

## CONFERENCE SCHEDULE AT A GLANCE

<b>September 21st (Wednesday)</b>				
Time	Room A (318A)	Room B (318B)	Room C (319A)	Room D (319B)
8:00 - 18:00	Registration			
8:40-9:00	<b>Opening ceremony</b>			
9:00-9:40	<b>Keynote Lecture-1</b> [ Memorial Session of Re-celebrating the 2012 Max Jakob Awards ] <b>Prof. Wataru NAKAYAMA</b>			
9:40-9:50	Coffee Break			
9:50-10:30			<b>Keynote Lecture-2</b> <b>Prof. Yogendra JOSHI</b>	
10:30-10:50	Coffee Break			
10:50-12:10	<b>Heat and Mass Transfer-1</b>	<b>Transport in Porous Media</b>	<b>Boiling and Multi-Phase Flow-1</b>	<b>Experimental/Computational Fluid Dynamics-1</b>
	002, 031, 044, 150	016, 033, 099, 130	005, 039, 077, 142	007, 008, 009
12:10-13:20	Lunch			
13:20-14:50	<b>Heat and Mass Transfer-2</b>	<b>Heat Exchanges</b>	<b>Boiling and Multi-Phase Flow-2</b>	<b>Experimental/Computational Fluid Dynamics-2</b>
	047, 048, 056, 066, 090	022, 041, 046, 062, 126	083, 087, 121, 133, 141	011, 012, 019, 025, 035
14:50-15:20	Coffee Break			
15:20-16:00	<b>Poster session-1</b> (001, 040, 042, 061, 088, 089, 092, 094, 095, 097, 102, 103, 110, 113, 188) at Room E (321A)			
16:00-16:20	Coffee Break			
16:20-17:50	<b>Heat and Mass Transfer-3</b>	<b>Combustion and Reacting Flows-1</b>	<b>Micro- and Nao-Scale Transport</b>	<b>Experimental/Computational Fluid Dynamics-3</b>
	067, 068, 071, 131, 210	013, 021, 026, 038, 078	015, 028, 123, 191, 196	036, 051, 055, 057, 058

<b>September 22nd (Thursday)</b>				
Time	Room A (318A)	Room B (318B)	Room C (319A)	Room D (319B)
8:00 - 18:00	Registration			
9:00-9:40	<b>Keynote Lecture-3 Prof. Sung Jin KIM</b>			
9:40-10:00	Coffee Break			
10:00-11:30	<b>Heat and Mass Transfer-4</b>	<b>Bioengineering and Bio-thermal Fluid Dynamics-1</b>	<b>Turbulence and Flow Instabilities</b>	<b>Experimental/Computational Fluid Dynamics-4</b>
	023, 043, 064, 076, 106	093, 098, 101, 104, 132	024, 053, 177, 178, 212	074, 084, 107, 112, 120
11:30-13:00	Lunch			
13:00-13:40	<b>Keynote Lecture-4 Prof. Chien-Yuh YANG</b>			
13:40-14:00	Coffee Break			
14:00-15:30	<b>Heat and Mass Transfer-5</b>	<b>Bioengineering and Bio-thermal Fluid Dynamics-2</b>	<b>Electronics Packaging and Thermal Management-1</b>	<b>Experimental/Computational Fluid Dynamics-5</b>
	114, 116, 119, 127, 147	137, 146, 151, 170	020, 070, 105, 140, 175	122, 124, 145, 149, 154
15:30-15:50	Coffee Break			
15:50-16:30	Poster-2 (125, 128, 135, 136, 138, 169, 172, 173, 174, 185, 186, 190, 198, 204, 214) at Room E (321A)			
16:30-16:50	Coffee Break			
16:50-18:20	<b>Visualization/Imaging Techniques-1</b>	<b>Thermal Hydraulics of Energy Reactor</b>	<b>Electronics Packaging and Thermal Management-2</b>	<b>Experimental/Computational Fluid Dynamics-6</b>
	065, 081, 085, 086, 155	034, 045, 054, 108	187, 202, 203, 209	156, 159, 161, 164, 168
19:30-21:30	Banquet			

<b>September 23rd (Friday)</b>				
Time	Room A (318A)	Room B (318B)	Room C (319A)	Room D (319B)
8:00 - 16:00	Registration			
9:10-9:50	<b>Keynote Lecture-5 Prof. Dereje AGONAFER</b>			
9:50-10:10	Coffee Break			
10:10-11:40 (12:00)	<b>Fuel Cells and Battery Technology-1</b>	<b>Manufacturing and Materials Processing</b>	<b>Boiling and Multi-Phase Flow-3</b>	<b>Experimental/Computational Fluid Dynamics-7</b>
	017, 069, 100, 118, 139	014, 032, 052, 079, 096, 180	167, 192, 201, 205, 206	165, 183, 189, 200, 213
11:40-12:40	Lunch			
12:40-14:10	<b>Fuel Cells and Battery Technology-2/MEMS</b>	<b>Combustion and Reacting Flows-2</b>	<b>Heat and Mass Transfer-6</b>	<b>Thermal-Fluids Machinery/Noise and Vibration in Fluid</b>
	091, 153, 199, 211	111, 115, 129, 144, 193	006, 176, 179, 197, 208	029, 073, 134, 171, 181
14:10-14:30	Coffee Break			
14:30-15:25 (15:45)	<b>Visualization/Imaging Techniques-2</b>	<b>Sustainable &amp; Renewable Energy</b>		
	157, 158, 160	037, 080, 082, 049		

## TECHNICAL PROGRAM

Wednesday, September 21st, 2016

### Room A & B (318A & B)

8:40 – 9:00 **Opening Ceremony**

### Room A & B (318A & B)

9:00 – 9:40 **KEYNOTE LECTURE-1**

[Memorial Session of Re-celebrating the 2012 Max Jakob Awards]

ISTP27-KN1 TRANSPORT PHENOMENA IN INFORMATION PROCESSING SYSTEMS: IMPACTS OF SYSTEM-LEVEL SCALING ON THERMAL MANAGEMENT

*Wataru NAKAYAMA (Tokyo Institute of Technology, Japan)*

### Room C (319A)

9:50 – 10:30 **KEYNOTE LECTURE-2**

ISTP27-KN2 SIMULATIONS OF FLOW BOILING IN SURFACE ENHANCED MICROGAPS

*Yogendra JOSHI (Georgia Institute of Technology, USA)*

### Room A (318A)

10:50 – 12:10 **Heat and Mass Transfer-1**

ISTP27-002 THERMAL CONDUCTIVITY OF FROST ACCUMULATED ON PARALLEL PLATE CHANNELS: EXPERIMENTAL ANALYSIS AND FRACTAL MODELLING

*S. NEGRELLI, V. S. NASCIMENTO Jr., R. P. CARDOSO, and C. J. L. HERMES*

ISTP27-031 THERMAL AND SOLUTAL MARANGONI FLOWS IN INKJET DROPLETS DURING SOLID FILM FORMATION

*H. ISHIZUKA, T. TANIGAWA and J. FUKAI*

ISTP27-044 A HETEROGENEOUS DROP-WISE CONDENSATION MODEL CONSIDERING THE EFFECTS OF CONTACT ANGLE

*G. R. JIN, Y. C. YOON and K. S. LEE*

ISTP27-150 BASIC STUDY ON SOLID-LIQUID PHASE CHANGE PROBLEM OF ICE AROUND HEAT TRANSFER TUBES – PREDICTION OF BRIDGING TIME AROUND TWO ELLIPTICAL

TUBES—

*Q.-S. WANG, K. HIROSE, T. FUKUE and Q.-M. ZHANG*

Room B (318B)

