# *Program of ISTP-24, 2013*

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| **Friday 1 November, 2013** | | | | | |
| 16:00 | Registration Open | | | | |
| 17:30 – 19:30 | Welcome Reception | | | | |
| **Saturday 2 November, 2013** | | | | | |
| 8:00 | Registration Open | | | | |
| 8:30 | Welcome and Formal Opening<br>Welcome Speech by Conference Chair, Prof. Koichi Susuki, Tokyo University of Science-Yamaguchi | | | | |
| 8:40 | Opening Speech by President of Pacific Center of Thermal Fluid Engineering, Prof. Sadanari Mochizuki | | | | |
| 8:50 - 9:40 | **Plenary Lecture 1** : Prof. Hiroshi Kawamura, Tokyo University of Science, Suwa<br>*Marangoni Convection Experiment on the International Space Station* | | | | |
| 9:50 - 10:40 | **Plenary Lecture 2** : Prof. Sang Yong Lee, Korea Advanced Institute of Science and Technology (KAIST)<br>*Drop Impinging Behavior on Structured Surfaces* | | | | |
| | *Coffee Break* | | | | |
| 11:00 - 11:50 | **Plenary Lecture 3** : Prof. Harald Raupenstrauch, Montanuniversität Leoben<br>*Mathematical Modeling of High Temperature Gas/Solid Reactors and Application to Recycling Processes* | | | | |
| 11:50 - 13:10 | *Lunch on the 3rd Floor of ANA Crowne Hotel (Next to the plenary lecture room)* | | | | |
| 13:20 | Departure Time of a Free Shuttle Bus to TUSY<br>* All the participants have to move to TUSY by a free shuttle bus from ANA Crowne Plaza Ube. | | | | |
| Saturday 2<br>14:00 - 15:20 | **A** | **B** | **C** | **D** | **E** |
| | | Heat and Mass Transfer I | Thermal-Fluids Machinery | Experimental & Computational Fluid Dynamics I | Transport in Porous Media |
| | | *Chair: K. Fushinobu* | *Chair: T. Hatakeyama* | *Chair: Y. Oda* | *Chair: K. Ichimiya* |

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| | | STUDY OF THERMOPHORETIC DEPOSITION OF ENGINE EMISSIONS IN A PIPE FLOW<br>*S. S. Bhusnoor, U.V. Bhandarkar, V. Sethi* | PERFORMANCE EVALUATION OF A MULTISTAGE THERMOACOUSTIC ENGINE<br>*S. Fukuchi, H. Hatori, T. Biwa* | NUMERICAL ANALYSIS OF AIR FLOW PAST THE 2415-3S AIRFOIL FOR AN UNMANNED AERIAL VEHICLE WITH INTERNAL PROPULSION SYSTEM<br>*L. Velázquez-Araque, Luis. D. Mendoza, Jesús. Casanova, J. Nožička* | IMPINGING JET HEAT TRANSFER OF AN OPEN-CELLULAR POROUS HEAT SINK BY A CIRCULAR NOZZLE WITH A FLANGE<br>*S. Saito, M. Iwamoto* |
| | | ESTIMATING AIRFLOW TURBULENCE SCALES FROM GAS TRACER DATA<br>*R. Mckibbin, A. Harris* | BASIC STUDY ON DISCHARGE FLOW CHARACTERISTICS OF ROLLER TUBE PUMP<br>*K. Sato, J. Suzuki, K. Hirose, T. Fukue, T. Hashimot, S. Akitomi* | NUMERICAL PREDICTION OF IMPINGING JET HEAT TRANSFER IN A FAIRING WITH CURVED CHANNEL<br>*Chen Yan, Zhu Hui-Ren* | FLOW CHANNELS WITH PARTIALLY FILLED POROUS MEDIA<br>*A. Nouri-Borujerdi* |
| | | HUNTING RARE-EARTH METAL IONS WITH SELF-PROPELLED DROPLET WITH PH-RESPONSIVE FUNCTION<br>*K. Tani, H. Nakata, T. Ban, Y. Okano* | APPLICATION OF A HIGH-ORDER LES TURBULENT MODEL TO STUDY TRANSITIONAL HEAT TRANSFER CHARACTERISTICS OVER TURBINE VANE SURFACE<br>*D. Biswas, A. Kitoh* | FORCED CONVECTION IN A LOCAL HEATED BLUFF BODY NEAR A WALL<br>*K. Ryu, K.S. Lee* | NUMERICAL ANALYSIS OF WASTE HEAT CASCADE UTILIZATION IN SINTER COOLER<br>*Y. Liu, J. Yang, J. Wang, Z.L. Heng, Q.W. Wang* |
| | | EFFECT OF HETEROGENEITY OF POROUS MEDIA ON GAS PERMEATION AND ENTRAPMENT<br>*Yohei Mikami, Yoshihiro Deguchi, Tetsuya Suekane* | NUMERICAL INVESTIGATION OF PERFORMANCE PARAMETERS OF VERY SMALL JET ENGINE COMBUSTORS<br>*D. Hirndorf, M. E. Kügler, J. Heidenfelder , A. Hupfer* | EFFECTS OF MACH NUMBER ON SKIN TEMPERATURE AND IR RADIATION OF SUPERSONIC AIRCRAFT<br>*Jong Hyun Cha, Tae Hwan Kim, Ji Yeol Bae, Hyung Hee Cho, Dae Yoon Jung* | EXPERIMENTS ON THERMOACOUSTIC PROPERTIES OF STACKED MESH SCREENS<br>*S.H. Hsu, T. Biwa* |
