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Opening ceremony

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Plenary Lecture (May 20, 9:00~9:40), Crystal ballroom

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Plenary Lecture (May 20, 13:30~14:10), Crystal ballroom

Chairman : Chi-Chuan Wang (National Chiao Tung University)

Frosting on fin-tube heat exchanger for heat pump, Keumnam Cho (Sungkyunkwan University)

A5 : HVAC&R Control / Ventilation (May 20, 14:30~16:00), Crystal room

Chairman : Fu-Jen Wang (National Chin-Yi University)

310 Performance analysis and energy modeling of HVAC system for a library building, Fu-Jen Wang (National Chin-Yi University of Technology), Hao-Chung Lee (Southern Taiwan University of Technology), Wei-Da Tu (Industrial Technology Research Institute), Cheng-Han Shiau (National Chin-Yi University of Technology)

387 Cooling energy saving system of EHP control at the university lecture room, Kybum Jeong (Yuhan University)

399 Induction performance design of chilled beam system, Sang Hyun Joo, Hyun-Jun Shin, Jung-yup Kim, Ji-Suk Kim (Korea Institute of Construction Technology)

404 A general three-dimensional model of closed circuit cooling tower integrated with packing, Minghong Yang, Baolong Wang, Wenxing Shi, Xianting Li (Tsinghua University)

415 Comparison of simplified prediction methods for building thermal energy, Kwang-Mo Kim, Young Soo Chang, Byung Ha Kang (Kookmin University)

461 A Study of quantification scheme on dew condensation analysis and its application, Byung Woo Jeon, Dong-Gi Han, Tae-Hun Kim, Eung Ryeol Seo, Yong-Jong Park (Samsung Electronics Co., Ltd.), Jung Hyeon Ahn (CD-Adapco)

B5 : Refrigeration (May 20, 14:30~16:00), Jade room

Chairman : Chan Go Song (Korea Institute of Machinery and Materials)

302 Effect of fin horizontal pitch on performance of fin-tube heat exchanger of heat pump under frosting condition, Jeongkeun Kim, Wonkeol Park, Keumnam Cho (Sungkyunkwan University)

365 Simulation results for the effect of fin geometry on the performance of a concentric heat exchanger, Honggi Cho, Taehun Kim, Jungho Kim, Changseon Lee (Samsung Electronics)

551 Thermodynamic analysis of R1234yf as replacement of R134a in domestic heat pump water heater, Qiu Jinyou, Zhang Hua, Yu Xiaoming, Lou Jiangfeng (University of Shanghai)

601 Numerical study on behaviors of oil and refrigerant in a horizontal scroll compressor, Jonghyuk Yoon, Nahmkeon Hur (Sogang University), Myung Kyun Kiem, Kyu Ho Lee (LG Electronics)

645 Thermodynamic properties of mixed refrigerants R407c and R410a, R. Djeflal (Unit of Applied Research in Renewable Energy), Z. Triki (Laboratory of Biomaterials and Transport Phenomena), M.K. Cherier (Unit of Applied Research in Renewable Energy)

C5 : Thermal Fluid (May 20, 14:30~16:00), Amethyst A

Chairman : Yean-Der Kuan (National Chin-Yi University)

467 Study on the heat transfer and flow characteristics in a single channel plate-fin evaporator, Kazuhisa Maruyama (Kobe University), Hitoshi Asano (Kobe University), Kazuaki Shikichi (The Kansai Electric Power Co., Inc.)

251 Experimental study of interfacial friction in NaBH₄ solution in microchannel dehydrogenation reactor, Seok Hyun Choi, Myoung Jun Kim, Moon Sun Chung, Hee Joon Lee (Kookmin University)

475 Comparison of thermal characterization of the thermal chip with non-uniform heat source using different fan models in CFD simulation, Yean-Der Kuan (National Chin-Yi University), Jing-Yi Chang (Ho Tai Development Co., Ltd), Yun-Hsiang Weng, Chun-Ching Lan (National Chin-Yi University)

501 Measurements of vapor pressures and critical parameters for 1,1,1,3,3-pentafluoropropane (R-245fa), Yukihiro Higashi (Iwaki Meisei University), Ryo Akasaka (Kyushu Sangyo University)

639 The study for imaging method using photothermal for the stainless steel pattern in copper, Moojoong Kim, Hyun Jung Kim, Dong-Kwon Kim, Jaisuk You (Ajou University)