**10:50 – 12:10 Transport in Porous Media**

ISTP27-016 EXPERIMENTAL INVESTIGATION AND ANALYTICAL MODELING OF AEROGEL BLANKET DEFORMATION AND THERMAL PERFORMANCE VARIATION UNDER COMPRESSION

*A. HOSEINI, A. MALEKIAN, M. BAHRAMI*

ISTP27-033 DEVELOPMENT OF COMB-SHAPED MINIATURE ELECTRODE FOR CONTACT IRREVERSIBLE ELECTROPORATION

*S. YOSHIMATSU, M. YOSHIDA, K. KURATA, T. FUKUNAGA and H. TAKAMATSU*

ISTP27-099 EFFECT BY SIZE OF SPECIMEN IN MEASUREMENT OF THERMAL CONDUCTIVITY OF VACUUM INSULATION PANEL

*T. OHMURA, T. FUJIMOTO AND T. YAZAKI*

ISTP27-130 ION EXCHANGING BEHAVIOR OF COMPOSITE MATERIALS FOR THERMAL ENERGY STORAGE

*D. MEITNER and H. RAUPENSTRAUCH*

Room C (319A)

**10:50 – 12:10 Boiling and Multi-Phase Flow-1**

ISTP27-005 EXPERIMENTAL STUDY ON TWO-PHASE PRESSURE DROP THROUGH SUDDEN EXPANSION AND SUDDEN CONTRACTION IN HORIZONTAL RECTANGULAR MINICHANNEL

*A. SANTOSO, D. GOTO, T. TAKEHIRA, A. KAWAHARA and M. SADATOMI*

ISTP27-039 NUMERICAL INVESTIGATION OF FORMATION AND BREAK UP OF ROUND LIQUID COLUMNS WITH A ROTARY ATOMIZER

*T. SOMA, Y. SAITO, Y. MATSUSHITA, H. AOKI, T. INAMURA, M. DAIKOKU, and J. FUKUNO*

ISTP27-077 HEAT FLUX MEASUREMENT USING LASER INTERFEROMETRY AROUND A SPHERICAL GROWING BUBBLE DOMINATED BY LIQUID PHASE HEAT TRANSFER

*K. DEJIMA and O. NAKABEPPU*

ISTP27-142 TEMPERATURE AND VELOCITY MEASUREMENTS OF LAMINAR NATURAL CONVECTION FROM AN INCLINED HEATED PLATE IN WATER WITH BUBBLE INJECTION  
*S. KUMOKAWA, A. KITAGAWA and Y. MURAI*

**Room D (319B)**

**10:50 – 11:50 Experimental/Computational Fluid Dynamics-1**

ISTP27-007 A STUDY ON MECHANICAL EXTRACTION DISPLACEMENT VENTILATION IN A REDUCED-SCALE MODEL  
*Y. J. P. LIN and J. Y. WU*

ISTP27-008 EFFECTS OF UPSTREAM JET INJECTION ON FLOW OF A SQUARE CYLINDER IN CROSSFLOW  
*R. F. HUANG and C. M. HSU*

ISTP27-009 A NUMERICAL STUDY ON THE PERFORMANCE CHARACTERISTICS OF A SHELL AND TUBE HEAT EXCHANGER BY FLOW DISTRIBUTORS IN THE TUBE-INLET CHAMBER  
*T.-H. LEE, Y.-M. PARK, H.-T. CHUNG and H.-B. KIM*

**Room A (318A)**

**13:20 – 14:50 Heat and Mass Transfer-2**

ISTP27-047 THE COMPARISON OF PIN-FIN GEOMETRY AND BONDING METHOD FOR THE COOLING OF POWER MODULE  
*K. MATSUOKA AND M. KATSUTA*

ISTP27-048 ESTIMATION OF HEAT TRANSMISSION THROUGH WINDOW FOR CFD SIMULATION OF INDOOR ENVIRONMENT USING VARIATIONAL CONTINUOUS ASSIMILATION METHOD  
*T. MATSUO, A. KONDO, H. SHIMADERA, A. KOMATSU and S. SHIOCHI*

ISTP27-056 EFFECT OF INTERNAL AND EXTERNAL WETTING ON THE GLOBAL TRANSFER COEFFICIENTS INSIDE HIGH TEMPERATURE ABSORBERS  
*N. GIANNETTI, S. YAMAGUCHI and K. SAITO*

ISTP27-066 ICE SLURRY IMPINGMENT JET COOLING  
*S. TAKADA, K. FUMOTO, T. KAWANAMI and T. INAMURA*

ISTP27-090 A COUPLED TEMPERATURE SOLUTE MODEL FOR RAPID SOLIDIFICATION IN AN ALLOY DROPLET DEPOSITION PROCESS

**Room B (318B)**

**13:20 – 14:50 Heat Exchangers**

ISTP27-022 HEAT TRANSFER AND FLUID FLOW CHARACTERISTICS OF AIR-WATER HEAT EXCHANGER

*T. TAKEDA*

ISTP27-041 HEAT TRANSFER CHARACTERISTICS OF PLATE HEAT EXCHANGER USING COATED-ALUMINUM PLATE FOR AMMONIA BOILING

*H. ARIMA, R. INADOMI and K. KOYAMA*

ISTP27-046 OPERATION OF A ONCE-THROUGH STEAM GENERATOR CONSIDERING PERFORMANCE DEGRADATION

*H. S. HAN, H.-O. KANG, J. YOON, Y. I. KIM, J. S. SONG and K. K. KIM*

ISTP27-062 STUDY ON FLOW CHARACTERISTICS IN A MULTI-TUBULAR HEAT EXCHANGER WITH DISK-AND-DOUGHNUT BAFFLES

*M. MIZUNO and K. FUJIWARA*

ISTP27-126 HEAT TRANSFER PERFORMANCE OF POROUS COPPER PIPE WITH UNIFORMLY-DISTRIBUTED HOLES FABRICATED BY EXPLOSIVE WELDING TECHNIQUE

*K. YUKI, Y. SATO, R. KIBUSHI, N. UNNO, K. SUZUKI, T. TOMIMURA and K. HOKAMOTO*

**Room C (319A)**

**13:20 – 14:50 Boiling and Multi-Phase Flow-2**

ISTP27-083 DOMINANT FACTORS FOR QUASI TWO DIMENSIONAL BOILING

*K. OGAWA, Y. YASUMOTO and M. MATSUMOTO*

ISTP27-087 CHARACTERISTICS OF CONDENSING CHARACTERISTICS OF CONDENSING VAPOUR BUBBLES IN SUBCOOLED POOL WATER

*H. JO and D. JO*

ISTP27-121 EFFECT OF THE JET INDUCTION TUBE LENGTH ON A COOLING PERFORMANCE OF A JEST-TYPE LOOP THERMOSYPHON

*A. SUZUKI, K. SATO, Y. KOITO and T. TOMIMURA*

ISTP27-133 EXPERIMENTAL AND NUMERICAL INVESTIGATIONS OF OIL JET PATTERN FOR PISTON COOLING IN AUTOMOTIVE ENGINES

*A. NAKASHIMA, J. WEN, Y. OGATA, K. NISHIDA, H. HONGOU and H. YOKOHATA*

ISTP27-141 MOTION CHARACTERISTICS OF WALL-SLIDING BUBBLES OBSERVED WITH DIFFERENT SURFACE WETTABILITY

*S. KAWAKAMI, M. GOTO, A. KITAGAWA and Y. MURAI*

**Room D (319B)**

**13:20 – 14:50 Experimental/Computational Fluid Dynamics-2**

ISTP27-011 ENERGY-SAVING LIFTING OF SEABED RESOURCES USING BUBBLE- JET-TYPE AIR-LIFT-PUMP

*T. TAJIRI, E. SHONO, M. SADATOMI and A. KAWAHARA*

ISTP27-012 VORTEX STRUCTURE DEPENDING ON DISK ACCELERATION TIME IN CYLINDRICAL CASING

*H. FURUKAWA, A. WADA and T. WATANABE*

ISTP27-019 SECONDARY FLOW CHARACTERISTICS OF PULSATILE FLOW IN S-SHAPED EXHAUST PIPE OF AUTOMOTIVE ENGINE

*J. OKI, M. IKEGUCHI, Y. OGATA, K. NISHIDA, R. YAMAMOTO, K. NAKAMURA, H. YANAGIDA and H. YOKOHATA*

ISTP27-025 CHANGES OF FLOW FIELDS WITH FLOWRATE IN TWO KINDS OF PROPELLER FANS

*N. SHIOMI, Y. KINOUE and T. SETOBUCHI*

ISTP27-035 A NOVEL METHOD TO MEASURE PASSIVE SCALAR- AND VELOCITY FIELDS SIMULTANEOUSLY BY MEANS OF PIV IN A DENSITY STRATIFIED PLANAR TURBULENT MIXING LAYER