| | *Coffee Break on 2nd floor* | | | | |
| Saturday 2<br>15:40 - 17:20 | **A** | **B** | **C** | **D** | **E** |
| | Boiling and Multi-Phase Flow I | Heat and Mass Transfer II | Visualization, Imaging Techniques | Experimental & Computational Fluid Dynamics II | Heat Exchangers |
| | *Chair: I. Ueno* | *Chair: T. Ohara* | *Chair: Y. Deguchi* | *Chair: R. Mckibbin* | *Chair: Y. Koito* |
| | THE STUDY OF THE VAPOR FILM FORMED UNDER THE BOTTOM SURFACE OF THE VERTICAL FINITE-LENGTH CYLINDER<br>*K. Toyoda* | ELECTROPORATION OF DERMATOMED SKIN – EX VIVO EXPERIMENTS AND A NUMERICAL MODEL<br>*Barbara Zorec, Sid Becker, Damijan Miklavčič, Nataša Pavšelj* | ON SIMPLE VISUALIZATION METHOD FOR TEMPERATURE AND FLOW FIELDS OF HOT AIR USING THERMOGRAPHY AND MESH SCREEN<br>*T. Tomimura, D. Ishizaki, Y. Koito* | INVESTIGATION AND IMPROVEMENT OF FLOW UNIFORMITY FOR HEAT EXCHANGER<br>*D. Kim, G. Jin, K-S. Lee* | NUMERICAL STUDY ON HEAT TRANSFER ENHANCEMENT OF VORTEX GENERATOR IN A RECTANGULAR CHANNEL<br>*Y. Murakami, I. Honda, O. Kawanami, M. Iwasaki, J. Hara* |
| | HEAT TRANSFER CHARACTERISTICS DUE TO THE EVAPORATION AND BOILING OF THIN LIQUID FILM IN THE PRESENCE OF CO-CURRENT GAS FLOW<br>*S. Kiuchi, T. Hirokawa, T. Hayashida, Y. Shinmoto, M. Murozono, H. Ohta* | EFFECT OF EW OF IONOMER ON THE OXYGEN TRANSPORT RESISTANCE IN THE CATALYST LAYER OF PEFC<br>*Thang P. Nguyen, Y. Ono, K. Fushinobu* | 3D-3C PIV METHOD BY USING W-SHAPED LIGHT SHEET<br>*S.Funatani, T.Takeda* | INFLUENZA INFECTION SIMULATION IN A CROWDED TRAIN<br>*M. Yamakawa, R. Iwasaki, N. Hosotani, K. Matsuno, S. Asao* | A STUDY ON FLOW CHARACTERISTICS IN MEANDERING CHANNEL<br>*S. Yamamura, I. Honda, O. Kawanami* |

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| | INVESTIGATION ON CHF PREDICTION MODELS FOR INNER AND OUTER RPV GAPAT COREMELTDOWN SEVERE ACCIDENT<br>*W. X. Tian, G.H. Su, S. Z. Qiu, J. Wang, K. Feng* | IMPLEMENTATION OF THE LANGMUIR-FREUNDLICH ISOTHERM IN MODELING COUPLED TRANSPORT- HETEROGENEOUS ELECTROCHEMISTRY IN CONTAMINATED PEM FUEL CELLS<br>*S. Hasmady And K. Fushinobu* | VISUALIZATION AND ANALYSIS OF HEAT AND MASS TRANSFER AROUND LIQUID-LIQUID INTERFACE USING THE SIMULTANEOUS TWO-WAVELENGTH IMAGING METHOD<br>*D. Kawashima, N. Kakuta, K. Kondo, H. Arimoto, Y. Yamada* | LARGE EDDY SIMULATION OF HIGH REYNOLDS NUMBER TURBULENT FLOWS USING LATTICE BOLTZMANN METHOD AND CUDA-GPU<br>*Shangguan Yanqin, Wang Xian, Chen Gang, Li Yueming* | EXPERIMENTAL INVESTIGATION OF THE THERMAL BEHAVIOR OF A WATER-PCM HEAT EXCHANGER FOR STABILIZATION OF WATER TEMPERATURE<br>*P. Charvat, J. Stetina, L. Klimes, M. Ostry, J. Hejcik* |
| | DEVELOPMENT OF TWO-DIMENSIONAL TEMPERATURE DISTRIBUTION MEASUREMENT OF SURFACE BOILING HEAT TRANSFER USING A TEMPERATURE-SENSITIVE PAINT<br>*T. Tao, O. Kawanami, Y. Matsuda, T. Tamakoshi, Y. Egami, I. Honda H. Yamaguchi, T. Niimi* | INFLUENCE OF SHOT PEENING ON SCALE FORMATION DURING A WARM OXIDATION PROCESS<br>*A.Takemura, R.Takabata, Y.Tanaka, K.Fujiwara And S.Okaguchi* | VISUALIZATION OF A RISING MICROBUBBLE POSITION AND FLOW SURROUNDING THE MICROBUBBLE CAUSED BY PHOTOCATALYTIC REACTION<br>*N. Unno, T. Tsuda, S. Satake, K. Suzuki* | NUMERICAL ANALYSES ON LIQUID-METAL MHD FLOW IN SUDDEN CHANNEL EXPANSION<br>*H. Kumamaru, K. Itoh, Y. Shimogonya* | CFD-BASED INVESTIGATION OF HEAT TRANSFER CHARACTERISTICS OF FLUE GAS-WATER HEAT EXCHANGER PANELS PRODUCED WITH A NOVEL MANUFACTURING PROCESS<br>*T. Fukue, C. Spitas, M. Dwaikat, M. Ishizuka* |
