rose, Hua Sheng Wang</i></p> | <p>MODELLING THE PHASE CHANGE IN THE EVAPORATOR OF A CAPILLARY PUMPED LOOP</p> <p><i>Gaurav Tomar</i></p> | <p>ON THE LIFETIME OF A FLUID DROPLET ON A SOLID SUBSTRATE IN A MIXED MODE OF EVAPORATION</p> <p><i>Stephen K. Wilson, Jutta M. Stauber, Brian R. Duffy, Khellil Sefiane</i></p> | <p>MODELLING CONVECTIVE HEAT TRANSFER IN A PHASE CHANGE MOVING SLURRY</p> <p><i>G. Quarini, P. Kew, A. Hales, E. Lucas, D. McBryde, D. Ash</i></p> |

| Tuesday 3 <sup>rd</sup> September 2013   |   |   |   |
|--|---|---|---|
| Session: 6a  | Fluid Mechanics 2   |   | Room: G.16  |
| Chair: Dr. Christos Markides, Imperial College London  |   |   |   |
| 11:20 – 11:40  | 11:40 – 12:00   | 12:00 – 12:20   | 12:20 – 12:40   |
| EFFECTS OF THERMAL EXPANSION AND COMPRESSIBILITY ON TURBULENT FORCED CONVECTION HEAT TRANSFER TO GASES FLOWING IN TUBES<br><i>J.D. Jackson</i> | INFLUENCE OF THE SURFACE PROPERTIES ON THE ABSORPTION PROCESS OF LIBR AND WATER ON HORIZONTAL TUBES<br><i>M. Olbricht, S. Scholl, A. Luke</i> | THE EFFECTS OF STROKE LENGTH AND REYNOLDS NUMBER ON HEAT TRANSFER TO A SYNTHETIC AIR JET<br><i>Daniel I. Rylatt, Tadhg S. O'Donovan</i> | A NUMERICAL STUDY OF LAMINAR AND TURBULENT NATURAL CONVECTIVE FLOW THROUGH AN INCLINED SYMMETRICALLY HEATED CHANNEL<br><i>Patrick H. Oosthuizen</i> |

| Tuesday 3 <sup>rd</sup> September 2013  |  |  |  |
|---|--|--|--|
| Session: 6b   | Heat Exchangers 2  |  | Room: G.34   |
| Chair: Dr. Francesco Coletti, Hexxcell Ltd. & UNIHEAT   |  |  |  |
| 11:20 – 11:40   | 11:40 – 12:00  | 12:00 – 12:20  | 12:20 – 12:40  |
| IMPROVEMENT IN PERFORMANCE OF SECONDARY HEAT EXCHANGER FOR GAS WATER HEATER BY USING THIN TUBES<br><i>Junpei Yamashita, Yoshio Utaka, Masakazu Kobayashi, Yasuhiro Sano</i> | DEVELOPMENT OF HEAT EXCHANGER PARAMETER PLOTS FOR CONDENSERS, VAPORISERS AND SINGLE PHASE EXCHANGERS<br><i>G.T. Polley</i> | DEVELOPMENT OF HEAT EXCHANGERS FOR USE AS REPLACEMENT PLATES IN DISTILLATION COLUMNS: A PRELIMINARY STUDY<br><i>Graham Thomas Polley, Jose Manuel Riesco Ávila, Antonio Alberto Aguilar Moreno</i> | 2D NUMERICAL SIMULATION OF HEAT TRANSFER AND PRESSURE DROP IN V-CORRUGATED CHANNEL WITH DIFFERENT PHASE SHIFTS<br><i>Mohamed Sakr Fadl</i> |