*B. KROHN, N.A. WOLFF and H.-M. PRASSER*

**Room E (321A)**

**15:20 – 16:00 Poster Session-1**

ISTP27-001 LAMINAR FORCED CONVECTION HEAT TRANSFER CHARACTERISTICS OF WATER-BASED NANO-PCM EMULSION FLOW THROUGH A CIRCULAR TUBE

*C. J. HO and C.-Y. LEE*



ISTP27-040 MELTING AND FLOW PHENOMENA IN FILLING-TRENCH PROCESS

*S. HIRASAWA, Y. AOKI, T. KAWANAMI and K. SHIRAI*

ISTP27-042 FABRICATION OF UNI-DIRECTIONAL POROUS ALUMINIUM USING EXPLOSIVE COMPACTION

*K. SHIMOMIYA, M. NISHI, L. KRSTULOVIĆ-OPARA, M. VESENJAK, Z. REN and K. HOKAMOTO*

ISTP27-061 U-RANS SIMULATION OF TRIPLE ELBOW FLOW WITH A 1/7 SCALE EXPERIMENTAL LOOP SIMULATING COLD-LEG PIPING OF AN ADVANCED LOOP-TYPE SODIUM-COOLED FAST REACTOR

*H. YAMANO, M. TANAKA, S. EBARA and H. HASHIZUME*

ISTP27-088 EXPERIMENTAL STUDY OF CONDENSATION HEAT TRANSFER ON TITANIUM TUBE WITH SUPER-HYDROPHOBIC SURFACE

*K.-Y. LEE, D.-Y. JI and H.-G. PARK*

ISTP27-089 MOLECULAR DYNAMICS STUDY OF INFLUENCE OF NANOPARTICLE LAYER ON THERMAL RESISTANCE AT SOLID-LIQUID INTERFACE

*Y. MIYAZAKI, M. SHIBAHARA and Y. UEKI*

ISTP27-092 DEVELOPMENT OF SELF-WATER MANAGEMENT SEPARATOR FOR PEFC USING WATER CONCENTRATION DIFFUSION

*N. TAKAHASHI, K. SUGIURA and T. KAMIMURA*

ISTP27-094 EFFECTS OF AIR FLOW RATE ON HEAT AND FLOW CHARACTERISTICS OF WATER IN POLYETHYLENE TUBE PLACED OVER METAL RODS SETS

*T. KOBAYASHI, K. TORIYAMA, J.N. NGANGA and S. FUNATANI*

ISTP27-095 RESPONSE OF WALL-STAGNATING LEAN METHANE-AIR PREMIXED FLAME TO EQUIVALENCE RATIO OSCILLATION

*Y.SUENAGA, T. KIKUCHI, H. YANAOKA and M. KIKUCHI*

ISTP27-097 EXPERIMENTAL STUDY OF THE NANO-FLUID SPRAY COOLING ON THE HEATING FILM

*S. SAITO and M. IWAMOTO*

ISTP27-102 DEVELOPMENT OF HIGH FUNCTIONAL DIRECT CARBON FUEL CELL

*K. UESUGI and K. SUGIURA*

ISTP27-103 CLARIFICATION OF HEAT TRANSFER MECHANISM IN THERMAL INSULATION FOR

ENE-FARM

*K. UCHIDA, K. SUGIURA, N. OYA, M. TANIZAWA, Y. IMAE and K. IMAE*

ISTP27-110 EVALUATION OF MEASUREMENT ACCURACY OF UNDERGROUND THERMOMETERS USING STEEL-PIPE PILES

*K. ANDO, T. KAKIZAKI and M. OGUMA*

ISTP27-113 SEARCH FOR MICROORGANISM OF OPTIMAL ELECTRON TRANSPORT PROPERTY

*K. MORITA, M. NISHIOKA and K. SUGIURA*

ISTP27-188 EFFECT OF UV ILLUMINATION ON THE PRESSURE DROP MEASUREMENT IN A PEBBLE BED REACTOR COATED WITH TIO<sub>2</sub>

*M. KUNIYASU, N. UNNO, \* S. SATAKE, K. YUKI and Y. SEKI*

**Room A (318A)**

**16:20 – 17:50 Heat and Mass Transfer-3**

ISTP27-067 OPTIMIZATION OF COOLING STRUCTURE OF OPEN TYPE AIR COOLED INDUCTION MOTOR WITH THERMAL CIRCUIT ANALYSIS

*C. KIM, S.-J. PARK and K.-S. LEE*

ISTP27-068 FEASIBILITY STUDY OF EFFECTIVE MASS-FLOW FRACTION IN A REFRIGERATION CYCLE

*J. LEE and K.-S. LEE*

ISTP27-071 NON-HOMOGENEOUS RADIATION PROPERTIES OF SLAG PARTICLE CLOUD

*Y. ITAYA, H. NAGATA, H. MONTAZERI NAJAFABADI, N. KOBAYASHI and H. SHIMA*

ISTP27-131 ACCELERATION OF THE EVAPORATION RATE OF A WATER DROPLET BY USING A NANOPATTERNED TRANSPARENT FILM

*N. UNNO, M. ASANO, Y. MATSUDA, K. YUKI, S. SATAKE and J. TANIGUCHI*

ISTP27-210 TWO PHASE FLOW AND LOCAL HEAT TRANSFER CHARACTERISTICS IN A PLATE HEAT EXCHANGER CHANNEL

*A. MIYARA, K. KARIYA and K. SONODA*

**Room B (318B)**

**16:20 – 17:50 Combustion and Reacting Flows-1**

ISTP27-013 DEVELOPMENT OF A PILOT PLANT FOR REDUCTION Hg EMISSION FROM LARGE POWER PLANT

*L. PILAR, Z. VLCEK, Z. ZSELIGA and V. VESELY*

ISTP27-021 AC IMPEDANCE SPECTROSCOPY ANALYSIS TO ENERGY STORAGE PRESERVATION LIFETIME

*T. SAKAMOTO and K. KURODA*

ISTP27-026 OBSERVATION OF FLOW DEVELOPMENT IN NATURAL GAS INTERFERENTIAL UNSTEADY JETS ISSUED FROM A GROUP-HOLE NOZZLE

*C. KONDO and Y. OKAMOTO*

ISTP27-038 DRGEP-BASED MECHANISM REDUCTION WITH LARGE TEMPERATURE VARIATION BY CONSIDERING TIME DEPENDENCY OF REACTION RATE