534 A study on adsorption of water onto carbon based adsorbents, Muhammad Sultan, Ibrahim I. El-Sharkawy, Takahiko Miyazaki, Bidyut B. Saha, Shigeru Koyama (Kyushu University)

D5 : HVAC&R Control / Ventilation (May 20, 14:30~16:00), Amethyst B

Chairman : Afshin Afshari (Masdar Institute)

549 Comparing performance characteristics of air source heat pump water heater across test standards, J. S. Kim (Korea University), K. W. Lee (Hanyang University), J. Y. Choi (Korea Testing Laboratory)

568 CFD study of air-side heat transfer and pressure drop characteristics of multi-louvered fin and flat tube heat exchangers, Ehsan Gholamalizadeh, Man-Hoe Kim (Kyungpook National University)

512 Airflow and ventilation characteristics of underground network road junctions, Nam-Young Kim, Hwataik Han, Young-Kwang Jung, Choon-Bum Choi (Kookmin University)

628 The study on the performance of plate type dehumidifier with lithium chloride aqueous solution, Jaehyun Lee, Guhyun Ro (Kyung Hee University), Seonchang Kim, Younglyou Kim (Korea Institute of Industrial Technology), Yongtae Kang (Kyung Hee University)

646 Model-based predictive maintenance of chillers, Yan Ke, Timothy Mulumba, Wen Shen, Afshin Afshari (Masdar Institute)

E5 : Environmental Engineering (May 20, 14:30~16:00), Ruby room

Chairman : Cha Sik Park (Hoseo University)

458 Waste heat operated hybrid (MEDAD) desalination plant: an experimental investigation, Muhammad Wakil Shahzad, Kyaw Thu (National University of Singapore), Won Gee Chun (Cheju National University), Kim Choon Ng (National University of Singapore)

363 Catalytic oxidation of acetaldehydes in indoor air using UVC and Mn/TiO₂ honeycomb-catalyst, Minsu Kim, Eunseuk Park, WooJoon Cha (Korea Institute of Science and Technology), Hyoungduk Jung (Korea University), Jongsoo Jung (Korea Institute of Science and Technology)

385 Solar thermal energy storage analysis of medium temperature encapsulated phase change material, Jotham Muthoka Munyalo, Zhang xuelai, Zhao Qunzhi (Shanghai Maritime University)

393 A study on the applicability of adsorption desalination cum cooling cycles in zero liquid discharge process, Jayaprakash Saththasivam (King Abdullah University), Young-Deuk Kim (Hanyang University), Kyaw Thu, Kim Choon Ng (National University of Singapore)

432 CFD assessments of installation sites of wind power on an urban building, Wei-Siang Wang, An-Shik Yang, Yu-Hsuan Juan, Jih-Yun Jheng (National Taipei University)

439 Performance evaluation of multi-stage vacuum membrane distillation: the effect of seawater-coolant feed arrangement, Young-Deuk Kim (Hanyang University), Kyaw Thu (National University of Singapore), Jayaprakash Saththasivam (King Abdullah University), Kim Choon Ng (National University of Singapore), Noredine Ghaffour (King Abdullah University)

A6 : Special Lecture (May 20, 16:10~16:50), Crystal room

Chairman : Yong Tae Kang (Korea University)

Energy and ecology, Karel Kabele (Czech Technical University)

B6 : Refrigeration (May 20, 16:10~17:25), Jade room

Chairman : Ibrahim El-Sharkawy (Kyushu University)

226 The maximum practical cooling performance forecast and analysis of thermoelectric module according to the datasheet, Limei Shen, Huanxin Chen (Huazhong University of Science and Technology), Fu Xiao, Shengwei Wang (The Hong Kong Polytechnic University)

697 Falling film evaporation heat transfer on MWCNT/Cu composite coating surface, Eun-Seok Wang, Won-Seok Choi, Byung Lyun Kim, Chan-Woo Park (Chungbuk National University)

258 Characterization of adsorbent/refrigerant pairs for developing high performance adsorption cooling systems, Ibrahim I.El-Sharkawy, Kutub Uddin, Takahiko Miyazaki, Bidyut Baran Saha, Shigeru Koyama (Kyushu University), Stefan K. Henninger (Fraunhofer Institute for Solar Energy Systems)

597 A numerical study on the two-phase refrigerant distribution characteristics of refrigerant distributor inside an air-conditioner, Soohyun Bahn, Nahmkeon Hur (Sogang University), Beomsoo Seo (LG Electronics)

