

## Program

## December 6th (Thu)

**9:30 Opening Ceremony**

H. Sakurai, Preceding

Welcome Address: Hiroshi Hiratsuka (President of Gunma University)

## Session 1: Invited Lecture (Sky Hall B)

9:40 **IL01 (Invited)**

Chair: T. Kamiya

## “Solid State Microdosimetry for RBE Prediction in Particle Therapy”

Anatoly B Rozenfeld (Centre for Medical Radiation Physics School of Physics  
Faculty of Engineering and Information Sciences, UNIVERSITY OF  
WOLLONGONG, Australia)

**10:10 Coffee Break**

**10:25 Poster Session Preview (odd number) (Sky Hall B)**

Chair: K. Miura

11:25–12:25      **Poster Session (odd number) (Sky Hall A)**12:25–13:15      **Lunch**13:15 **Poster Session Preview (even number) (Sky Hall B)**

Chair: Y. Takahashi

14:15–15:15 **Poster Session (even number) (Sky Hall A)**

## Session 2: Invited Lecture (Sky Hall B)

15:20 **IL02 (Invited)**

Chair: Y. Ishizaki

# “How New Ideas Get Commercialized: the Role of Academic-Industry Partnerships”

Michael Jacobson (Cambridge Biostrategy Associates, USA)

**15:50 Coffee Break**

### Session 3: Gunma University Medical Innovation (Sky Hall B)

Chair: Y. Yamakoshi, S. Takeda

16:05 L01

# “Emission Lifetime Images of Living Tissues Using a Phosphorescent Iridium(III) Complex and Confocal Lifetime Imaging Microscopy”

Toshitada Yoshihara, Hideo Akiyama, Susumu Rokudai, Masahiko Nishiyama and  
Seiji Tobita (Gunma University, Japan)

- 16:20    **L02**  
“Molecular Design and Chemical Synthesis of Novel Ligands for Super Conserved Receptor Expressed in Brain (SREB)”  
Shigeki Takeda, Aya Kurosawa, Yuki Tani and Hirokazu Hirai (Gunma University, Japan)
- 16:35    **L03**  
“Establishment of Novel Rat Models of Epilepsy for Screening Antiepileptic Drugs, Part 3”  
Toshikazu Kakizaki and Kaori Wakamatsu (Gunma University, Japan)
- 16:50    **L04**  
“Development of Novel Shear Wave Imaging for Quantitative Evaluation of Tissue Stiffness”  
Yoshiki Yamakoshi, Takahito Nakajima, Kana Taniuchi, Nozomu Nakayama, Takumi Ito, Yuki Horiguchi, Ziheng Liu and Masato Ota (Gunma University, Japan)
- 17:05    **L05**  
“Electron Density and Effective Atomic Number Quantification by Using a Spectral CT System”  
Hiroshi Sakurai, Kazushi Hoshi, Daiki Ono, Yuki Kobayashi, Akie Nagao, Naoki Sunaguchi, Yosuke Harasawa, Kosuke Suzuki and Masami Torikoshi (Gunma University, Nagoya University, Japan)
- 17:20    **L06**  
“Improvement for the Clinical Application of the Spacer Which Can Be Removed Without Operation”  
Norio Kubo, Takehiko Yokobori, Naoya Ohta and Takayuki Asao (Gunma University, Japan)
- 17:35    **L07**  
“ICT-Based System for Providing Proper Inhalation Technique”  
Kazuhiro Motegi, Kunio Dobashi, Takeshi Hisada, Shin-ichi Kuroda, Yoichi Seki and Yoichi Shiraishi (Gunma University, Jobu Hospital for Respiratory Diseases, Japan)