| | DEVELOPMENT OF A SHORT TRANSPARENT HEATED TUBE FOR A BETTER UNDERSTANDING OF THE MECHANISM OF BOILING HEAT TRANSFER<br>*Y. Yamaguchi, O. Kawanami, I. Honda, H. Ohta, H. Asano, T. Kurimoto, M. Komasaki* | NUMERICAL INVESTIGATION ON HYDROGEN PERMEATION THROUGH PD/AG MEMBRANE FOR $H_2/N_2$ MIXTURE STAGNATING FLOW<br>*H.M. Faizal, T. Yokomori, T. Ueda* | VISUALIZATION AND MEASURMENT OF VELOCITY FIELD IN A MICRO-SCALE OPEN CHANNEL USING ELECTRON MICROSCOPE<br>*K. Yasuda, M. Sogo, Y. Iwamoto* | SEMIANALYTICAL MODEL FOR HEAT TRANSFER CHARACTERISTICS OF COUETTE-POISEUILLE UNSTEADY FLOW<br>*Balaram Kundu, Pranab Kumar Mondal* | FROST UNIFORMITY IN MICRO-CHANNEL HEAT EXCHANGERS<br>*K. Kim, M.–H. Kim, K.–S. Lee* |
| 17:30 - | Departure Time of a Free Shuttle Bus to ANA Crowne Plaza Ube and International Hotel Ube<br>* After Technical Sessions, all the participants move to ANA Crowne Plaza Ube and International Hotel Ube | | | | |
| **Sunday 3 November, 2013** | | | | | |
| 8:10 | Departure Time of a Free Shuttle Bus to TUSY<br>* All the participants move to TUSY by a free shuttle bus from ANA Crowne Plaza Ube and International Hotel Ube. | | | | |
| 8:50 – 9:40 | **Plenary Lecture 4** : Prof. Alfonso Ortega, Villanova University (**Room F on 2nd floor**)<br>*Uncovering Fundamental Issues in Thermal Management Applications:*<br>*A Closer Examination of Impinging Synthetic Jets and Droplet Sprays for Cooling Electronics* | | | | |
| | *Coffee Break on 2nd floor* | | | | |
| Sunday 3<br>10:00 – 11:40 | **A** | **B** | **C** | **D** | **E** |
| | Boiling and Multi-Phase Flow II | Heat and Mass Transfer III | Thermal Hydraulics of Energy Reactors | Experimental & Computational Fluid Dynamics III | Electronics Packaging and Thermal Management I |
| | *Chair: O. Kawanami* | *Chair: H. Kumamaru* | *Chair: A. Kawahara* | *Chair: L. Velázquez-Araque* | *Chair: J. M. Wu* |

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| | EFFECT OF SURFACE STRUCTURES ON CONVECTIVE FLOW BOILING HEAT TRANSFER<br>*Geehong Choi, Dong Il Shim, Beom Seok Kim, Sangwoo Shin, Hyung Gee Cho* | EFFECT OF HEAT TRANSER OVER THE FREE SURFACES UPON THERMOCAPILLARY DRIVEN FLOW IN A THIN FREE LIQUID FILM OF A HIGH PLANDTL NUMBER FLUID<br>*D. Limsukhawat, I. Ueno* | EFFECT OF PHYSICAL PROPERTIES ON GAS ENTRAINMENT RATE FROM FREE SURFACE BY VORTEX<br>*Naosuke Ote, Yasuo Koizumi, Hideki Kamide, Shuji Ohno, Kei Ito* | VORTICAL STRUCTURES EVOLUTION AND SPREADING CHARACTERISTICS OF A PLANE JET IMPINGING UPON CYLINDER<br>*H. H. Chang, C. E. Liu, F. B. Hsiao* | STUDY ON OUTSIDE AIR COOLING SYSTEMS IN DATA CENTER<br>*M. Koganei Y. Ogata, R. Tanioka, M. Sakamoto, A. Yamanaka* |
| | EFFECT OF WETTABILITY ON BUBBLE DYNAMICS IN NUCLEATE POOL BOILING<br>*Donghwi Lee, Beom Seok Kim, Sangwoo Shin, Hwansung Lee, Hyung Hee Cho* | DNS OF TURBULENT DIFFUSION TOWARDS THE ESTIMATION OF EMISSION SOURCE<br>*J. Hasegawa, K.Oyagi, T. Tsukahara, Y. Kawaguchi* | EXPERIMENTAL AND NUMERICAL STUDY ON TRANSIENT HEAT TRANSFER FOR HELIUM GAS FLOWING OVER A FLAT PLATE WITH UNIFORM EXPONENTIAL HEAT GENERATION<br>*Z. Zhao, Q.S. Liu, K. Fukuda* | CHARACTERISTICS OF WATER FLOW FIELD AROUND AN AIR BUBBLE ATTACHED AT THE TOP OF A DOWNWARD-INCLINED PIPE<br>*James Yang, Ting Liu, Cheng Lin, Chia-Hsun Lu, Ming-Jer Kao* | EXPERIMENTAL INVESTIGATION OF AIR FLOW THROUGH PERFORATED TILE IN A RAISED FLOOR DATA CENTER<br>*V. K. Arghode, Y. Joshi* |