*Y. MATSUKAWA, Y. SAITO, Y. MATSUSHITA and H. AOKI*

ISTP27-078 THERMAL DIFFUSION PHENOMENA IN COAXIAL FREE JET FORMED WITH CONCENTRIC ANNULAR NOZZLE

*S. TORII*

#### **Room C (319A)**

#### **16:20 – 17:50 Micro- and Nano-Scale Transport**

ISTP27-015 MOLECULAR DYNAMICS STUDY ON INFLUENCES OF NANOSTRUCTURED SURFACE ON HETEROGENEOUS NUCLEATION OF LIQUID DROPLETS

*G. UNO, M. SHIBAHARA and Y. UEKI*

ISTP27-028 EXPERIMENTAL INVESTIGATION OF GAS AND NON-NEWTONIAN LIQUID TWO-PHASE FLOWS IN HORIZONTAL CIRCULAR MICRO-CHANNEL

*A. MORI, A. KAWAHARA, M. H. MANSOUR, Y. YONEMOTO and M. SADATOMI*

ISTP27-123 RESEARCHES ON THE EFFECT OF TUBE DIAMETER ON FLOW PHENOMENA OF GAS-LIQUID TWO-PHASE FLOW IN MICROCHANNEL

*H. IDE, E. KINOSHITA, R. KUROSHIMA and M. KAWAJI*

ISTP27-191 INTERACTION-INDUCED FLICKERING BEHAVIOR OF JET-DIFFUSION FLAMES

*Y. NAKAMURA, K. MOCHIZUKI and T. MATSUOKA*

ISTP27-196 SCALE EFFECT OF BOUNDARY CONDITION AT SOLID-LIQUID INTERFACE

**Room D (319B)**

**16:20 – 17:50 Experimental/Computational Fluid Dynamics-3**

ISTP27-036 AN INVESTIGATION OF THE EFFECTS OF RADIAL INFLOW AND OUTFLOW ON THE PERFORMANCE OF HALF-DUCTED AXIAL FLOW FAN

*A. KAJI, Y. KINOUE, N. SHIOMI and T. SETOGUCHI*

ISTP27-051 ESTIMATION OF SOURCE LOCATION OF OUTDOOR POLLUTION BY USING VARIATIONAL CONTINUOUS ASSIMILATION METHOD

*A. KONDO, T. MATSUMOTO, T. MATSUO, H. SHIMADERA, A. KOMATSU and S. SHIOCHI*

ISTP27-055 EXPERIMENTAL STUDY ON GAS-LIQUID TWO-PHASE FLOW THROUGH HORIZONTAL RECTANGULAR MINI-CHANNEL WITH Y-BRANCH

*Y. TABATA, R. NAGAI, M. SADATOMI and A. KAWAHARA*

ISTP27-057 SURFACE WETTABILITY EFFECTS ON FLOW CHARACTERISTICS IN TWO-PHASE FLOW THROUGH MINI-CHANNEL

*K. MITSUYASU, T. TAKEHIRA, A. KAWAHARA, Y. YONEMOTO, M. SADATOMI*

ISTP27-058 INFLUENCE OF INLET GUIDE VANES ON PERFORMANCE CHARACTERISTICS OF AN AXIAL-FLOW FAN WITH AN OBSTACLE

*Y. ARAI, Y. KASAI, S. NAKAMURA, K. SATO, H. OHTAKE, and K. NISHIBE*

**Thursday, September 22nd, 2016**

**Room A (318A)**

**9:00 – 9:40 KEYNOTE LECTURE-3**

ISTP27-KN3 RECENT ADVANCES IN MICRO PULSATING HEAT PIPES

*Sung Jin KIM (Korea Advanced Institute of Science and Technology, Korea)*

**Room A (318A)**

**10:00 – 11:30 Heat and Mass Transfer-4**

ISTP27-023 TEMPERATURE-DEPENDENCY OF CORRECT ICE ADHESION FORCE TO COPPER MEASURED IN NANO-SCALE BY SPM

*K. MINAMIYA, K. MATSUMOTO, H. KUBOTA, K. SEKINE and S. YAMANAKA*

ISTP27-043 STUDY ON HEAT TRANSFER OF IMPINGING JET INTERFERING WITH COUETTE FLOW

*J. KITAYAMA and T. KUBO*

ISTP27-064 STUDY ON REDUCTION OF AIR-CONDITIONING LOAD BY WOODY CLADDING WITH ROOM-SIZED MODEL STRUCTURE

*A. YOSHIDA, S. KINOSHITA and S. SHOHO*

ISTP27-076 DESIGN OF HEAT SINKS USING TOPOLOGY OPTIMIZATION IN NATURAL CONVECTION

*Y. JOO and S. J. KIM*

ISTP27-106 EXPERIMENTAL INVESTIGATION OF BED-TO-SURFACE HEAT TRANSFER IN A BFBC

*J. HRDLICKA and J. OPATRIL*

#### **Room B (318B)**

##### **10:00 – 11:30 Bioengineering and Bio-thermal Fluid Dynamics-1**

ISTP27-093 INVESTIGATION OF PARTICLE BEHAVIOR IN A STIRRED TANK FOR OPTIMIZATION OF SUSPENSION CULTURE OF iPS CELL

*M. YANO, T. YAMAMOTO, Y. OKANO, T. KANAMORI and M. KINO-OKA*

ISTP27-098 ADVANTAGES OF FLUID DYNAMIC CHARACTERISTICS OF MARINE ORGANISM'S SHAPE FOR DESIGNING UNDERWATER ROBOTS

*T. SHIMIZU, W. SATOH, K. OBATA, K. SATOH, T. FUKUE, and T. MIYOSHI*

ISTP27-101 FLOW BOILING AND CRITICAL HEAT FLUX FOR SUBCOOLED WATER IN VERTICAL TUBE DUE TO EXPONENTIALLY INCREASING HEAT INPUTS

*M. SHIBAHARA, K. FUKUDA, Q.S. LIU, K. HATA, S. WATANABE, Y. NAKAMURA and T. MUROGA*

ISTP27-104 DECREASE EFFECT ON LEAF DAMAGE UNDER LOW TEMPERATURE DUE TO ELECTRIC CURRENT LOAD

*K. YAMASHITA, T. NINAGAWA, A. NARUMI and T. KONISHI*

ISTP27-132 THE AERODYNAMIC EFFECTS OF PHASE LAG BETWEEN FOREWING AND HINDWING ON ODONATA

*C.-Y. CHANNG and J.-T. YANG*

#### **Room C (319A)**

**10:00 – 11:30 Turbulence and Flow Instabilities**

ISTP27-024 UNSTEADY FLOW CHARACTERISTICS IN RETURN CHANNEL OF COMPACT MULTI-STAGE CENTRIFUGAL BLOWER

*W. KATAHIRA, K. NODA, K. NISHIBE, M. TAKAHASHI, H. OHUE, and K. SATO*

ISTP27-053 INVESTIGATION OF FLOW CHARACTERISTIC OF SYNTHETIC JET ON CIRCULAR CYLINDER

*Y. ISHIKAWA, Y. NOMURA, T.SAYAMA, K.NISHIBE, H. OHUE and K.SATO*

ISTP27-177 LDV MEASUREMENT OF NEAR-WALL VELOCITY DISTRIBUTION IN TURBULENT CHANNEL FLOW FOR CALCULATING WALL SHEAR STRESS

*H. YOSHINAGA, K. IWAMOTO and A. MURATA*

ISTP27-178 DEPENDENCE OF CROSS-SECTIONAL SHAPE OF SINUSOIDAL RIBLET ON DRAG-REDUCTION EFFECT IN TURBULENT CHANNEL FLOW BY DIRECT NUMERICAL SIMULATION