#### **Session 4: Medical Science and Advanced Micro-Device Engineering**

**(Meeting Room 1)**

Chair: O. Hanaizumi, T. Kyomen

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|-------------|---|
| 16:05       | <b>L08</b><br>“Synthesis and Biological Evaluation of Cytotoxic Cyclic Pentapeptide Against Triple Negative Breast Cancer Cell Lines”<br>Susumu Rokudai, Keiichi Yamada, Masahiko Nishiyama and Kazuo Shinozuka (Gunma University, Japan)   |
| 16:20       | <b>L09</b><br>“Fabrication of Highly Sensitive Silicon Nanowire Biosensor by Electron Beam Lithography for Detecting Antigen-Antibody Specific Binding at Attomolar Concentration”<br>Hui Zhang, Noriyasu Ohshima, Kakeru Oshima, Naoki Kikuchi, Taira Kajisa, Toshiya Sakata, Takashi Izumi and Hayato Sone (Gunma University, Japan)  |
| 16:35       | <b>L10</b><br>“Al or La Doping Effects on the Electrical and Electroluminescence Properties of $\text{Ca}_{0.6}\text{Sr}_{0.4}\text{TiO}_3\text{:Pr}$ Thin Films”<br>Toru Kyomen, Kohei Aramaki, Yuko Kakubari, Yugo Maezawa and Hiroshi Takashima (Gunma University, National Institute of Advanced Industrial Science and Technology, Japan)  |
| 16:50       | <b>L11</b><br>“Ferrimagnetic Anomaly in $\text{Li}_x\text{Mn}_2\text{O}_4$ Positive Electrode Material Observed by the Magnetic Compton Scattering”<br>Kosuke Suzuki, Hasnain Hafiz, Bernardo Barbiellini, Yuki Orikasa, Stanislas Kaprzyk, Naruki Tsuji, Kentaro Yamamoto, Ayumu Terasaka, Kazushi Hoshi, Yoshiharu Uchimoto, Yoshiharu Sakurai, Arun Bansil and Hiroshi Sakurai (Gunma University, Northeastern University, USA, Lappeenranta University of Technology, Finland, Ritsumenkan University, AGH University of Science and Technology, Poland, SPring-8, Kyoto University, Japan) |
| 17:05       | <b>L12</b><br>“Waveform Shaping Technique for Multi-Valued Data Transmission Combining Digital/Analog Equalization Circuit”<br>Yosuke Iijima and Yasushi Yuminaka (National Institute of Technology, Oyama College, Gunma University, Japan)  |
| 17:20       | <b>L13</b><br>“Numerical Simulation for a Wind Turbine Operating with Fluctuating Wind”<br>Anna Kuwana (Gunma University, Japan)  |
| 17:35       | <b>L14</b><br>“Dynamic Force Measurement Acting on Drop Ball Using the Levitation Mass Method with Single Frequency Laser”<br>Akihiro Takita and Yusaku Fujii (Gunma University, Japan)   |
| 18:00       | <b>Closing Remarks (Sky Hall B)</b> <span style="float: right;">T. Ishima (AMDE2018 Chairman)</span>  |
| 18:15–19:45 | <b>Banquet</b>  |

## Posters

### P001

#### **"Development of AD22 Malaria Vaccine Antigens and Related Model Studies"**

Takashi Matsukawa, Yu Hashimoto, Hotaka Shibao, Daichi Nakayama, Hajime Yamanaka, Yuko Oku and Hiroyuki Oku

*Gunma University, Gunma University Hospital, Japan*

### P002

#### **"Triple pH-Activatable Photosensitizer for Photodynamic Therapy"**

Hiroaki Horiuchi, Kazuya Tajima, Seiji Torii and Tetsuo Okutsu

*Gunma University, Japan*

### P003

#### **"Proteomic Analysis of Stalled-Ribosome Rescue Factor-Deficient Strains of *Saccharomyces Cerevisiae* by Two-Dimensional Gel Electrophoresis"**

Takahiro Kudo, Soichiro Hoshino, Ryohei Kanemura and Nobukazu Nameki

*Gunma University, Japan*

### P004

#### **"Coculture of Endothelial Cells and Podocytes in a Microfluidic Device for Development of a Microfluidic Glomerulus Model"**

