International Workshop on Green Energy System and Devices

Program

24 (Friday), Aiwa Kaikan, Lecture Hall

9:30-9:40 Chair: Prof. Kazuto Yukita
Opening Remark Yasuo Suzuoki, Director of Research Institute of Industrial Technology, AIT

Green Energy System I (9:50-12:00) Chair: Prof. Kazuto Yukita
9:40-10:15 Invited GES-I-1 “Heterogeneous Power Quality in Microgrids“, Chris Marnay (Lawrence Berkeley National Lab., USA)
10:15-10:50 Invited GES-I-2 “DC Microgrids in buildings as resilient, flexible and local infrastructure”, Bernd Wunder (Fraunhofer Institute for Integrated Systems and Device Technology IISB, Germany)
10:50-11:25 Invited GES-I-3 “Back-To-Back Inverters for Smart Grid Applications“, Yaow-Ming Chen (National Taiwan University, Taiwan R.O.C.)
11:25-12:00 Invited GES-I-4 “Two-Level Power Oscillation Damping Control in Power Systems with Large Scale Wind and PV Farms“, Issarchai Nagamroo (King Mongkut's Institute of Technology Ladkrabang, Thailand)

Lunch Time

Green Energy System II (13:00-15:05) Chair: Prof. Akihiro Torii
13:00-13:35 Invited GES-II-1 “The role of dc-microgrids in achieving a more resilient electric power supply“, Alexis Kwasinski (University of Pittsburgh, USA)
13:35-14:10 Invited
GES-II-2 “Stochastic & Adjustable Robust Hybrid Scheduling Model of Power System Considering Demand Response’s Participation in Large-Scale Wind Power Consumption”, Beibei Wang (Southeast University, China)
14:10-14:45 Invited

GES-II-3 “Tradition and Trend of HVDC System”, Takehisa Sakai (Mitsubishi Electric Co., Japan)
14:45-15:05

“Summary of Green Energy System”, Prof. Yukita

Green Energy Devices I (15:25-17:30) Chiar: Prof. Tatsuo Mori
15:25-16:00 Invited
GED-I-1 “All-inorganic metal oxide electrode interlayers in stable perovskite solar cells”, Tzung-Fang Guo (National Cheng Kung University, Taiwan R.O.C.)
16:00-16:35 Invited
GED-I-2 “Crystallization Control and Interfacial Doping for High-Performance Perovskite Solar Cells”, Zhao-Kui Wang (Soochow University, P.R.C.)
16:35-17:10 Invited
17:10-17:30
GED-I-4 “Investigation of Additive Inclusion and Solvent Annealing effects on the Performance of Inverted Structure CH$_3$NH$_3$PbI$_{3-x}$Cl$_x$ Perovskite Solar Cells Fabricated under High Humidity”, Vincent Obiozo Eze (Aichi Institute of Technology, Japan)
*If the presentation time is not enough, this oral presentation may be cancelled and be presented in the poster session.
17:40-18:40 Poster Session (Aiwa Kaikan, Gakusei Hall)
18:50-20:20 Banquet (Restaurant Central)
25 (Saturday), Aiwa Kaikan, Lecture Hall

Green Energy Devices II (9:15-12:25) Chair: Prof. Tzung-Fang Guo

9:15-9:50 Invited
GED-II-1 “Organo-Lead-Halide Perovskite for Solar Cells and Light Emitting Diodes by Chemical Vapor Deposition”, Matthew R. Leyden (Kyushu University, Japan)

9:50-10:25 Invited
GED-II-2 “The emitting dipole orientation of Ir complexes to enhance the outcoupling efficiency of PhOLEDs”, Chang-Ki Moon (Seoul National University, Korea)

Chair: Prof. Tatsuo Mori
10:35-11:10 Invited
GED-II-3 “High-performance polymer light-emitting electrochemical cells based on ionic liquids”, Tomo Sakanoue (Nagoya University, Japan)

11:10-11:45 Invited
GED-II-4 “High-Performance Nanostructured Organic Solar Cells Enhanced by Surface Plasmon Resonance”, Keizo Kato (Niigata University, Japan)

11:45-12:05
GED-II-5 “Hybridization of Redox-Active Materials with Activated Carbon for High-Performance Electrochemical Capacitors”, Hiriyuki Itoi (Aichi Institute of Technology, Japan)

12:05-12:25
GED-II-6 “Observation of traps in MOCVD GaN by DLTS and MCTS using Schottky diodes, pn diodes and HEMTs”, Yutaka Tokuda (Aichi Institute of Technology, Japan)