617 Condensation heat transfer of R410a in horizontal tubes, Yuanyuan Zhou, Hui Li (Tsinghua University), Kai Wang (Shanghai Longyang Precision Composite Copper Pipe Co. Ltd), Hu Wang, Lin Shi, Jucuan Zhang (Tsinghua University)

C6 : Thermal Fluid (May 20, 16:10~17:25), Amethyst A

Chairman : Seong Hyuk Lee (Chung-Ang University)

511 Experimental study on condensation of the azeotropic mixture R32/R1270 inside a horizontal internally helical-grooved small-diameter tube, Junya Ichinose (National Fisheries University), Mami Tanahashi, Daisuke Jige, Norihiro Inoue (Tokyo University of Marine Science and Technology)

530 Experimental study on condensation characteristics of R245fa on enhanced surface tubes, Daisuke Jige (Tokyo University), Tomonobu Matsuno (Tokyo University), Norihiro Inoue (Tokyo University), Hiroyuki Takahashi (Kobelco & Materials Copper Tube, LTD)

471 Improvement of adsorbent embedded heat transfer through introduction of binder, Ang Li, Kyaw Thu, Muhammad Wakil Shahzad, Kim Choon Ng (National University of Singapore), Wongee Chun (Jeju National University)

559 Dynamic characteristics of a non-newtonian impinging droplet on a heated copper surface, Joo Hyun Moon, Seong Hyuk Lee (Chung-Ang University)

618 Manifold in storage tank applied to solar combi-system with return piping, Hyo Seok Son, Chul Kim, Hiki Hong (Kyung Hee University)

D6 : HVAC&R Control / Ventilation (May 20, 16:10~17:25), Amethyst B

Chairman : Young-Deuk Kim (Hanyang University)

398 Development of a high efficiency reversible axial fan for ventilation in the deep and long transverse tunnel, Cheol-Young Jeong, Hee-Hwan Ko (Kiturami-Bumyang Airconditioning Co. Ltd), Jun-Young Park (Korea Institute of Machinery & Materials), Bong-Soo Lee, Oh-Young Kwon (Korea Testing Certification)

606 Performance of a liquid desiccant cooling system under various operating conditions, Jungtaek Lee, Siyoung Jeong (Sogang University), Saikkee Oh, Deok Huh, Dongsoo Moon (LG Electronics)

552 A new generation cooling device employing MOF, Syed Muztuza Ali, Anutosh Chakraborty (Nanyang Technological University)

691 Usage of air-conditioning systems in Nigeria, Collins Ugochukwu Anorue, Franklin Ndubuisi Dialla, Ikechukwu Chibueze Alakwe, Ikechukwu Nichodemus Uzoma (Federal Ministry of Works)

E6 : Environmental Engineering (May 20, 16:10~17:25), Ruby room

Chairman : Taesung Kim (Sungkyunkwan University)

441 Optical monitoring of radon aerosols at building construction sites, Soohyun Ha, Atul Kulkarni, Taesung Kim (Sungkyunkwan University)

442 Novel environmental monitoring sensor technologies with fiber optics and various sensing layers, Jang Ah Kim, Hongyi Qin, Taehyun Hwang, Hyeong U Kim (Sungkyunkwan University), Kulkarni Atul (BIO-FD&C Co), Taesung Kim (Sungkyunkwan University)

445 A discussion on the color filter industry VOCs removal efficiency of organic emission processing equipment improvement, Yean-Der Kuan, Chung-Shu Wang (National Chin-Yi University), Jing-Yi Chang (Ho Tai Development Co. Ltd), Yun-Hsiang Weng, Chun-Ching Lan (National Chin-Yi University)

485 Performance investigation of an advanced multi-effect adsorption desalination cycle, Kyaw Thu (National University of Singapore), Young-Deuk Kim (Hanyang University), Muhammad Wakil Shahzad (National University of Singapore), Jayaprakash Saththasivam (King Abdullah University), Kim Choon Ng (Hanyang University)

Technical Tour (May 21, 09:00~12:00)

9:00 Departure from Jeju Grand Hotel

10:00 - 10:40 Jeju Global Research Center of Korea Institute of Energy Research

10:50 - 11:30 Smart Grid Information Center of Korea Electric Power Corporation

12:00 Return to Jeju Grand Hotel