Seiya Kawaguchi, Yasuko Kobayashi and Kiichi Sato

*Gunma University, Japan*

### P005

#### **"Development of Nucleic Acid Materials for Gene Mutation Diagnosis"**

Yuka Kataoka, Kenta Hagiwara, Hiroaki Ozaki, Yasuyo Nakajima and Masanobu Yamada

*Gunma University, Japan*

### P006

#### **"Expression of the Recombinant Tumor Antigen in Transgenic Silkworm"**

Hirofumi Nakaya, Shigeki Takeda, Kanako Abe, Kanae Yamada and Kazuaki Chikamatsu

*Gunma University, Japan*

### P007

#### **"Ligand Screening of Orphan GPCRs Involved in Neurological/Psychiatric Disorders and Development of Receptor Modulator Drugs"**

Hideru Obinata, Romanas Chaleckis, Yuki Tani, Masayoshi Ueno and Shigeki Takeda

*Gunma University, Japan*

### P008

#### **"Evaluation of Microcirculation Disorder Using Optical Sensor with Pressurization Mechanism"**

Takayuki Ikeda, Sei-ichiro Motegi and Yoshiki Yamakoshi

*Gunma University, Japan*

**P009**

**"Magnetic Levitation to Improve Hemocompatibility of a Minimally Invasive Left Ventricular Assist Device for Early Intervention"**

Nobuyuki Kurita, Tomonobu Abe, Yaxin Wang and Peter Alex Smith

*Gunma University, Japan, Texas Heart Institute, USA*

**P010**

**"Development of Silicon carbide Based Radiation Detector Utilized at Carbon Therapy Facility at GHMIC"**

Yuya Oki, Kohei Osaki, Wataru Kada, Takahiro Makino, Shin-ichiro Sato, Yuichi Yamazaki, Takahiro Satoh, Takeshi Ohshima, Akihiko Matsumura, Makoto Sakai and Tomihiro Kamiya

*Gunma University, National Institutes for Quantum and Radiological Science and Technology (QST), Gunma University Heavy Ion Medical Center (GHMC), Japan*

**P011**

**"Characterization and Performance of a Stretchable Printed Electrode for Biological Signal Monitoring"**

Masahiro Inoue, Jun Hagiwara and Shigeru Saito

*Gunma University, Japan*

**P012**

**"Development of Convenient Genotyping of High-Risk HPV Using Fluorescence DNA Probes"**

Tomohisa Moriguchi, Takaaki Sano, Kazuo Shinozuka and Kenshiro Koide

*Gunma University, Japan*

**P013**

**"ICT-Supported Rehabilitation System Using a Motion Capture Device and Virtual Reality Feedback"**

Yasushi Yuminaka, Shogo Nakazato, Motoaki Fujii, Atsushi Manabe, Setsuki Tsukagoshi, Yoshio Ikeda, Makoto Hasegawa and Naoki Wada

*Gunma University, Japan*

**P014**

**"High-Performance Capillary Electrophoresis of Cations and Anions: Search of Ion Marker from Human Saliva Samples"**

Keisuke Aoyagi, Shou Sakamoto, Hideyuki Itabashi, Masami Murakami, Yoshihiro Arai, Yoichi Seki, Akihiro Yoshida, Yoshifumi Shoho, Kazumi Ushiki, Larasati Martha, Yoshiki Kaneko and Masanobu Mori

*Gunma University, Japan*

**P015**

**"Spatiotemporal Observation of Bubble Cavitation Signal for Development of Intelligent US-DDS"**

Ren Koda, Hirofumi Hanaoka, Takahito Nakajima, Tetsuya Hashimoto and Hiroki Horiuchi

*Gunma University, Japan*

**P016**

**"Evaluation System of the Training on Central Venous Catheterization"**

Kazumi Tanaka, Mami Kikuchi, Kiyohiro Oshima, Naoya Ohta and Takayuki Asao

*Gunma University, Gunma University Hospital, Gunma University Initiative for Advance Research, Japan*

**P017**

**"Magnetoencephalography Study of Neural Activity Transition During Facial Recognition Using Self-Organizing Map Analysis"**