*M. SERIZAWA, K. IWAMOTO and A. MURATA*

ISTP27-212 EFFECTS OF ORBITAL MOTION ON THE VELOCITY FIELD OF BOUNDARY LAYER FLOW OVER A ROTATING DISK

*T. UTATSU, M. MUNEKATA, H. YOSHIKAWA and Y. OKUMURA*

**Room D (319B)**

**10:00 – 11:30 Experimental/Computational Fluid Dynamics-4**

ISTP27-074 EFFECT OF HELICAL TWISTED SPIRAL PIPE ON GENERATING SWIRL FLOW FOR IRON SAND SLURRIES

*YANUAR, K. T. WASKITO, D. SAPJAH and S. MAU*

ISTP27-084 EXPERIMENTAL STUDY ON THE COALESCENCE OF INTERFACIAL NANOBUBBLES

*H. TESHIMA, T. NISHIYAMA and K. TAKAHASHI*

ISTP27-107 NUMERICAL SIMULATION OF TILT-ROTOR PLANE USING MULTI AXES SLIDING MESH APPROACH

*M. YAMAKAWA, S. CHIKAGUCHI and S. ASAO*

ISTP27-112 EXTENSIONAL VISCOSITY OF LOW VISCOUS POLYMER SOLUTIONS MEASURED BY PRESSURE DROPS IN ABRUPT CONTRACTION FLOWS

*R. HIDEWA, Y. TANINO, T. SHIRAKI, H. SUZUKI and Y. KOMODA*

ISTP27-120 EFFECT OF HETEROGENEOUS CONDENSATION ON ANNULAR SWIRLING FLOW IN A SUPERSONIC NOZZLE

*Y. FUKUSHIMA, S. MATSUO, N. SHIOMI and T. SETOGUCHI*

**Room A (318A)**

**13:00 – 13:40 KEYNOTE LECTURE-4**

ISTP27-KN4 BOILING AND CONDENSATION HEAT TRANSFER OF REFRIGERANT HFO-1234YF IN SMALL TUBE

*Chien-Yuh YANG (National Central University, Taiwan)*

**Room A (318A)**

**14:00 – 15:30 Heat and Mass Transfer-5**

ISTP27-114 LOW-TEMPERATURE LATENT HEAT TRANSPORTATION MEDIA WITH TBAB/CO<sub>2</sub> HYBRID HYDRATES

*H. SUZUKI, T. SENDA, R. HIDEWA, Y. KOMODA, T. KUSABE, H. TOBAYAMA and T. IWATA*

ISTP27-116 NUMERICAL INVESTIGATION OF ABLATION EFFECT ON AERODYNAMIC HEATING FOR HIGH VELOCITY REENTRY CAPSULE

*M. MATSUNAGA, T. SASAKI, Y. TAKAHASHI and N. OSHIMA*

ISTP27-119 IMPROVING THE TRANSIENT PLANE SOURCE METHOD FOR MEASURING THERMAL CONDUCTIVITY OF THIN FILMS BY DECONVOLUTING THERMAL CONTACT RESISTANCE WITH APPLICATIONS IN FUEL CELL TECHNOLOGY

*M. AHADI, M. ANDISHEH-TADBIR, M. TAM and M. BAHRAMI*

ISTP27-127 VISUALIZATION OF TRANSIENT MASS TRANSFER DURING METHANE HYDRATE DISSOCIATION USING HIGH-SPEED PHASE-SHIFTING INTERFEROMETER

*Y. KANDA, E. SHOJI, J. OKAJIMA, A. KOMIYA, L. CHEN, H. YAMADA and S. MARUYAMA*

ISTP27-147 THERMAL TRANSPORT IN MULTI-WALLED CARBON NANOTUBE AND CARBON NANOFIBER DEFECTED BY FOCUSED ION BEAM

*M. NARASAKI, J. MIYAWAKI, T. IKUTA, T. NISHIYAMA and K. TAKAHASHI*

**Room B (318B)**

**14:00 – 15:30 Bioengineering and Bio-thermal Fluid Dynamics-2**

ISTP27-137 QUANTITATIVE PREDICTION OF FREEZE--THAW DAMAGE IN FOODBY USING MICORSCALE HEAT AND MASS TRANSFER MODEL

*Y. TADA, N.NAKA and H. ONISHI*

ISTP27-146 DESIGN OF A NOVEL OPPOSITE PHASE VIBRATION DEVICE FOR ENDOSCOPIC SURGERY

*M. MORITA, J. YANG and Z. JIANG*

ISTP27-151 CONTROL OF A ROBOTIC BUTTERFLY WITH ABDOMINAL MOTIONS

*Y.C. WANG, Y.H.J. FEI and J.T. YANG*

ISTP27-170 A STUDY ON EFFECT OF FAT TISSUE BY OPPOSITE PHASE VIBRATION DEVICE

*R. MAEDA, M. MORITA and Z. JIANG*

#### **Room C (319A)**

##### **14:00 – 15:30 Electronics Packaging and Thermal Mangement-1**

ISTP27-020 MODELING AND ANALYSIS OF A BI-LAYER THERMAL COMPONENT FOR MOBILE ELECTRONICS PLATFORMS

*N.T. TRIFALE and K. YAZAWA*

ISTP27-070 DIAGNOSIS OF COOLING PERFORMANCE FOR COMPUTER BASED ON MULTIPOINT TEMPERATURE MEASUREMENT

*T. SUZUKI and T. TAKAMATSU*

ISTP27-105 BOILING HEAT TRANSFER –Be EFFECTIVE FOR COOLING TECHNOLOGY IN POWER ELECTRONICS ?

*K. SUZUKI, K. YUKI, T. FURUSHO, S. YEN, N. UNNO and R. KIBUSI*

ISTP27-140 MEASUREMENT OF EFFECTIVE THERMAL CONDUCTIVITY OF A HEAT PIPE WICK STRUCTURE (SINTERED COPPER POWDER FILLED WITH WATER)

*Y. KOITO, R. YAMAGUCHI and T. TOMIMURA*

ISTP27-175 BASIC STUDY ON MODELING METHOD OF FAN PERFORMANCE FOR DEVELOPING 1-DIMENSIONAL THERMAL DESIGN TECHNIQUE

*T. FUKUE, K. HIROSE, T. HATAKEYAMA, M. ISHIZUKA and K. KOIZUMI*

#### **Room D (319B)**



**14:00 – 15:30 Experimental/Computational Fluid Dynamics-5**

ISTP27-122 FLUID-STRUCTURE INTERACTION ANALYSIS FOR SUPPORTING WATER STOPPAGE IN PIPING

*Y. FUKUSHIGE, H. KAWABATA, O. WATANABE and Y. HIJIOKA*

ISTP27-124 MICHELSON INTERFEROMETRIC MEASUREMENTS AND NUMERICAL CALCULATIONS FOR AXISYMMETRIC SUPERSONIC MICROJETS

*T. MURANAKA, D. ONO, S. NAKAO and Y. MIYAZATO*

ISTP27-145 EXPERIMENTAL INVESTIGATION ON NATURAL CONVECTION IN VERTICAL AIR LAYERS WITH PIV

*N. HONDA, H. SADAMOTO, K. INOUE and T. MASUOKA*

ISTP27-149 VISUALIZATION OF HIGHLY VISCOUS FLUID FOR VISCOSITY EVALUATION

*M. YAMAMOTO, I. SYUDO, Y. SUWA and A. KAGAWA*

ISTP27-154 BOUNDARY LAYER RESPONSE FOR SUDDENLY DECELERATED FLOW IN TUBE

*S. YOSHIZAKI and H. HIRAHARA*

**Room E (321A)**

**15:50 – 16:30 Poster Session-2**

ISTP27-125 EXPERIMENTAL STUDY ON MASS TRANSFER ACROSS GAS-LIQUID INTERFACE

*S. SOMA and T. KUNUGI*

ISTP27-128 DEVELOPMENT OF MICROACTUATORS UTILIZING THE FLOW OF LIQUID CRYSTAL INDUCED BY ELECTRIC FIELDS

*S. CHONO and T. TSUJI*

ISTP27-135 MEASUREMENT OF WATER VAPOR ADSORPTION RATE OF FILM LAYER COATED WITH SILICA-GEL MICRO PARTICLES USING QCM METHOD