| | BOILING FLOW STRUCTURE IN A HORIZONAL NARROW CHANNEL WITH A THERMAL SPRAY COATING<br>*J. Yoshidome, T. Gomyo, H. Asano* | HEAT TRANSFER ENHANCEMENT BY MEANS OF "MAGNETIC RIBS"<br>*M. Gallo, H. Nemati, P. Attrotto, B. J. Boersma, P. Colonna* | ANALYSIS OF MULTI-DIMENSIONAL THERMAL HYDRAULIC BEHAVIOR IN FUKUSHIMA-DAIICHI UNIT-1 ACCIDENT WITH TRAC-BF1<br>*T. Nagatake, H. Akimoto, H. Yoshida, K. Takase* | NUMERICAL AND EXPERIMENTAL INVESTIGATION OF CONTINUOUS STARCH HYDROLYSIS WITH A COUETTE TAYLOR FLOW REACTOR<br>*H. Masuda, T. Horie, R. Hubacz, N. Ohmura* | EXPERIMENTAL COMPARISON OF ACTIVE TILES WITH PASSIVE TILES IN A RAISED FLOOR DATA CENTER<br>*V. Sundaralingam, V.K. Arghode, Y.K. Joshi* |
| | DEVELOPMENT OF COOLING SYSTEM FOR DATA SERVERS USING FLOW BOILING OF NANOFLUID<br>*Y. Fukuyama, A. Kawakubo, Y. Shinmoto, H. Ohta, M. Sato, K. Iimura, M. Fukagaya, Y. Abe* | ACTIVE CONTROL OF IMPINGING JET BY SYNTHETIC JET<br>*T. Iwana, K. Suenaga, M. Masahiro, S. Honami* | THE ANALYSIS OF CHINSHAN NUCLEAR POWER PLANT SPENT FUEL POOL BY USING TRACE AND FRAPTRAN/SNAP<br>*W.Y. Li, J.R.Wang, H.T. Lin, S.W. Chen, C. Shih* | WIND-TUNNEL EXPERIMENT ON A SLIDING PLATE ABOVE GROUND SURFACE USING A MOVING-BELT SYSTEM<br>*T. Teraoka, T. Okayama, H. Mihara, J. Funaki, K. Hirata* | HEAT TRANSFER CHARACTERISTICS OF THE NARROW GAP BETWEEN HIGH SPEED ROTATING COAXIAL CYLINDERS SIMULATING AN EV MOTOR GEOMETRY<br>*S.Hirano, M. Komagamine, A.Kaneko, Y.Abe* |
| | STUDY ON MICROLAYER BENEATH FLAT BOILING BUBBLE IN MINI-CHANNEL WITH MEMS SENSOR<br>*T. Saitoh, T. Yabuki, O. Nakabeppu* | EFFECT OF NOZZLE SHAPE AND CROSS FLOW ON HEAT TRANSFER AND FLOW BEHAVIOR OF IMPINGEMENT JET ARRAY<br>*Y. Tomiyama, Y. Yamane, M. Motosuke, S. Honami* | PHOTOGRAPHIC STUDY OF SUBCOOLED POOL BOILING CHF FOR PRE-PRESSURIZATION BEFORE EACH EXPERIMENTAL RUN<br>*Min Han Htet, Katsuya Fukuda, Quisheng Liu* | INVESTIGATION OF TURBULENT MODULATION IN HORIZONTAL PARTICLE LADEN BOUNDARY-LAYER GAS FLOW BY USING PIV<br>*K. Sugiyama, K. Otakeguchi, T. Tsukahara, Y. Kawaguchi* | REMOTE COOLING OF A HIGH-POWER LIGHT EMITTING DIODE MODULE USING A FLAT EVAPORATOR LOOP HEAT PIPE<br>*Nayoung Jeon, Wukchul Joung, Taehee Kim, Daehui Lee, Jinho Lee* |
| 11:40 – 13:00 | *Lunch (All the participants can have a "Japanese Bento (Lunch Box)")* | | | | |
| 13:00 - 13:50 | **Plenary Lecture 5** : Prof. Shigenao Maruyama, Tohoku University (**Room F on 2nd floor**)<br>*Nano-Scale Radiative Heat Transfer to Solve Global Warming and Environmental Issues* | | | | |
| | **A** | **B** | **C** | **D** | **E** |
| Sunday 3<br>14:00 – 15:40 | Boiling and Multi-Phase Flow III | Heat and Mass Transfer IV | Combustion and Reacting Flows I | Experimental & Computational Fluid Dynamics IV | Electronics Packaging and Thermal Management II |
| | *Chair: K. Fukuda* | *Chair: M. Gallo* | *Chair: H. Torikai* | *Chair: C. Hong* | *Chair: Y. K. Joshi* |

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| | IMPROVED SIMULATION OF A SINGLE BUBBLE RISING IN STAGNANT LIQUID USING FINITE VOLUME PARTICLE METHOD<br>*X. Liu, L. Guo, K. Morita, S. Zhang* | TRANSIENT CHARACTERISTICS OF MAGNETOTHERMAL RAYLEIGH-BENARD CONVECTION OF AIR INDUCED IN A SHALLOW CYLINDRICAL ENCLOSURE WITH AND WITHOUT A SLIP SIDEWALL<br>*T. Okitsu, K. Yasuhara, M. Akamatsu* | REACTION PATH ANALYSIS TO SODIUM-WATER CHEMICAL REACTION FIELD USING LASER DIAGNOSTICS<br>*K. Tamura, Y. Deguchi, R. Muranaka, K. Kusano, T. Takata, S. Kikuchi, A. Kurihara* | MODELLING FOR THERMAL CONDUCTIVITY OF BIMETALLIC NANOFLUIDS<br>*H. H. Balla, S. Abdullah, WMF Wanmohmood, R. Zulkifli, K. Sopian* | MODELING OF MICROPROCESSOR PACKAGE SUBSTRATE WITH EFFECTIVE THERMAL CONDUCTIVITY<br>*K. Nishi, T. Hatakeyama, S. Nakagawa, M. Ishizuka* |