Yuichi Takei, Daiki Saitou, Minami Tagawa, Masato Fukuda and Yoichi Seki

*Gunma University, Japan*

**P018**

**"Recognition of Gazing Point Based on Corneal Surface Reflection Image for Nurse Call"**

Nobuaki Nakazawa, Yuko Imai, Akihiro Takita, Yuuki Tanaka, Toshikazu Matsui, Takao Yamaguchi and Yusaku Fujii

*Gunma University, Gunma University Hospital Nursing Department, Japan*

**P019**

**"Making Fake Images of Podocyte for Estimating the Stages of Kidney Disease with Machine Learning"**

Yusuke Ono, Tsutomu Matsuura, Toshiyuki Matsuzaki, Keiju Hiromura and Takeo Aoki

*Gunma University, Gunma Prefectural College of Health Sciences, Japan*

**P020**

**"The Presence of Melanocyte Lineage Cells in Piebald Skin and Its Implications for Phototherapy"**

Akira Shimizu, Yuko Kuriyama, Kaori Wakamatsu and Osamu Ishikawa

*Gunma University, Japan*

**P021**

**"Towards prediction of a wireless LAN device's location in a large scale network system"**

Osamu Takaki, Tsuyoshi Kato, Yuichiro Saito and Kota Torikai

*Gunma University, Gunma University Hospital, Japan*

**P022**

**"Dynamics of Fibrinolysis Using Quartz Crystal Microbalance"**

Takumi Miyazaki, Toshiaki Dobashi and Yoshiharu Toyama

*Gunma University, Japan*

**P023**

**"Measurements of Storage Modulus and Turbidity in Fibrin Gelation"**

Daisuke Tamegai, Toshiaki Dobashi and Yoshiharu Toyama

*Gunma University, Japan*

**P024**

**"Role of  $\alpha$ -C Domain in Fibrinogen Cryogelation"**

Yugo Ito, Yoshiharu Toyama, Toshiaki Dobashi and Masanori Ochiai  
*Gunma University, Hokkaido University, Japan*

**P025**

**"Elemental Composition Characterization of Air-Borne Particulate Matters Hourly Collected from Atmosphere by In-Air Micro-PIXE Analysis"**

Sota Nakatsu, Wataru Kada, Takahiro Imayoshi, Kimiyo Kumagai, Hiroshi Tago, Masashi Koka, Naoto Yamada, Ryohei Yamagata, Yasuyuki Ishii, Takahiro Satoh, Kenta Miura, Tomihiro Kamiya and Osamu Hanaizumi  
*Gunma University, Gunma Prefectural Institute of Public Health and Environmental Sciences, Ltd., National Institutes for Quantum and Radiological Science and Technology (QST), Japan*

**P026**

**"Radio-Photoluminescence and Scintillation Properties of Phosphate Glass Dosimeter with Activator Complex of Silver and Europium"**

Kazuya Iiduka, Yuki Akagami, Daichi Hasegawa, Wataru Kada, Makoto Sakai, Parajuli Raj Kumar, Masashi Koka, Akihito Yokoyama, Naoto Yamada, Ryohei Yamagata, Yasuyuki Ishii, Takahiro Satoh, Kenta Miura and Osamu Hanaizumi  
*Gunma University, Beam Operation Co Ltd., National Institutes for Quantum and Radiological Science and Technology (QST), Japan*

**P027**

**"Therapeutic Carbon Beam Measurement Using the G2000 Glass Scintillator"**

Akihito Yokoyama, Wataru Kada, Makoto Sakai, Kenta Miura and Osamu Hanaizumi  
*National Institutes for Quantum and Radiological Science and Technology (QST), Gunma University, Japan*

**P028**

**"Development of Spectral CT System Using Single CdTe Detector"**

Yuki Kobayashi, Daiki Ono, Yosuke Harasawa, Akie Nagao, Naoki Sunaguchi, Kosuke Suzuki, Kazushi Hoshi, Masami Torikoshi and Hiroshi Sakurai  
*Gunma University, Nagoya University, Japan*