12:25-12:35 Closing Remark
**Poster Session**

**P-1** “Zero Current Control for Disconnected Arms of a Modular Matrix Converter”, Atsushi Otani, Takaharu Takeshita (Nagoya Institute of Technology)

**P-2** “Consideration of Demand Response by Air Conditioner Considering the Number of People”, Masayoshi Hamanaka, Shunsuke Horie, Kazuto Yukita, Toshiro Matsumura, Yasuyuki Goto (Aichi Institute of Technology)

**P-3** “Study on Distributed Cooperative Voltage Control Method using Data Field”, Yuki Shinfutsukaichi¹, Mutsumi Aoki¹, Tadanori Yamaguchi², Yoshiki Nakachi² (¹Nagoya Institute of Technology, ²Chubu Electric Power Co., Inc.)

**P-4** “Control methods for power storage devices in distributed power system”, Daiki Owaki, Kazuto Yukita, Toshiro Matsumura and Yasuyuki Goto (Aichi Institute of Technology)

**P-5** “Consideration on securing the margin of the output for LFC by changing distribution constraints of EDC”, Yuko Mizuno, Mutsumi Aoki, Hiroyuki Ukai (Nagoya Institute of Technology)

**P-6** “Verification of Synchronous Generator Transient Stability Using Power System Simulator”, Nimi Kenshu, Masayoshi Hamanaka, Shunsuke Horie, Daiki Owaki, Kazuto Yukita, Toshiro Matsumura and Yasuyuki Goto (Aichi Institute of Technology)

**P-7** “Study on Voltage Unbalance Suppression Measures in Distribution System using Single Phase Static Capacitors”, Yukimasa Ikai¹, Mutsumi Aoki¹, Yu Fujita², Hiroshi Kobayashi², Yuya Ishii³, Kazuhiro Uenishi³ (¹Nagoya Institute of Technology, ²TOENEC CORPORATION, ³Chubu Electric Power Co., Inc.)

**P-8** “Experimental study on interception time in different inductance for 100 V class DC breaking arc”, Kazuho Hasegawa¹, Koki Okuda¹, Kosuke Zochi¹, Akihiro Tsusaka¹, Toshiro Matsumura¹, Kazuto Yukita¹, Yasuyuki Goto¹, Atsushi Miyamoto² and Hiroyuki Ito² (¹Aichi Institute of Technology, ²Nitto Kogyo Corporation)

**P-9** “A study of Protection System for Looped Distribution System using General Purpose Protection Relay”, Shinya Fujita¹, Mutsumi Aoki¹, Toru Amau¹, Kazuhiro Kojima², Tetsuo Otani¹, Tatsuya Ozawa⁴ (¹Nagoya Institute of Technology, ²Chubu Electric Power CO., Inc., ³CRIEPI, ⁴MEIRYO DENSHI)

**P-10** “A Study of small wind generator using turn number conversion type generator and buck-boost type MPPT”, Kazuhiro Minemura, Masayoshi Hamanaka, Kazuto
Yukita, Toshiro Matsumura, Yasuyuki Goto, Takanori Matsuyama (*Aichi Institute of Technology*)

**P-11** “Basic Study on Reference Voltage of SVR in Looped Distribution System”, Shigeki Ishihara¹, Mutsumi Aoki¹, Shunsuke Sasaki², Toshirou Kojima², Yuya Ishii² (¹*Nagoya Institute of Technology, ²CHUBU Electric Power Co.,Inc.*)

**P-12** “A Study on Simulation of Direct Current Interruption Process by using Mayr Arc Model”, A. Tsusaka¹, K. Okuda¹, K. Zochi¹, K. Hasegawa¹, T. Matsumura¹, K. Yukita¹, Y. Goto¹ and Y. Yokomizu² (¹*Aichi Institute of Technology, ²Nagoya University*)

**P-13** “A Study on Voltage Regulator constructed in IED”, Hiroaki Sato¹ Mutsumi Aoki¹ Toru Amau² Kazuhiro Kojima² Tetsuo Otani³ Tatsuya Ozawa⁴ (¹*Nagoya Institute of Technology, ²Chubu Electric Power Co.,Inc. ³CRIEPI, ⁴MEIRYO DENSHI*)

**P-14** “A Study on High-efficiency Outdoor Units of Air Conditioner”, Yuji Iwane¹, Shunsuke Horie¹, Tadashi Hosoe¹, Kazuto Yukita¹, Toshiro Matsumura¹, Yasuyuki Goto¹ and Kazuo Omoto² (¹*Aichi Institute of Technology, ²KINDEN CORPORATION*)