| | BEHAVIORS OF MICROBUBBLES RISING NEAR A VERTICAL FLAT WALL<br>*A. Kitagawa, T. Ozato, Y. Hagiwara, Y. Murai* | NON-LINEAR FLOW FIELDS AND THEIR TRANSITION PROCESSES OF LIQUID BRIDGE DUE TO THERMOCAPILLARY EFFECT UNDER NORMAL GRAVITY CONDITION<br>*Takumi Watanabe, Taiki Matsugase, Hiroki Kawasaki, Ichiro Ueno* | INFLUENCE OF PRESSURE ON SOOT FORMATION IN LAMINAR DIFFUSION FLAMES OF ETHYLENE DILUTED WITH CARBON DIOXIDE OR NITROGEN AT PRESSURES UP TO 20 ATM<br>*Ahmet E. Karataş, Ömer L. Gülder* | EXPERIMENTAL STUDY OF THE OBLIQUE COLLISION OF TWO DROPLETS WITH A HOT SOLID<br>*H. Fujimoto, K. Takahashi, S. Yoshimoto, T. Hama, H. Takuda* | FLOW AND THERMAL RESISTANCE NETWORK ANALYSIS AROUND FINNED HEAT SINKS WITH DIFFERENT SIZES OF BYPASS<br>*T. Fukue, K. Hirose, T. Hatakeyama, M. Ishizuka* |
| | PRESSURE DROP ACROSS SUDDEN EXPANSION IN SEPARATED TWO-PHASE FLOW<br>*A. Nouri-Borjerdi* | EXPERIMENTAL INVESTIGATION OF A DROPLET ON A LOW-SURFACE-ENERGY SOLID<br>*Y. Yonemoto, T. Kunugi* | INFLUENCE OF FLUE GAS RECIRCULATION ON PERFORMANCE OF A SMALL SCALE BIOMASS COMBUSTION<br>*J. Hrdlicka, F. Hrdlicka* | THE EFFECT OF XANTHAN GUM ON FLUID FRICTION IN SPIRAL PIPES<br>*Yanuar, Budiarso, Gunawan, M. Baqi, Ogata. S* | FUNDAMENTAL NUMERICAL STUDY ON HEAT TRANSFER CHARACTERISTICS OF THERMAL VIAS<br>*Y. Koito, Y. Kubo, T. Tomimura* |
| | NUMERICAL SIMULATION OF RISING BUBBLE BEHAVIOR UNDER ACCELERATING CONDITIONS<br>*H. Yoshida, T. Nagatake, K. Takase, A. Kaneko, H. Monji, Y. Abe* | MODELLING OF A DROPLET BEHAVIOR ON A LOW-SURFACE-ENERGY SOLID<br>*Y. Yonemoto, T. Kunugi* | STUDY OF FLAME SPREAD BEHAVIOUR IN LARGE-SCALE 2-D DROPLET CLOUDS WITHOUT INTERACTIVE EFFECT USING PERCOLATION APPROACH<br>*H. Saputro, T. Seo, M. Mikami* | A STUDY OF OFI MESUREMENT ON SUREFACE AT AN ATTACK ANGLE<br>*K. Tsukamoto, Y. Suzuki, K. Tazawa* | FUNDAMENTAL NUMERICAL STUDY ON 45° HEAT SPREADING ANGLE<br>*Y. Koito, S. Okamoto, T. Tomimura* |
| | NUMERICAL SIMULATION OF BUBBLY FLOW IN A VERTICAL PIPE USING TPFIT CODE<br>*L.F. Jiao, H. Yoshida, K. Takase* | STUDY ON CONDENSATION OF MIXED VAPOR ON FLAT COOLING PLATE IN POROUS MEDIA －INFLUENCE ON SURFACE TEXTURE (WETTABILITY) OF POROUS MEDIA－<br>*R. Nagata, E. Siswanto, H. Katsurayama, Y. Katoh* | AN INVESTIGATION OF SECONDARY ATOMIZATION OF EMULSIFIED FUEL IN SPRAY FLOW UNDER VARIOUS TEMPERATURES BY SHADOW IMAGING<br>*Yutaka Shoji , Hirotatsu Watanabe, Ken Okazaki* | MEASUREMENTS ON FLOW DEFLECTOR FOR CATALYTIC CONVERTER USING EXHAUST GAS FROM GASOLINE ENGINES<br>*W. Shibata, S. Matsui, H. Mihara, J. Funaki, K. Hirata* | CALCULATION OF HOT SPOT TEMPERATURE IN POWER SI MOSFET WITH ELECTRO- THERMAL ANALYSIS<br>*R. Kibushi, T. Hatakeyama, S.Nakagawa M.Ishizuka* |
| | *Coffee Break on 2nd floor* | | | | |
| Sunday 3<br>16:00 – 17:20 | **A** | **B** | **C** | **D** | **E** |
| | Micro- and Nano-Scale Transport I | Heat and Mass Transfer V | Combustion and Reacting Flows II | Sustainable & Renewable Energy I | Electronics Packaging and Thermal Management III |
| | *Chair: M. Kohno* | *Chair: Q. S. Liu* | *Chair: M. Ikeda* | *Chair: I.N.G. Wardana* | *Chair: K. Nishi* |