**P029**

**"Biomolecular Detection Using Pyrene-Functionalized Graphene"**

Shiyu Wang, Md.Zakir Hossain, Takaaki Suzuki, Kazuo Shinozuka, Ryo Ichige, Anna Kuwana and Haruo Kobayashi  
*Gunma University, Japan*

**P030**

**"Transistor Characteristics of Carbon Films Grown on Metal Oxide Substrates"**

Daichi Okuhara, Takafumi Ishii and Jun-ichi Ozaki  
*Gunma University, Japan*

**P031**

**"Multistep Growth of Nanofiber Layer Induced by Contact of Aqueous Solutions of Copper Nitrate and Sodium Aspartate "**

Tetsu Kudo, Kazuto Yoshiba, Takao Yamamoto and Toshiaki Dobashi

*Gunma University, Japan*

**P032**

**"Crystal Growth and Evaluation of Ga<sub>2</sub>O<sub>3</sub> Nanowires"**

Yuuki Nakahata and Shunji Ozaki

*Gunma University, Japan*

**P033**

**"Micro Integration Method for Local Light Stimulation by Using Adhesiveness of Photoresist"**

Hidetaka Ueno and Takaaki Suzuki

*Gunma University, Japan*

**P034**

**"Fabrication of W Nanowire Using Electron Beam Lithography for Highly Sensitive Gas Sensor"**

Naoki Sakuma, Takumi Kato, Yoshitaka Mura, Masayuki Ono and Hayato Sone

*Gunma University, Japan*

**P035**

**"Nanostructure-Incorporated Phase-Change Memory"**

You Yin, Dai Nishijo and Hayato Sone

*Gunma University, Japan*

**P036**

**"C-Doped and C-N-Codoped Sb<sub>2</sub>Te<sub>3</sub> Chalcogenides for Reducing Power Consumption of Phase-Change Memory"**

You Yin

*Gunma University, Japan*

**P037**

**"Effects of a Phosphorus Atom on Electronic States of Silicon Clusters"**

Tomohiro Tsumuraya and Soichiro Kyushin

*Gunma University, Japan*

**P038**

**"Visible-Light Sensitive Photocatalytic Activity of FeO<sub>x</sub>- and P-Modified TiO<sub>2</sub> with Rutile Structure"**

Tomomi Hirai, Yosuke Hayashi and Shinji Iwamoto

*Gunma University, Japan*



**P039**

**"Pore Structure of TiO<sub>2</sub>-Modified ZrO<sub>2</sub> Particles Prepared by the Glycothermal Method"**

Fuya Sugiyama, Shunsuke Hayashi and Shinji Iwamoto  
*Gunma University, Japan*

**P040**

**"Dielectric Properties of (Ba,Ca)TiO<sub>3</sub> Solid-Solution Films Formed by Sputter-Anneal Method"**

Miho Ako, Toru Kyomen, Jun-ichi Fujisawa and Minoru Hanaya  
*Gunma University, Japan*

**P041**

**"Ionic Conductivity and Synthesis of Li<sub>2</sub>(Si<sub>x</sub>Ge<sub>1-x</sub>)<sub>2</sub>O<sub>5</sub> (x=0.5, 0.7)"**

Hibiki Sunaga and Shin-ichi Furusawa  
*Gunma University, Japan*

**P042**

**"Magnetic Properties and Ionic Conductivity of Li<sub>0.5</sub>Fe<sub>2.5</sub>O<sub>4</sub>-Li<sub>0.5</sub>La<sub>0.5</sub>TiO<sub>3</sub> Composite"**

Shouhei Yamaishi and Shin-ichi Furusawa  
*Gunma University, Japan*

**P043**

**"Electrical and Magnetic Characteristics of LiMn<sub>2</sub>O<sub>4</sub>-Li<sub>0.5</sub>La<sub>0.5</sub>TiO<sub>3</sub> Composite"**