*Y. HAMAMOTO, T. NAKAMORI and H. MORI*

ISTP27-136 PREDICTION OF LOCAL HEAT TRANSFER COEFFICIENT FOR LAMINAR FLOW IN A CIRCULAR TUBE WITH DISTRIBUTIONS OF HEAT FLUX NEAR THE ENTRANCE REGION

*Y. HAMAMOTO, K. TESHIMA and H. MORI*

ISTP27-138 EFFECTS OF LUBRICATING OIL ON FLOW BOILING HEAT TRANSFER OF

LOW-GLOBAL-WARMING-POTENTIAL REFRIGERANT IN MINI-CHANNEL MULTI-PORT TUBES

*S. SAITOH, C. DANG and E. HIHARA*

ISTP27-169 NANOPARTICLE SYNTHESIS FROM TIN WIRE IN WATER USING MICROWAVE PLASMA AND HIGH-VOLTAGE PULSE DISCHARGE

*S. MUKASA, Y. SUMOTO, E. KIMURA, H. TOYOTA and S. NOMURA*

ISTP27-172 EXPERIMENTAL STUDY OF CURRENT DISTRIBUTION VISUALIZATION IN POLYMER ELECTROLYTE MEMBRANE FUEL CELL

*S.G. KIM, J.H. LEE, Y.J. SOHN and M. J. KIM*

ISTP27-173 THERMAL PERFORMANCE OF FLAT MICRO HEAT PIPE WITH ENHANCING CAPILLARY FORCE

*S. GYOTOKU, G. NAGAYAMA, Y. NAGASHIMA and T. TSURUTA*

ISTP27-174 A STUDY OF SUPERCRITICAL TRANSITIONAL STRUCTURES OF A BOUNDARY LAYER TRIPPED BY FINITE HEIGHT OBSTACLES PERIODICALLY ARRAYED IN SPAN

*S.TAKAHASHI, I.JIMBO, Y.INOUE and H.MAEKAWA*

ISTP27-185 MECHANISM OF NANOBUBBLE IN ULTRA-PURE WATER

*K. ARITA, G. NAGAYAMA and T. TSURUTA*

ISTP27-186 NUMERICAL STUDY OF GLOBAL INSTABILITY OF A ROTATING DISK

*K. LEE, Y. NISHIO, S. IZAWA and Y. FUKUNISHI*

ISTP27-190 NUMERICAL SIMULATION OF THE BOUNDARY LAYER TRANSITION CAUSED BY A SHORT DURATION JET

*J. YOSHIKAWA, Y. NISHIO, S. IZAWA and Y. FUKUNISHI*

ISTP27-198 DEFOEMABLE MICROFILTER FOR SEPARATING TARGET SUBSTANCE IN FLUID

*Y. NAKASHIMA, K. NAKATAKE, H. CHIKAUURA, Y. KITAMURA, K. YASUDA, M. IWATSUKI, H. BABA, T. IHARA and Y. NAKANISHI*

ISTP27-204 EXPERIMENTAL INVESTIGATION OF WATER DROPLET IMPINGEMENT ON SOLID SURFACES

*Y. YONEMOTO, S. NAGASE, Y. SHIMOTO and T. KUNUGI*

ISTP27-214 CCS TECHNOLOGIES FOR APPLICATION IN CZECH REPUBLIC

**Room A (318A)**

**16:50 – 18:20 Visualization/Imaging Techniques-1**

ISTP27-065 VISUALIZATION MEASUREMENT OF NANOPARTICLE DIFFUSION IN A PDMS LAYER DURING CURING PROCESS

*R. IWAO, Y. MATSUDA, H. YAMAGUCHI and T. NIIMI*

ISTP27-081 BEHAVIOUR OF LUBRICATING OIL DROPLETS IN CYLINDER ON ABNORMAL COMBUSTION OF BOOSTED SI ENGINE

*T. TAKITA and J. TANAKA*

ISTP27-085 OBSERVATION OF POWDER FLOW STRUCTURES IN VIBRO-FLUIDIZED BED USING PEPT

*A. KOGANE, K. KUWAGI, T. KINUGASA, Y. MAWATARI, T. W. LEADBEATER, J. GARGIULI, D. J. PARKER and J. P. K. SEVILLE*

ISTP27-086 INVESTIGATION OF SUPERSONIC MIXING ENHANCED BY CAVITY-INDUCED OSCILLATORY FLOW USING AA-PSP

*T. OKA, T. HANDA, Y. MATSUDA, Y. EGAMI, F. AKAGI, S. YAMAGUCHI, K. YAMABE and Y. MASUDA*

ISTP27-155 PRELIMINARY EXPERIMENTS ON QUANTITATIVE VISUALIZATION OF SHOCK TRAINS BY RAINBOW SCHLIEREN DEFLECTOMETRY

*A. MATSUYAMA, H. TAKANO, D. ONO, S. NAKAO and Y. MIYAZATO*

**Room B (318B)**

**16:50 – 18:00 Thermal Hydraulics of Energy Reactor**

ISTP27-034 THE EFFECTS OF MIXING VANE ATTACHED TO GRID SPACER ON GAS-LIQUID TWO-PHASE ANNULAR FLOW IN A BWR SIMULATED CHANNEL

*D. NISHIOKA, W. TAKAKI, M. ENDO, A. KAWAHARA and M. SADATOMI*

ISTP27-045 NONCONDENSABLE GAS EFFECT ON THE THERMAL SIZING OF AN AIR-COOLED HEAT EXCHANGER FOR AN INTEGRAL REACTOR

*J.H. MOON, W.S. KIM, Y.I. KIM, M.J. KIM and H.J. LEE*

ISTP27-054 MODEL DEVELOPMENT FOR ONSET OF ENTRAINMENT WITH TWO-DIMENSIONAL FILM FLOW EXPERIMENTS

*J.-H. YANG, D.-J. EUH, H.-S. PARK, H.-K. CHO and G.-C. PARK*

ISTP27-108 THE EXPERIMENTAL STUDY ON THE STEAM CONDENSATION WITHIN THE PASSIVE SAFETY INJECTION TANK

*S. U. RYU, W. J. JEON, H. S. PARK and S. J. YI*

**Room C (319A)**

**16:50 – 18:00 Electronics Packaging and Thermal Management-2**

ISTP27-187 EFFECT OF ELECTRICAL CURRENT FROM NEIGHBORING DEVICE ON PREDICTED TEMPERATURE OF POWER SI MOSFET IN ELECTRO-THERMAL ANALYSIS

*R. KIBUSHI, T. HATAKEYAMA, K. YUKI and M. ISHIZUKA*

ISTP27-202 A MICRO LOOP HEAT PIPE WITH A THIN EVAPORATOR STRUCTURE

*H. NAGANO, K. FUKUSHIMA, T. SHIOGA and T. ABE*

ISTP27-203 FUNDAMENTAL EXPERIMENTS OF A POLYMER-BASED VAPOR CHAMBER (OPERATIONAL CHARACTERISTICS IN DIFFERENT ORIENTATIONS)