**P-15** “Study on the Reference Voltage of SVR and STATCOM Under the Voltage Unbalance Condition”, Kazuya Hashimoto¹, Mutsumi Aoki¹, Shunsuke Sasaki², Toshirou Kojima², Yuya Ishii² (¹*Nagoya Institute of Technology, ²CHUBU Electric Power Co.,Inc.*)

**P-16** “A New Power Flow Calculation Method Considering Frequency Fluctuation Analysis”, Shunsuke Horie¹, Tadahiro Goda, Kazuto Yukita and Yasuyuki Goto (Aichi Institute of Technology)

**P-17** “A Feasibility Study on a Regional Energy Business”, Midori Nonogaki, Nobuyuki Yoshizawa, Ken Ozeki and Hidekazu Hoshi (NTT FACILITIES, INC)


**P-19** “A study on optimum design of storage battery capacity for DC Microgrid” Kazufumi Yuasa, Miki Ueshima and Tadatoshi Babasaki(NTT FACILITIES, INC.)

**P-20** “Estimation of Levitation Height by Plate Vibration”, Kento Tanaka, Yushi Takaki Akihiro Torii, Suguru Mototani, Kae Doki (Aichi Institute of Technology)

**P-21** “Proposal of DC Switch Less Contact Erosion”, Akinori Kato (Kawamura Electric
P-22 “Fabrication of Organic Perovskite Solar Cells with Air-Assisted-Flow”, Okada Hiroyuki\(^1\), Kenta Saito\(^2\), Vincent Obiozo Eze\(^1\), Yoshiyuki Seike\(^1,2\), Tatsuo Mori\(^1,2\)  
\(^1\)Graduate School, \(^2\)Faculty of Engineering, Aichi Institute of Technology.)

P-23 “Optical Absorption Spectra of CH\(_3\)NH\(_3\)PbI\(_3\) Thin Films for Defect Estimation by Photothermal Spectroscopy”, Norimitsu Yoshida\(^1,4\), Hiroki Kato\(^2\), Yuta Hirota\(^3\), Kouki Kawahara\(^1\), Masahide Kogiso\(^2\), Kazutaka Hirano\(^2\) and Shuichi Nonomura\(^1,4\)  
\(^1\)Department of Electrical, Electronic and Computer Engineering, \(^2\)Environmental and Renewable Energy Systems Division, \(^3\)Department of Energy Engineering, \(^4\)Next Generation Energy Research Center, Gifu University)

P-24 “Fabrication of Perovskite Solar Cell Using Solvent Engineering Method”, Yoshiki Kondo\(^2\), Masaki Kawai\(^2\), Hiroyuki Okada\(^1\), Vincent Obiozo Eze\(^1\), Yoshiyuki Seike\(^1,2\), Tatsuo Mori\(^1,2\)  
\(^1\)Graduate School, \(^2\)Faculty of Engineering, Aichi Institute of Technology.)

P-25 “Fabrication of Organic Thin-Film Solar Cells Using Unsubstituted Fullerene”, Naoki Hirohata, Kenichi Ueda, Kokoro Kimura, Daiki Tangiku, Yasuyuki Seike, Tatsuo Mori (Department of Electrical Engineering, Aichi Institute of Technology)

P-26 “Static electrostatic preventing at the spray cleaning in the electrical device manufacturing”, Shogo Miyakawa\(^1\), Hayato Watanabe\(^1\), Taishi Segawa\(^2\), Yoshinori Kobayashi\(^2\), Keiji Miyachi\(^2\), Tatsuo Mori\(^1\), Yoshiyuki Seike\(^1\)  
\(^1\)Aichi Institute of Technology, \(^2\)Asahi Sunac Corporation)

P-27 “Fabrication of Plasmonic Thin-film Organic Solar Cells on Flexible Substrates”, Ryosuke Takado, Chutiparn Lertvachirapaiboon, Akira Baba, Kazunari Shinbo, Keizo Kato, Futao Kaneko (Niigata University)

P-28 “Electron Temperature of High Pressure Plasma Induced by Femtosecond Laser”, Kohsuke Tsuchida Norio Tsuda and Jun Yamada, \(^1\)Aichi Institute of Technology)