Kota Kakinuma and Shin-ichi Furusawa  
*Gunma University, Japan*

**P044**

**"Ionic Conduction of β-AgI Thin Film on PET Substrate -Thickness and Extending-deformation Dependence-"**

Hiroki Fukuda and Shin-ichi Furusawa  
*Gunma University, Japan*

**P045**

**"Development of Visible-Light Responsive Photocatalyst Using Transparent Ta<sub>2</sub>O<sub>5</sub> Thin Film"**

Kai Ito, Yuya Hashimoto, Kenta Miura, Katsuya Noguchi, Wataru Kada and Osamu Hanaizumi  
*Gunma University, Japan*

**P046**

**"Fabrication and Evaluation of Transparent-Conductive ZnO/Ag/ZnO Multilayer Thin Films"**

Sumito Kotsuji, Tomoki Uchibori, Shunya Yamamoto, Kenta Miura, Katsuya Noguchi, Wataru Kada and Osamu Hanaizumi  
*Gunma University, Japan*

**P047**

**"Preparation of MgO Thin Films Using RF Sputtering for Applications to Radiation Detectors"**

Akihito Yoshida, Kosuke Omi, Kenta Miura, Katsuya Noguchi, Wataru Kada and Osamu Hanaizumi

*Gunma University, Japan*

**P048**

**"Magnetization Switching Behavior for CoFeB/MgO and CoFeB/Ta Multilayer Films"**

Kento Haishi, Akane Shibayama, Misaki Adachi, Kousuke Suzuki, Masatoshi Yamazoe, Kazushi Hoshi, Masayoshi Itou, Naruki Tuji, Yoshiharu Sakurai and Hiroshi Sakurai

*Gunma University, Japan Synchrotron Radiation Research Institute, Japan*

**P049**

**"Temperature Dependence of the Magnetization Switching Behavior of a Tb<sub>12</sub>Co<sub>88</sub> Amorphous Perpendicular Magnetic Anisotropy Film"**

Akino Harako, Hiroshi Sakurai, Kento Haishi, Kosuke Suzuki, Kazushi Hoshi, Xiaoxi Liu, Chuang Ma, Naruki Tsuji, Yoshiharu Sakurai and Akane Agui

*Gunma University, Shinshu University, JASRI/SPring-8, QST, Japan*

**P050**

**"X-ray Magnetic Diffraction Experiment of Fe/MgO Multilayer and Its Simulation"**

Taichi Fukasawa, Kazune Akutsu, Masahito Takashima, Kohei Kato, Kosuke Suzuki, Hiroshi Sakurai, Masahisa Ito and Keiichi Hirano

*Gunma University, KEK, Japan*

**P051**

**"Fabrication and Evaluation of Mach-Zehnder Optical Waveguides in Polyimide Thin Film Utilizing Proton Beam Writing Technique"**

Shigeyuki Yokosawa, Kenta Kasuya, Youshen Wang, Ryo Kuribara, Ryuhei Takahashi, Satoshi Miura, Taisei Higuchi, Wataru Kada, Kenta Miura, Yasuyuki Ishii, Takahiro Sato and Osamu Hanaizumi

*Gunma University, National Institutes for Quantum and Radiological Science and Technology, Japan*

**P052**

**"Noise Filter Reducing Deformation in Digital Holography"**

Yoshitaka Takahashi, Takaya Okada, Ryutaro Sekiguchi and Madoka Fukushima

*Gunma University, Japan*

**P053**

**"Development of Long-Term Data Storage Utilizing Two Dimensional Fluorescent Defect Distributions Created in Diamond by Focused Particle Beam Writing Technique"**

Taisei Higuchi, Wataru Kada, Yoshinori Suda, Moriyoshi Haruyama, Shigeyuki Yokosawa, Shinobu Onoda, Kenta Miura, Yasuyuki Ishii, Takeshi Ohshima and Osamu Hanaizumi

*Gunma University, National Institutes for Quantum and Radiological Science and Technology (QST), Japan*