| Tuesday 3 <sup>rd</sup> September 2013   |   |  |   |
|--|---|--|---|
| Session: 6c  | Phase Change 2  |  | Room: 119   |
| Chair: Dr. Jader Barbosa, Federal University Santa Catarina  |   |  |   |
| 11:20 – 11:40  | 11:40 – 12:00   | 12:00 – 12:20  | 12:20 – 12:40   |
| THREE-DIMENSIONAL MARANGONI CELL IN SELF-INDUCED EVAPORATING COOLING UNVEILED BY $\mu$ -PARTICLE IMAGE VELOCIMETRY AND DIGITAL HOLOGRAPHIC MICROSCOPY<br><i>Cosimo Buffone, Christophe Minetti</i> | NUMERICAL ANALYSIS OF NONEQUILIBRIUM PHASE CHANGE PHENOMENA BETWEEN TWO-LIQUID SLABS WITH DIFFERENT TEMPERATURE<br><i>Misaki Kon, Kazumichi Kobayashi, Masao Watanabe</i> | FLOW BOILING PATTERNS IN A 1.1 MM DIAMETER TUBE WITH DIFFERENT REFRIGERANTS<br><i>E.A. Pike-Wilson, T.G. Karayiannis</i> | A COMPARISON OF SHELL-SIDE BOILING AT ATMOSPHERIC AND VACUUM PRESSURES<br><i>D.A. McNeil, B.M. Burnside, D.I. Rylatt, E. Elsaye, S. Baker, C. Robertson</i> |

| Tuesday 3 <sup>rd</sup> September 2013  |  |  |   |
|---|--|--|---|
| Session: 7a   | Fluid Mechanics 3  |  | Room: G.16  |
| Chair: Professor Peter Childs, Imperial College London  |  |  |   |
| 14:40 – 15:00   | 15:00 – 15:20  | 15:20 – 15:40  | 15:40 – 16:00   |
| MEASUREMENT OF LIQUID FILM THICKNESS FORMED BETWEEN COLLIDING TWIN BUBBLES BY USING THE LASER EXTINCTION METHOD<br><br><i>Takayuki Morokuma, Yoshio Utaka</i> | CONVECTION FLOW RECOVERY IN A PENDANT DROPLET<br><br><i>Bin He, Fei Duan</i> | LARGE EDDY SIMULATION OF TRANSITION OF FREE CONVECTION FLOW OVER AN INCLINED UPWARD FACING HEATED PLATE<br><br><i>Ali S. Alzwayi, Manosh C. Paul</i> | IMPULSIVELY STARTED CHANNEL FLOW: SOLUTION OF ENERGY EQUATION WITH VISCOUS DISSIPATION<br><br><i>Avinash Nayak, Debopam Das</i> |

| Tuesday 3 <sup>rd</sup> September 2013   |   |  |  |
|--|---|--|--|
| Session: 7b  | Porous Materials 1  |  | Room: G.34   |
| Chair: Professor Andrew Heyes, University of Leeds   |   |  |  |
| 14:40 – 15:00  | 15:00 – 15:20   | 15:20 – 15:40  | 15:40 – 16:00  |
| ANALYTICAL ASSESSMENT OF LOCAL THERMAL EQUILIBRIUM ASSUMPTION IN A CHANNEL PARTIALLY FILLED WITH A POROUS MATERIAL<br><br><i>Yasser Mahmoudi, Nader Karimi</i> | SCALING HEAT AND MASS FLOW THROUGH POROUS MEDIA DURING PYROLYSIS<br><br><i>Julien Maes, Ann Mugeridge, Matthew Jackson, Michel Quintard, Alexandre Lapene</i> | A NEW USE OF DIFFUSION THEORY TO MODEL THE NON-LINEAR DRYING CHARACTERISTICS OF POROUS TYPE FABRIC<br><br><i>Ralph W.L. Ip</i> | EFFECT OF POROUS INSERT CONFIGURATION ON HEAT TRANSFER IN A HEAT EXCHANGER<br><br><i>Yasser Mahmoudi, Nader Karimi</i> |

| Tuesday 3 <sup>rd</sup> September 2013  |   |  |               |
|---|---|--|---------------|
| Session: 7c   | Combustion & Reaction   |  | Room: 119     |
| Chair: Dr. Guillermo Rein, Imperial College London  |   |  |               |
| 14:40 – 15:00   | 15:00 – 15:20   | 15:20 – 15:40  | 15:40 – 16:00 |
| EXPERIMENTS IN CONSTANT VOLUME COMBUSTION<br><br><i>P. Sphicas, Y. Hardalupas, W. Jones</i> | DEVELOPMENT OF TURBULENT NONPREMIXED COMBUSTION MODEL FOR VORTEX METHOD WITH DETAILED CHEMICAL MECHANISM<br><br><i>Kazui Fukumoto, Hung Vu Bui, Yoshifumi Ogami</i> | NUMERICAL STUDY OF HETEROGENEOUS COMBUSTION PROCESSES OF SOLID FUELS<br><br><i>Blaid Alganash, Manosh C. Paul, Ian A. Watson</i> |               |