P-29 “Influence of Metal Contamination in the Active Layer of the Organic Thin Film Solar Cell”, Taichi Ishikawa\(^2\), Hiroto Katsuta\(^2\), Daiki Tangiku\(^1\), Tatsuo Mori\(^1,2\), Yoshiyuki Seike\(^1,2\)  
\(^1\)Graduate School, \(^2\)Faculty of Engineering, Aichi Institute of Technology)

P-30 “Deposition Technique on the Organic Thin Film Solar Cell by Electrospray”, Daiki Tangiku, Tatsuo Mori, Yoshiyuki Seike (Graduate School of Engineering, Aichi Institute of Technology)
P-31 “Challenge to the organic thin film solar cell production which can be put on the smart contact lens”, Nana Inagaki\(^1\), Seiya Shiiba\(^2\), Daiki Tangiku\(^1\), Tatsuo Mori\(^{1,2}\), Yoshiyuki Seike\(^{1,2}\) (\(^1\)Graduate School, \(^2\)Faculty of Engineering, Aichi Institute of Technology)

P-32 “Light-illumination-induced degradation of organic thin film transistors during on states”, Takashi Ota\(^1\), Hiroo Anan\(^2\), Tetsuya Katou\(^2\), Masayuki Katayama\(^2\), and Yutaka Tokuda\(^1\) (\(^1\)Aichi Institute of Technology, \(^2\)DENSO CORPORATION)

P-33 “Fabrication and Optimization of the Inverted Structure of Organic Light-Emitting Diode”, Satoru Aoyama\(^2\), Sota Nozawa\(^2\), Daiki Tangiku\(^1\), Yoshiyuki Seike\(^{1,2}\), Tatsuo Mori\(^{1,2}\) (\(^1\)Graduate School, \(^2\)Faculty of Engineering, Aichi Institute of Technology)

P-34 “Traps in AlGaN/GaN HEMTs studied by DLTS and MCTS”, Kouta Takabayashi and Yutaka Tokuda (Aichi Institute of Technology)

P-35 “Preparation of silicon-coated carbon for anode of lithium-ion battery using chemical vapor deposition method”, Takuya Ontoku, Hiroyuki Itoi, Yoshimi Ohzawa (Department of Applied Chemistry, Aichi Institute of Technology)

P-36 “Hybridization of TEMPO derivatives inside the pores of activated carbon with high dispersity for high-performance electrochemical capacitor electrodes”, Hideyuki Hasegawa, Hiroyuki Itoi, Yoshimi Ohzawa (Aichi Institute of Technology)

P-37 “Pyrocarbon-coating on carbon material derived from wood using pressure-pulse chemical vapor infiltration technique and its electrochemical properties for lithium-ion battery”, Koki Sawano, Hiroyuki Itoi, Yoshimi Ohzawa (Aichi Institute of Technology)

P-38 “Velocity sensor utilizing terminal voltage fluctuation of laser due to self-coupling effect”, Tatsuya Ohba Takeshi Yoshimatsu Norio Tsuda and Jun Yamada (Aichi Institute of Technology)

P-39 “Influence of Decrease in Thickness on Permittivity of Stretched Acrylic Elastomer”, Kento Naya\(^1\) Muneaki Kurimoto\(^1\) Toshihisa Funabashi\(^2\) Takeyoshi Kato\(^2\) Yasuo Suzuoki\(^3\) (\(^1\)Department of Electrical Engineering, Nagoya University, \(^2\)Institute of Materials and Systems for Sustainability, Nagoya University, \(^3\)Aichi Institute of Technology)

P-40 “Development of Power Hardware In the Loop (PHIL) using Internet- Comparison of Data Transfer Performance by Data Transfer Protocol-”, Yusaku Tamakoshi\(^1\) Muneaki Kurimoto Yusuke Manabe\(^2\) Toshihisa Funabashi\(^2\) Takeyoshi Kato\(^2\) Shin Mitsunari\(^3\) Mutsumi Aoki\(^3\) (\(^1\)Department of Electrical Engineering, Nagoya University, \(^2\)Institute of Materials and Systems for Sustainability, Nagoya University, \(^3\)Aichi Institute of Technology)
Systems for Sustainability, Nagoya University, Department of Electrical and Mechanical Engineering, Nagoya Institute of Technology

P-41 “Influence of Short-wave Radiation Schemes in WRF on Irradiance Forecasting Accuracy”, Naoto Kai, Muneaki Kurimoto, Yusuke Manabe, Toshihisa Funabashi, Takeyoshi Kato, Fumichika Uno (Nagoya University, National Institute of Advanced Science and Technology)