**P054**

**"One-Shot In-Line Digital Holography"**

Ryutaro Sekiguchi and Yoshitaka Takahashi

*Gunma University, Japan*

**P055**

**"Selective Object Image Reconstruction Using FMCW-Digital Holography"**

Tatsuya Ishikawa, Yoshinobu Aoki and Masayuki Yokota

*Shimane University, Japan*

**P056**

**"EMI Reduction and Output Ripple Improvement of Switching DC-DC Converters with Linear Swept Frequency Modulation"**

Tran Minh Tri, Miki Natsuko, Sun Yifei, Kobori Yasunori and Kobayashi Haruo

*Gunma University, Japan*

**P057**

**"EMI Noise Reduction for PFC Converter with Improved Efficiency and High Frequency Clock"**

Noriyuki Oiwa, Shotaro Sakurai, Ahmad Bustoni, Shogo Katayama, Yasunori Kobori and Haruo Kobayashi

*Gunma University, Japan*

**P058**

**"Four-Phase Ripple Controlled Switching Converter with EMI Noise Reduction Circuit"**

Jing Li, Yi Xiong, Yifei Sun, Tran Minh Tri, Yasunori Kobori and Haruo Kobayashi

*Gunma University, Japan*

**P059**

**"Spread Spectrum Technology with Automatic Notch Generation Used for Switching Converter"**

Yifei Sun, Yasunori Kobori and Haruo Kobayashi

*Gunma University, Japan*

**P060**

**"Phase Changing Method of Multi-Phase Buck Type Switching Converter"**

Shogo Katayama, Jing Li, Yasunori Kobori and Haruo Kobayashi

*Gunma University, Japan*

**P061**

**"Circuit Component Estimation in Buck Converter Using Efficiency Curve"**

Shotaro Sakurai, Nobukazu Tsukiji, Yasunori Kobori and Haruo Kobayashi

*Gunma University, Japan*

**P062**

**"Novel SD Addition Algorithm and Its FPGA Implementation"**

Yuuki Tanaka, Yuuki Suzuki and Shugang Wei

*Gunma University, Japan*

**P063**

**"Analysis and Design of Operational Amplifier Stability Based on Control Theory"**

Jianlong Wang, Gopal Adhikari, Nobukazu Tsukiji and Haruo Kobayashi

*Gunma University, Japan*

**P064**

**"Regression Analysis of Transfer Function of an Analog Filter from Circuit Characteristics Using Deep Learning"**

Yusuke Kubo, Nobukazu Takai, Masafumi Fukuda, Teruki Matsuba, Takanaga Yamazaki, Soichiro Shimokawa and Akio Iwabuchi

*Gunma University, Japan*

**P065**

**"Evaluation and Optimization Method for Multi-Valued Transmission Equalizer Using Genetic Algorithm"**

Keigo Taya, Yosuke Iijima and Yasushi Yuminaka

*National Institute of Technology, Oyama College, Gunma University, Japan*

**P066**

**"3-D Simulation of Ultrasonic Wave Propagation with Attenuation in L-Shaped Unidirectional CFRP"**

Yu Maehara and Takahiro Saitoh

*Gunma University, Japan*

**P067**

**"A Study on Defect Detection Inside Nugget Using Laser Ultrasonic Visualization Testing"**

Kenta Ooashi and Takahiro Saitoh

*Gunma University, Japan*

**P068**

**"Low-Cost Identification System of Product Defects Using Embedded Computer"**

Masato Suzuki, Takumi Yamaguchi and Yosuke Iijima

*National Institute of Technology, Oyama College, Japan*

**P069**

**"Study on Graphene Oxide Membrane as an Electrolyte of a Fuel Cell"**

Ryouta Meguro, Hirokazu Ishitobi and Nobuyoshi nakagawa

*Gunma University, Japan*

**P070**

**"Methanol Oxidation Electrocatalyst Using Reduced Grapheneoxide Support"**

Takuya Aoki, Nobuyoshi Nakagawa and Hirokazu Ishitobi

*Gunma University, Japan*

**P071**

**"Performance of Vanadium Redox Flow Battery with Electron-Beam-Irradiated Electrode"**

Kosuke Oba, Syunya Yamamoto, Hirokazu Ishitobi, Hiroshi Koshikawa, Tetsuya Yamaki, Honoka Doki and Nobuyoshi Nakagawa