| Tuesday 3 <sup>rd</sup> September 2013  |   |  |   |
|---|---|--|---|
| Session: 8a   | Heat Storage  |  | Room: G.16  |
| Chair: Dr. Klaus Hellgardt, Imperial College London   |   |  |   |
| 16:20 – 16:40   | 16:40 – 17:00   | 17:00 – 17:20  | 17:20 – 17:40   |
| INVESTIGATION OF A THERMAL STORAGE SYSTEM BASED ON PHASE CHANGE MATERIAL: HEAT TRANSFER AND PERFORMANCE CHARACTERISATION<br><br><i>Ajay Gupta, Richard Mathie, Christos N. Markides</i> | EXPERIMENTAL INVESTIGATION OF THERMAL BEHAVIOUR OF PHASE CHANGE MATERIAL IN A THERMAL STORE<br><br><i>Bashir Jimoh, G.S.F Shire</i> | THERMAL STABILITY OF A BINARY MIXTURE OF $\text{Li}_2\text{CO}_3$ AND $\text{K}_2\text{CO}_3$ FOR USE AS A STORAGE MEDIUM IN THERMAL ENERGY SYSTEMS<br><br><i>Salama Omran, Peter Heggs, Yulong Ding</i> | THERMAL CONDUCTIVITY ENHANCEMENT OF PHASE CHANGE MATERIALS FOR THERMAL ENERGY STORAGE IN AUTOMOTIVE: EXPERIMENTAL AND NUMERICAL INVESTIGATIONS<br><br><i>Julien Tissot, Michael Lissner, Kamel Azzouz, Georges de Pelsemaeker</i> |

| Tuesday 3 <sup>rd</sup> September 2013  |  |   |   |
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| Session: 8b   | Porous Materials 2   |   | Room: G.34  |
| Chair: Professor Khellil Sefiane, University of Edinburgh   |  |   |   |
| 16:20 – 16:40   | 16:40 – 17:00  | 17:00 – 17:20   | 17:20 – 17:40   |
| EXPERIMENTAL AND COMPUTATIONAL STUDIES ON TRANSIENT HEAT TRANSFER AND FLUID FLOW IN A PACKED BED<br><br><i>M. Ezhilarasu, A.S. Krishnan</i> | HEAT SINK SELECTION THROUGH ANALYTICAL HIERARCHICAL PROCESSING AND SIMULATION FOR FOAM HEAT SINK<br><br><i>A.M. Mahalle, P.N. Belkhode</i> | TOWARDS THE MICROSTRUCTURAL OPTIMISATION OF SOLID OXIDE FUEL CELL ELECTRODES<br><br><i>Masashi Kishimoto, Hiroshi Iwai, Hideo Yoshida, Nigel P. Brandon</i> | STEAM METHANE REFORMING ON SOFC POROUS ANODE CONSIDERING ITS MICROSTRUCTURE<br><br><i>Hiroshi Iwai, Tadamasu Takahashi, Motohiro Saito, Hideo Yoshida</i> |

| Tuesday 3 <sup>rd</sup> September 2013  |   |   |               |
|---|---|---|---------------|
| Session: 8c   | Fundamentals  |   | Room: 119     |
| Chair: Dr. Guillermo Rein, Imperial College London  |   |   |               |
| 16:20 – 16:40   | 16:40 – 17:00   | 17:00 – 17:20   | 17:20 – 17:40 |
| FIN EFFICIENCY OF A FOUR SIDED PYRAMIDAL FIN WITH EQUILATERAL SQUARE CROSS-SECTIONAL AREA<br><br><i>Richard G. Carranza</i> | EFFECT OF THERMOCOUPLE ELECTRICAL INSULATION ON SURFACE TEMPERATURE MEASUREMENT<br><br><i>Ahmed A.Y. Al-Waaly, Manosh C. Paul, Phillip Dobson</i> | OPTICAL THERMAL HISTORY SENSING VIA OXIDATION OF DIVALENT RARE EARTH ION BASED PHOSPHORS SYNTHESIZED BY THE SOL-GEL PROCESS<br><br><i>Alvarov Yañez Gonzalez, Stephen Skinner, Frank Beyrau, Andrew Heyes</i> |               |