| | TRIBOLOGY OF CHARGED POLYMER BRUSH: MICROSCALE MODELING AND SIMULATION<br>*M. Ide, M. Matsumoto* | CONTROL OF SLAB SOLIDIFICATION IN CONTINUOUS CASTING PROCESS VIA OPTIMIZATION AND NUMERICAL MODELS<br>*T. Mauder, J. Stetina, M. Raudensky* | EXTINGUISHMENT OF A JET DIFFUSION FLAME WITH AN INERT-GAS SOAP BUBBLE TRANSPORTED BY A VORTEX RING<br>*K. Watanabe, H. Torikai, A. Ito* | STUDY ON HEAT EXCHANGE PERFORMANCE OF GROUND SOURCE HEAT PUMP SYSTEM<br>*A. Ohashi, K. Tsutsumi, T. Takeda, S. Funatani* | STUDY ON THE NATURAL AIR COOLING DESIGN OF ELECTRONIC EQUIPMENT CASINGS: EFFECTS OF THE HEIGHT AND SIZE OF OUTLET VENT ON THE FLOW RESISTANCE<br>*M. Ishizuka, T. Hatakeyama, R. Kibushi, S. Nakagawa, Makoto Inoue* |

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| | RAREFIED GAS FLOW AND THERMAL CREEP THROUGH MICROCHANNEL IN SLIP FLOW REGIME<br>*C.C. Tai, P.Y. Tzeng, C.Y. Soong, F.C. Ji* | MASS TRANSFER CHARACTERISTICS OF FIN-AND-TUBE HEAT EXCHANGERS UNDER FROSTING CONDITIONS<br>*H. Y. Ye, K. S. Lee* | COMBUSTION CHARACTERISTICS OF A 4 STEP GRATE-FIRING WOOD PELLET BOILER: PARTIAL LOAD SIMULATION<br>*J. Ahn, J.H. Jang* | DEVELOPMENT OF AN AIR CONDITIONING SYSTEM COMBINED WITH A GEOTHERMAL VENTILATION SYSTEM WITH A DESICCANT OUTDOOR AIR-CONDITIONING REGENERATED BY SOLAR AIR HEATERS<br>*M. Koganei, K. Tashiro, K. Hiyama, M. Hashimoto, M. Yoshihara, M. Yokoyama* | EFFECT OF ORIENTATION ON HEAT TRANSFER FROM MINIATURE/MICRO PINS<br>*N. Matsumoto, T. Tomimura, Y. Koito* |
| | MOLECULAR DYNAMICS STUDY ON CONDENSATION/ EVAPORATION BEHAVIOR OF CHAIN MOLECULES AT LIQUID-VAPOR INTERFACE<br>*G. Nagayama, M. Takematsu, K. Iwano, T. Tsuruta* | DEVELOPMENT OF NUMERICAL METHOD FOR SIMULATING MELTING BEHAVIOR OF FUEL ELEMENTS BASED ON PARTICLE METHOD<br>*T. Nagatake, M. Furuya, K. Takase, H. Yoshida, F. Nagase* | NUMERICAL STUDIES ON ELEMENTARY PCCI COMBUSTION AFFECTED BY FUEL CONCENTRATION DISTRIBUTION<br>*K. Yoshida, T. Tokinoya, Y. Kimura, I. Kataoka* | DEVELOPMENT OF THE SUITABLE COMBUSTOR AND COMBUSTION CHARACTERISTIC OF BIOFUELS<br>*Shun Matsuda, Shuichi Torii* | PARAMETRIC STUDY ON THE PERFORMANCE OF DOUBLE-LAYERED MICROCHANNELS HEAT SINK<br>*J.M. Wu, J.Y. Zhao, K.J Tseng* |
| | A MOLECULAR DYNAMICS SIMULATION ON THE MECHANICAL BALANCE OF THE FORCE APPLIED TO A THIN LIQUID FILM ON A NANOMETERE-SCALE SLIT PORE<br>*K. Nakahashi, K. Fujiwara, M. Shibahara* | COMPARISON OF THE EFFECTS OF TWO DIFFERENT DILUTE SOLUTIONS OF ANTIFREEZE PROTEIN AND IONS ON ICE GROWTH<br>*H. Aomatsu, Y. Hagiwara* | EXTINGUISHMENT OF POOL FIRE WITH RUBBER BALLOON INFLATED WITH INERT GAS<br>*H. Torikai, M. Narita, A. Ito* | EXPERIMENT ON GROUND SOURCE HEAT PUMP BASED ON DIRECT EXPANSION<br>*S. Ishiguro, T. Takeda, K. Ichimiya S. Funatani* | WETTABILITY ENHANCEMENT USING NANO ALUMINA FOR WICK HEAT PIPE<br>*T-L. Phan, M. Mochizuki, Y. Saito, M.S. Ahamed* |
| 17:30 – | Departure Time of a Free Shuttle Bus to ANA Crowne Plaza Ube to attend Conference Banquet<br>* After Technical Sessions, all the participants move to ANA Crown Plaza Ube | | | | |
| 18:30 – 21:00 | **Conference Banquet (ANA Crown Plaza Ube, 3F)** | | | | |
| **Monday 4 November, 2013** | | | | | |
| 8:30 | Departure Time of a Free Shuttle Bus to TUSY<br>* All the participants move to TUSY by a free shuttle bus from ANA Crown Plaza Ube and International Hotel Ube. | | | | |
| 9:10 - 10:00 | **Plenary Lecture 6** : Prof. Yu.A. Kuzma-Kichta, Moscow Power Engineering Institute (**Room F on 2nd floor**)<br>*Boiling Heat Transfer Enhancement on Macro-, Micro- and Nano-Scales* | | | | |
| | *Coffee Break on 2nd floor* | | | | |
| | **A** | **B** | **C** | **D** | **E** |
| Monday 4<br>10:20 - 12:00 | Micro- and Nano-Scale Transport II | Heat and Mass Transfer VI | Combustion and Reacting Flows III | Sustainable & Renewable Energy II | Noise and Vibration in Fluid I |