*Gunma University, QST, Japan*

**P072**

**"Limit Cycle Manage Using Random Signal in Delta Sigma DA Modulator"**

Jiang-Lin Wei, Nene Kushita and Haruo Kobayashi

*Gunma University, Japan*

**P073**

**"Frequency Estimation Circuit Using Residue Number System"**

Yudai Abe, Shogo Katayama, Congbing Li, Anna Kuwana and Haruo Kobayashi

*Gunma University, Japan*

**P074**

**"ADC Histogram Test for Specific Codes"**

Yujie Zhao, Yuto Sasaki, Yuki Ozawa, Riho Aoki, Anna Kuwana and Haruo Kobayashi

*Gunma University, Japan*

**P075**

**"Numerical Simulation for Characteristic Analysis of Vertical Axis Wind Turbine"**

Dan Yao, Anna Kuwana and Haruo Kobayashi

*Gunma University, Japan*

**P076**

**"Integration-Type Time-to-Digital Converter Using Vernier Oscillators"**

Zhang Pengfei, Kosuke Machida, Yuto Sasaki, Yuki Ozawa, Kuwana Anna and Haruo Kobayashi

*Gunma University, Japan*

**P077**

**"Charge Distribution SAR ADC Architecture with Split Capacitor and Its Testing"**

Riho Aoki, Anna Kuwana and Haruo Kobayashi

*Gunma University, Japan*

**P078**

**"Numerical Simulation for Optimization of Unsteady Rotating Wind Turbine"**

Xueyan Bai, Anna Kuwana and Haruo Kobayashi

*Gunma University, Japan*

**P079**

**"Operand Measurement of Reaction Distribution in Degraded Battery by Using Compton Scattering Imaging "**

Terasaka Ayumu, Kousuke Suzuki, Daisuke Hiramoto, Naruki Tuji, Yuki Orikasa, Yoshiharu Uchimoto, Yoshiharu Sakurai and Hiroshi Sakurai

*Gunma University, Japan Synchrotron Research Institute (JASRI), Ritumeikan University, Kyoto University, Japan*

**P080**

**"Noise Removal Filter in Phase-Shifting Digital Holography"**

Takaya Okada and Yoshitaka Takahashi

*Gunma University, Japan*

**P081**

**"SNDR Improvement Algorithms in Binary and Ternary  $\Delta\Sigma$  DAC"**

Kojima Jun-ya, Kushita Nene, Murakami Masahiro, Kuwana Anna and Kobayashi Haruo

*Gunma University, Japan*

**P082**

**"Second-order DWA Algorithm and Circuit Design for Multi-bit  $\Delta\Sigma$  ADC/DAC"**

Yuanyang Du, Hiroyuki Hagiwara, Masahiro Murakami, Hao San, Anna Kuwana and Haruo Kobayashi

*Gunma University, Tokyo City University, Japan*

**P083**

**"Experimental Verification of Improved Nagata Current Mirrors"**

Mayu Hirano, Nene Kushita, Yoichi Moroshima, Hiromichi Harakawa, Takashi Oikawa, Nobukazu Tsukiji, Takashi Ida, Yukiko Shibasaki and Haruo Kobayashi

*Gunma University, ASO Corp. Tokyo, Japan*

**P084**

**"Electron Density Estimation by Using Newly Developed Photon Counting CT System"**

Daiki Ono, Akie Nagao, Naoki Sunaguchi, Masami Torikoshi, Kosuke Suzuki and Hiroshi Sakurai

*Gunma University, Nagoya University, Heavy Ion Medical Center, Gunma University, Japan*

**P085**

**"Study on Multi-tone Signals for Analog/Mixed-Signal IC Testing"**

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