*F. HIDEYAMA, S. NONOSHITA, Y. KOITO and T. TOMIMURA*

ISTP27-209 BASIC STUDY OF HEAT FLOW THROUGH CONTACTING SOLIDS UNDER LOW CONTACT PRESSURE WITH ROUGHNESS AND WAVINESS

*T. DO, T. TOMIMURA and Y. KOITO*

**Room D (319B)**

**16:50 – 18:20 Experimental/Computational Fluid Dynamics-6**

*Chairperson: Yukari Fukushige (IHI Co.)*

ISTP27-156 MEASUREMENTS OF SHOCK TRAIN OSCILLATIONS BY HIGH-SPEED MACH-ZEHNDER INTERFEROMETERS

*S. GOTO, K. KITAMURA, D. ONO, S. NAKAO, and Y. MIYAZATO*

ISTP27-159 APPLICATION OF RAINBOW SCHLIEREN DEFLECTRY FOR SLIGHTLY UNDEREXPANDED SUPERSONIC JETS FROM AXISYMMETRIC LAVAL NOZZLES

*H. MAEDA, H. FUKUDA, D. ONO, S. NAKAO and Y. MIYAZATO*

ISTP27-161 THREE-DIMENSIONAL VORTEX STRUCTURE ON THE MONOFIN PROPULSION

*T. HANIU, H. HASEGAWA and H. TAKAGI*

ISTP27-164 MEASUREMENT OF OSCILLATING SHOCK TRAIN BY LASER SCHLIEREN METHODS

*K. KITAMURA, S. GOTO, D. ONO, S. NAKAO and Y. MIYAZATO*

ISTP27-168 NUMERICAL SIMULATION OF AIRCRAFT MODEL TOWARDS DIGITAL FLIGHT BASED ON UNSTRUCTURED MOVING COMPUTATIONAL DOMAIN METHOD

*M. NISHIMURA, R. SAKASHITA, M.YAMAKAWA, K.MATSUNO and S. ASAO*

**Friday, September 23rd, 2016**

**Room A (318A)**

**9:10 – 9:50 Keynote Lecture-5**

ISTP27-KN5 EXPERIMENTAL AND COMPUTATIONAL THERMAL AND RELIABILITY CONSIDERATIONS IN DATA CENTERS

*Dereje AGONAFER (University of Texas, USA)*

**Room A (318A)**

**10:10 – 11:40 Fuel Cells and Battery Technology-1**

ISTP27-017 COMPRESSION OF PEM FUEL CELL GAS DIFFUSION LAYERS: ANALYTICAL MODEL AND EXPERIMENTAL VALIDATION

*A. MALEKIAN, C. McCAGUE, S. SALARI, N. DJILALI and M. BAHRAMI*

ISTP27-069 CAPILLARY PRESSURE BOUNDARY CONDITION FOR THE WATER TRANSPORT IN PEM FUEL CELL

*E. KURIHARA, R. SHIMORI, H. HAMAKAWA, G. WU and N. OSHIMA*

ISTP27-100 DISTRIBUTION ANALYSIS OF CROSSOVER GAS TRANSPORT PROPERTIES IN PEFC MEMBRANE

*S. ITO, M. KATO and K. FUSHINOBU*

ISTP27-118 THERMAL CONDUCTIVITY OF THE CATALYST LAYER OF POLYMER ELECTROLYTE MEMBRANE FUEL CELLS: MODELING AND EXPERIMENT

*M. AHADI, M. TAM, M. SAHA, J. STUMPER and M. BAHRAMI*

ISTP27-139 LI-ION BATTERY TEMPERATURE PHENOMENA OF ELECTRIC VEHICLES

*T. SAKAMOTO and M. MORITA*

**Room B (318B)**

**10:10 – 12:00 Manufacturing and Materials Processing**

ISTP27-014 A PNEUMATIC NON-CONTACT HOLDER BY A DIFFUSER EFFECT

*T. MORISAWA, R. MORINAGA, T. TSUKIJI and S. KIYAMA*

ISTP27-032 NANOSECOND PULSE LASER SCRIBING OF TRANSPARENT CONDUCTIVE OXIDE THIN FILM USING BESSEL BEAM

*B. KIM, R. IIDA, H.D. DOAN and K. FUSHINOBU*

ISTP27-052 A STUDY OF THE INFLUENCE OF TEMPERATURE HISTORY AND ENVIRONMENTAL TEMPERATURE ON THE STRENGTH OF ADHESIVE JOINTS

*G. HOTTA, K. OTA, Y. OHBUCHI and H. SAKAMOTO*

ISTP27-079 PULP SUSPENSION FLOW IN THE DISPERSION SECTION OF A MODELED PAPERMAKING MACHINE HEADBOX

*M. SUMIDA and T. FUJIMOTO*

ISTP27-096 THE EFFECT OF ATOMIC CARBON DIFFUSION INTO METAL SUBSTRATES ON THE DIAMOND GROWTH OF IN-LIQUID PLASMA CVD

*P. GAUTAMA, S. NOMURA, H. TOYOTA and S. MUKASA*

ISTP27-180 INFLUENCE OF SPATIAL BEAM PROFILES ON LASER--SCRIBING OF THIN FILM SILICON SOLAR CELLS

*R. IIDA, B. KIM, DH. DOAN and K. FUSHINOBU*

**Room C (319A)**

**10:10 – 11:40 Boiling and Multi-Phase Flow-3**

ISTP27-167 EXPERIMENTAL INVESTIGATION OF SUBCOOLED FLOW BOILING IN MICRO-SLIT-CHANNEL ENHANCED BY EHD AND DIAMOND COATED BOILING SURFACE

*I. KANO, N. OKAMOTO and M. YANO*

ISTP27-192 HEAT TRANSFER CHARACTERISTICS OF A MICRO PULSATING HEAT PIPE

*A. YOON and S.J. KIM*

ISTP27-201 THE EFFECT OF ULTRASONIC WAVE APPLICATION FOR THE RAPID COOL-DOWN PROCESS OF HIGH-TEMPERATURE SOLIDS SUBMERGED IN LIQUID

*K. TSUTSUI*

ISTP27-205 POOL BOILING CRITICAL HEAT FLUX ENHANCEMENT USING CHEMICALLY OXIDIZED SPRAYED COATINGS

*T. YABUKI, T. TANAKA, M. EGAMI and K. MIYAZAKI*

ISTP27-206 THE VISUALIZATION OF PHASE CHANGE PHENOMENA IN HERRINGBONE TYPE PLATE HEAT EXCHANGER USING 3D-PRINTER

*M. NAKAMURA, Y. KAWABATA, T. YASUNAGA and Y. IKEGAMI*

**Room D (319B)**

**10:10 – 11:40 Experimental/Computational Fluid Dynamics-7**

ISTP27-165 EFFECTS OF CONVECTION HEAT TRANSFER ON SUNAGOKE MOSS GREEN ROOF

*M. AMIR A. K., Y. KATOH, H. KATSURAYAMA and M. KOGANEI*

ISTP27-183 PROGRESSIVE DEVELOPMENT OF SLIDING MESH APPROACH FOR SIMULATIONS OF A FLOW AROUND MOVING BODY

*S. ASAO, M. YAMAKAWA, K. MATSUNO and S. ISHIHARA*

ISTP27-189 SIMULATION OF A SUPERCRITICAL FLUID FLOW WITH LARGE TEMPERATURE DIFFERENCE USING THE METHOD FOR INCOMPRESSIBLE FLOW COMPUTATIONS