| | *Chair: G. Nagayama* | *Chair: H. Asano* | *Chair: J. Ahn* | *Chair: S. Funatani* | *Chair: Y. Suzuki* |

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| | ELECTRICAL PROPERTIES AND ENERGY BAND STRUCTURE OF INTERFACES BETWEEN NIOBIUM OXIDE AND METALS<br>*K. Kaneda, H. Asano, Y. Sakai, M. Takenaga* | ON THE EXTENT AND IMPACT OF HTWS IN VOLATILE DROPS ON LOCAL HEAT AND MASS TRANSFER AT SOLID-LIQUID INTERFACES<br>*Y. Fukatani, T. Waku, S. Hussain, M. Kohno* | EFFECTS OF INHOMOGENEOUS MIXING OF RECIRCULATED EXHAUST GAS IN LEAN PREMIXED FLAME<br>*Y. Hirabayashi, M. Komiyama, K.Takeishi, Y. Fujita* | EXPERIMENTAL STUDY ON THE OPTIMAL TILT ANGLE OF PHOTOVOLTAIC PANELS IN YULIN OF SHAANXI PROVINCE<br>*Chen Yan, Cheng Ke, Chen Binglu* | AEROACOUTIC ANALYSIS OF NOISE GENERATION FROM A LARGE SCALE WIND TURBINE BLADE WITH SWEPT TIP<br>*S. Wasala, R. Storey, S. Norris, J. Cater* |
| | SLIDING FRICTION ON SOLID SURFACES WITH FRACTAL STRUCTURE<br>*H. Asano, K. Kaneda, M. Takenaga* | THE QUENCHING OF STEEL AND ZIRCALOY SPHERES IN DEIONIZED WATER<br>*J.C. Wang, S.H. Hsu, M.X. Ho, C. Pan* | EFFECT OF IRON ADDITION ON REDUCTION OF UNBURNED CARBON DURING COMBUSTION OF BLENDS OF BITUMINOUS AND SUB-BITUMINOUS COALS<br>*M. Ikeda, A. Nakajima, T. Ishikawa, H. Shirai* | STUDY ON PERFORMANCE OF A DESICCANT AIR-CONDITIONING SYSTEM WITH SOLAR AIR HEATERS AND AN INDIRECT EVAPORATIVE COOLER<br>*M. Koganei, H. Kojima, N. Miura* | AERODYNAMIC NOISE CONTROL WITH PLASMA ACTUATORS<br>*A. Iida, H. Yokoyama, M. Kusumoto* |
| | MODELLING OF ENERGY TRANSPORT IN SOLID BASED ON BOLTZMANN TRANSPORT EQUATIONS<br>*H. Kurata, H. Imanishi, Y. Masao, M. Matsumoto* | BOILING HEAT TRANSFER MECHANISMAND ENHANCEMENT OF BOILING HEAT TRANSFER OF WATER UNDER LOW PRESSURE AND LOW BOILING TEMPERATURE<br>*K. Oda, H. Ohtake, K. Hasegawa* | NUMERICAL INVESTIGATION OF A LEAN DIRECT INJECTION COMBUSTOR USING HYDROGEN<br>*J.P. Vriend, D. Dewanji, A. Gangoli Rao* | EVALUATION OF A SIMPLE SOLAR HEATING AND VENTILATION SYSTEM FOR A SECTIONAL COMPACT EMERGENCY SHELTER<br>*M. Koganei, T. Akimoto, F.Miura, T.Tanaka, K. Nakamasu* | STUDY ON INTERACTION NOISE AT DESIGN POINT GENERATED BY TIP VORTEX OF A PROPELLER FAN<br>*S. Sasaki, I. Torise, H. Murakami* |
| | RESPONSE OF THIN LIQUID FILM TO NANO-SCALE PROJECTILES<br>*T. Nakatani, M. Matsumoto* | | IMPROVEMENT OF COMBUSTION STABILITY IN NARROW TUBES WITH WIRE MESH<br>*F.A. Munir, N. Hatakeda, T. Seo, M. Mikami* | HYDROGEN PRODUCTION VIA JATROPHA OIL STEAM REFORMING REACTION AT ATMOSPHERIC CONDITION<br>*I.N.G. Wardana, Nurkholis Hamidi* | |
| | SIZE CLASSIFICATION OF CNTS BY DIAMETER AND LENGTH IN LOW PRESSURE<br>*Tatsuya Hisatsugu, Kazuhide Shibata, Yasuyuki Takata, Makoto Hirasawa, Takafumi Seto, Masamichi Kohno* | | A RELATION IF COMBUSTION CHAMBER DEPOSIT FORMATION ON A PISTON OF TWO-STROKE CYCLE ENGINE AND TEMPERATURE INFLUENCES OF LUBRICANT OIL<br>*H. Kon, Wei Fei, T. Fukue, K. Hirose, N. Fujita* | | |
| 12:00 - 13:00 | *Lunch (All the participants can have a "Japanese Bento (Lunch Box)")* | | | | |
| Monday 4<br>13:00 - 14:40 | **A** | **B** | **C** | **D** | **E** |
| | Micro- and Nano-Scale Transport III | Heat and Mass Transfer VII | Manufacturing, Materials Processing, and MEMS Application | Sustainable & Renewable Energy III | Noise and Vibration in Fluid II |
| | *Chair: H. Yoshida* | *Chair: T. Fukue* | *Chair: T. Tsukahara* | *Chair: H. Anno* | *Chair: S. Sasaki* |