*S. KOMURASAKI*

ISTP27-200 PHASE SEPARATION OF TWO-PHASE FLOW OF R410A IN T-SHAPED JUNCTION

*R. NAGAO, S. YAMAGUCHI, K. SAITO, S. IKEDA and N. TAKENAKA*

ISTP27-213 CHARACTERISTICS OF AIR FLOW IN A HEMISPHERIC HEAD CYCLONE SEPARATOR

*A. NARITA, K. MACHIDA, S. EGAWA, M. MUNEKATA, K. ONO, T. WATANABE, H. YOSHIKAWA*

**Room A (318A)**

**12:40 – 13:50 Fuel Cells and Battery Technology-2/MEMS**

ISTP27-091 THIN FILM SENSOR ON METAL SUBSTRATE FOR MEASURING HEAT FLUX OF ENGINE INNER WALL

*O. NAKABEPPU, K. NAGASAKA, Y. NAKAMURA, T. TSUCHIYA and K. DEJIMA*

ISTP27-153 A PROTON-CONDUCTING SOLID OXIDE FUEL CELL WITH AN YTTRIUM AND TIN CO-DOPED BARIUM ZIRCONATE ELECTROLYTE

*M. CHANTHANUMATAPORN, T. NAGASAWA, M. KANIE and K. HANAMURA*

ISTP27-199 2 OMEGA AND 3 OMEGA THERMAL CONDUCTIVITY MEASUREMENTS FOR THIN DIELECTRIC FILMS

*S. IKEUCHI, K. SHIMADA, S. TANAKA, T. YABUKI and K. MIYAZAKI*

ISTP27-211 THROUGH PLANE GAS DIFFUSION OF CATALYST LAYER OF PEMFC: BIMODAL UNIT CELL MODELING

*S. SALARI, J. STUMPER and M. BAHRAMI*

#### **Room B (318B)**

##### **12:40 – 14:10 Combustion and Reacting Flows-2**

ISTP27-111 QUENCHING EVALUATION OF FLAME ARRESTERS FOR A DAMAGE MITIGATION SYSTEM AGAINST HYDROGEN EXPLOSIONS IN NUCLEAR POWER PLANTS

*H. SAITOH, T. OTSUKA and N. YOSHIKAWA*

ISTP27-115 NUMERICAL ANALYSIS ON END-GAS AUTO-IGNITION ATTENDED WITH FLAME PROPAGATION AFFECTED BY PRESSURE WAVE

*K. YOSHIDA, S. YOKOI and T. AOKI*

ISTP27-129 A SYSTEMATIC PARAMETRIC STUDY OF POROUS MEDIA COMBUSTION-BASED THERMOPHOTOVOLTAIC ENERGY CONVERSION

*P. GENTILLON, R.A. TAYLOR, Q.N. CHAN, G. CONIBEEER and M. TOLEDO*

ISTP27-144 INVESTIGATIONS ON FLAME-WALL INTERACTIONS OF LEAN PREMIXED FLAMES WITH HIGH EGR RATE IN A CONSTANT VOLUME VESSEL

*B. YENERDAG, Y. MINAMOTO, M. SHIMURA and M. TANAHASHI*

ISTP27-193 EXTINGUISHMENT OF A JET DIFFUSION FLAME WITH COMBUSTED-GAS VORTEX RING

*H. TORIKAI, S. KENMOTSU and A. ITO*

#### **Room C (319A)**

##### **12:40 – 14:10 Heat and Mass Transfer-6**

ISTP27-006 CFD STUDY ON THE COOLING PERFORMANCE OF SMALL FIN HEAT SINKS IN COMBINED NATURAL AND FORCED CONVECTION FLOWS

*K. KOIZUMI, T. HATAKEYAMA, T. FUKUE and M. ISHIZUKA*

ISTP27-176 ISOTHERMAL ADSORPTION AND DESORPTION CHARACTERISTICS OF A



DESICCANT-COATED HEAT EXCHANGER

*T. HIGASHI, L. ZHANG, M. SAIKAWA, M. YAMAGUCHI, C. DANG and E. HIHARA*

ISTP27-179 HEAT TRANSFER THROUGH COMPLEX FLOW BETWEEN OUTER AND SLOTTED INNER CYLINDER IN AN ELECTRICAL ROTATING MACHINE

*T. YUASA, M. YAMAMOTO, Y. HONMA, S. HIRANO, M. EJIRI, T. KANAGAWA, A. KANEKO and Y. ABE*

ISTP27-197 RISK ASSESSMENT STUDY ABOUT FIRE OUTBREAKS OF HYDROGEN REFUELING STATION WITH GAS STATION

*T. KUROKI, N. SAKODA, K. SHINZATO, M. KOHNO, M. MONDE and Y. TAKATA*

ISTP27-208 BEHAVIOR OF A PULSATING DUCT FLOW WITH INTERMITTENT FLOW RATE FLUCTUATION

*H. SAITOH*

**Room D (319B)**

**12:40 – 14:10 Thermal-Fluids Machinery/Noise and Vibration in Fluid**

ISTP27-029 BIO-INSPIRED SHAFT SEAL IN COOLANT PUMP FOR FUEL CELL AND HYBRID VEHICLES

*Y. NAKANISHI, T. HONDA, K. KASAMURA, Y. NAKASHIMA and H. HIGAKI*

ISTP27-073 PERFORMANCE ANALYSIS OF MAGNETOCALORIC HEAT PUMP WITH A MULTI-MATERIAL ACTIVE MAGNETIC REGENERATOR

*K. MATSUDA, T. KAWANAMI, A. TORII, Y. NIYAMA, K. SHIRAI and S. HIRASAWA*

ISTP27-134 STABILITY OF HYDRAULIC OPERATION STABILIZING SYSTEM FOR CIRCUIT BREAKER

*T. YAMASHITA, T. KITANO and Y. HIRANO*

ISTP27-171 UNIFORM THERMAL DISTRIBUTION CONTROL FOR LOW-TEMPERATURE FOOD DRYER WITH DESICCANT DEHUMIDIFIER

*I. KANO*

ISTP27-181 FREQUENCY AND PRESSURE FLUCTUATION CAUSED BY SELF-INDUCED FLOW OSCILLATION IN SUPERSONIC IMPINGING JET

*T. YASUNOBU, K. NAKAO and Y. OTOBE*

**Room A (318A)**

**14:30 – 15:25 Visualization/Imaging Techniques-2**

ISTP27-157 INSTANTANEOUS MEASUREMENT OF TEMPERATURE DISTRIBUTION USING THERMO-CHROMIC LIQUID CRYSTALS BASED ON SPECTRAL INTENSITY IN NARROW BAND WAVELENGTHS

*J. N. NGANGA, K.TORIYAMA, S.TADA, S. FUNATANI and T.KOBAYASHI*

ISTP27-158 RAINBOW SCHLIEREN MEASUREMENTS IN UNDEREXPANDED JETS FROM AXISYMMETRIC SUPERSONIC MICRO NOZZLES

*H. FUKUDA, H. MAEDA, D. ONO, S. NAKAO, Y. MIYAZATO and Y. ISHINO*

ISTP27-160 UNSTEADY CHARACTERISTICS OF TURBULENT HEAT TRANSFER IN A CIRCULAR PIPE AT SUDDEN ACCELERATION AND DECELERATION OF FLOW

*N. SHIIBARA, H. NAKAMURA and S. YAMADA*

**Room B (318B)**

**14:30 – 15:45 Sustainable & Renewable Energy**

ISTP27-037 THE ROLE OF GLYCEROL AND CARBOXYL GROUP IN JATROPHA OIL COMBUSTION

*I.N.G. WARDANA*

ISTP27-080 EFFECT OF MINERAL ADDITON IN CONTINUOUSLY REGENERATING TYPE PM REMOVAL DEVICE USING FLUIDIZED BED

*T. YAMAMOTO, A. KUSU and J. TATEBAYASHI*

ISTP27-082 STATISTICAL EVALUATION OF AN EMULSIFIED FUEL DROPLET ON ATOMIZATION TIMING

*Y. KUSAKA and J. TANAKA*

ISTP27-049 FLOW STRUCTURE INVESTIGATION OF TRIPLE ELBOW PIPING WITH SWIRLING INLET CONDITIONS

*S. EBARA, J. MIZUTANI, H. HASHIZUME, H. YAMANO*