| | HEAT TRANSFER INVESTIGATION IN THE MICROCHANNEL WITH NANO-RELIEF<br>*Yu.Kuzma-Kichta, K. Suzuki, A.Lavrikov, M.Shustov, S.Scholl* | PERFORMANCE EVALUATION FOR THERMAL INSULATION OF A WOODY FACING BUILDING BY MODEL STRUCTURES<br>*S. Shoho, Y. Kobuchi, A. Yoshida S. Kinoshita* | STUDY ON SEMICONDUCTOR PROCESS GAS CONCENTRATION MEASUREMENT TECHNOLOGY USING ULTRAVIOLET ABSORPTION SPECTROMETRY<br>*T. Kitani, Y. Deguchi , M. Nagase, N. Ikeda, M. Yamaji* | IN-PLANE THERMAL CONDUCTIVITY OF PEDOT－PSS THIN FILMS<br>*H. Hagino, M. Hokazono, K. Miyazaki, H. Anno, N. Toshima* | A CONTROL LAW BASED ON THE WAVE NATURE OF GAS FOR THE TESTING EQUIPMENT OF GAS FLOW METERS<br>*M. Nakao, T. Kato, T. Oowaku, H. Sakuma, T. Kagawa* |

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| | VISUALIZATION AND MEASUREMENT OF THE MICROMIXING FLOW ON A GAS-LIQUID FREE INTERFACE CAUSED BY THE MARANGONI EFFECT<br>*T. Yamada, N. Ono* | HEAT TRANSFER IN THERMALLY ACTIVATED GYPSUM PLASTER WITH LOW GRADE HEAT SOURCE<br>*M. Ostrý, T. Klubal, P. Charvát, L. Klimeš* | IMPROVEMENT OF CORROSION RESISTANCE OF STEEL USING MECHANOCHEMICAL CAVITATION<br>*T. Yoshimura, K. Sato* | FIRST-PRINCEPLES STUDY OF CARRIER-DOPING EFFECTS FOR ELECTRONIC STRUCUTRE ON CONDUCTING POLYMERS<br>*K. Akai, H. Anno, M. Hokazono, N. Toshima* | STUDY OF AERODYNAMIC SOUND GENERATED FROM THE AIRFOIL TIP FLOWS<br>*Y. Suzuki, C. Kato* |
| | SINGLE-PHASE AND TWO-PHASE PRESSURE DROPS THROUGH SUDDEN EXPANSION IN RECTANGULAR MICROCHANNEL<br>*Wen Zhe Law, Hiroki Kurihara, Haslinda Kusumaningish Akimaro Kawahara, Michio Sadatomi* | SIMULTANEOUS MEASUREMENTS OF UNSTEADY THERMAL AND FLOW FIELDS IN A TURBULENT BOUNDARY LAYER USING HIGH-SPPED INFRARED THEMOGRAPH AND PIV<br>*S. Yamada, H. Nakamura* | EXPERIMENTAL CONFIRMATIONS OF MEMS BASED SENSOR FOR FLOW DIRECTION AND WALL SHEAR STRESS<br>*T. Ota, S.Kimura , Y. Kanaoka, T.Kiwata, N.Komatsu, T. Kono* | ORGANIC THERMOELECTRIC MATERIALS FOR SUSTAINABLE AND RENEWABLE ENERGY<br>*Naoki Toshima* | CHARACTERISTCS OF AERODYNAMIC NOISE RADIATED AIRFLOW WITH CHANGING TURBULENCE INTENSITY AND EDDY SCALE OF INFLOW<br>*N.Kobayashi, Y. Suzuki, K. Yamamoto, K. Nishimura, K. Nishimura, C. Kato* |
| | MEASUREMENT OF FRICTION FACTORS OF GAS FLOW THROUGH MICROTUBES<br>*S. Matsushita, C. Hong, Y. Asako* | TIME-RESOLVED 2D TEMPERATURE MEASUREMENT IN ENGINE EXHAUSTS USING CT-TUNABLE DIODE LASER ABSORPTION SPECTROSCOPY<br>*T. Kamimoto, Y. Deguchi, N. Zhang, J. Zhang* | WATER PORPAGATION CHARACTERISTICS OF HEXAGONALLY ARRANGED NANOPILLAR SURFACE<br>*Hwanseong Lee, Dong Il Shim, Sangwoo Shin, Beom Seok Kim, Hyung Hee Cho* | THERMAL STABILITY AND THERMOELECTRIC PROPERTIES OF SILICON CLATHRATES FOR WASTE HEAT RECOVERY<br>*H. Anno, R. Shirataki* | |
| | | | PARTICLE TRANSPORT AND SEPARATION IN MICROFLUIDIC DEVICES USING FIELD FLOW FRACTIONATION<br>*Nipu Modak, Amitava Datta, Ranjan Ganguly* | FABRICATION AND CHARACTERIZATION OF FLEXIBLE THERMOELECTRIC DEVICES USING CONDUCTING POLYMER<br>*T. Nishinaka, M. Hokazono, H. Anno, N. Toshima* | |
| | *Coffee Break on 2nd floor* | | | | |
| 15:00 - | Closing on the 2nd Floor (Room F) | | | | |
| 15:30 - | Departure Time of a Free Shuttle Bus to ANA Crowne Plaza Ube and International Hotel Ube<br>* After Technical Sessions, all the participants move to ANA Crown Plaza Ube and International Hotel Ube | | | | |
| **Tuesday 5 November, 2013** | | | | | |
| 9:30 (Departure) -16:00 | EXCURSION (Akiyoshidai & Hagi)<br>All the persons who register to attend this excursion at the conference desk will leave ANA Crowne Plaza Ube at 9:45 am.<br>(The first 40 persons can have seats of a bus.) | | | | |