

The 7<sup>th</sup> International GIGAKU Conference  
in Nagaoka  
(IGCN 2018)

# Plenary & Poster Program

5<sup>th</sup> October (Fri), 2018

Nagaoka University of Technology

## Categories (Sessions)

Plenary	p.1	<a href="#">PL</a>
GIGAKU Education	p.2	<a href="#">GE</a>
GIGAKU Research and Development	p.3-15	<a href="#">RD</a>

**Held at the same time ( Lecture Bldg. Room A)**

**09:30-10:00      UNESCO Chair Kick-off Meeting**

**12:30-13:30      4<sup>th</sup> GTP Alliance Meeting**

<http://igcn.gigaku.org/>

2018.09.25

**PLENARY Lecture Bldg. Room A, October 5 (Fri)**

**Plenary Session (PL)**

- 10:00 ~ 12:30**      **Plenary Session (Chairperson: Prof. Masato Aketagawa )**
- 10:00 ~ 10:30**      **“SDGs and GIGAKU Education”**  
PL-01:              Dr. Kazuhiko Takemoto, Director, United Nations University  
                                 Institute for the Advanced Study of Sustainability (UNU-IAS),  
                                 Japan
- 10:30 ~ 11:00**      **“Collaboration Equals Future of Education: Uncertainty**  
PL-02:              **and Opportunity in the Disruptive Technology Era”**  
                                 Dr. Sampan Silapanad, Vice-president, Western Digital  
                                 (Thailand) Co., Ltd., Thailand
- 11:00 ~ 11:25**      Coffee Break
- 11:25 ~ 11:55**      **“Engineering Education at the Zurich University of**  
PL-03:              **Applied Sciences (ZHAW) - Switzerland Present Status**  
                                 **and Future Challenges”**  
                                 Dr. Wolfgang Kickmaier, Head, International Relations,  
                                 Zurich University of Applied Sciences School of Engineering,  
                                 Switzerland
- 11:55 ~ 12:25**      **“Distinctive Feature of GIGAKU Engineering Education**  
PL-04:              **Based on SDGs”**  
                                 Dr. Kazunori Sato, Vice-president, Professor, Nagaoka  
                                 University of Technology, Japan

**<Poster Presentation>**

- \* ICGN2018: 13:30 ~ 15:30 Lecture Bldg. 1<sup>st</sup> floor**
- \* STI-Gigaku: 13:00 ~ 15:00 Lecture Bldg. 2<sup>nd</sup> floor**

**<Open Lab>**

- \* Fast half: 15:30 ~ 16:10**
- \* Last half: 15:40 ~ 16:50**

**< Networking Dinner >**

- 17:00 ~ 19:00 Commissary (Cafeteria) 1<sup>st</sup> floor (fee: JPY2,000)**
- ※Shuttle bus from NUT to Nagaoka station will be prepared for attendee**

**POSTER October 5 (Fri), 13:30 ~ 15:30**

**Lecture Bldg. 1<sup>st</sup> Floor**

**GIGAKU Education (GE)**

- GE-001:** “Academia and Industry Collaboration Between School of Industrial  
\_sub19 Technology, Universiti Sains Malaysia and Nagaoka University of  
Technology”  
Siti Baidurah<sup>1</sup>, and Rohani Abdul Majid<sup>2</sup> (<sup>1</sup>*Universiti Sains Malaysia,  
Malaysia, and* <sup>2</sup>*USM-NUT GIGAKU Techo Park, Malaysia* )
- GE-002:** “Analysis of the Effectiveness of Teaching Methods  
\_sub22 Based on the Neuroscientific Approach and the Experimental Study”  
Koji Nishiura<sup>1</sup>, Ikusaburo Kurimoto<sup>2</sup>, and Kazuki Kamata<sup>3</sup>  
(<sup>1</sup>*NIT, Fukushima College, Japan,* <sup>2</sup>*NIT, Kisarazu College, Japan,* and <sup>3</sup>*Tokyo  
Institute of Technology, Japan*)
- GE-003:** “Self-Assessment of Generic Skill for Engineering Design Education”  
\_sub23 Yasuko Tsuchida, Shigehiro Toyama, Yoshinori Tokoi, Taku Kiryu, Kazuki  
Sakai, Yukinobu Sugihara, Osamu Youda, Tetsuro Iyama, and Fujio Ikeda  
(*NUT, Japan*)
- GE-004:** “Fostering Creativity Through Disaster Education”  
\_sub33 Emanuel LELEITO (*Nagoya University, Japan*)
- GE-005:** “Development of an Analysis System for Concentration Using Biometric  
\_sub35 Information –Aiming to Apply to AL Classes–”  
Kuniaki Yajima, Yoshihiro Takeichi, Keiichi Yonemura, and Jun Sato  
(*NIT Sendai college, Japan*)
- GE-:006** “Awareness of Instructional Skills in Teachers of NIT –Through Activities of  
\_sub108 SDGs English Presentation in NIT and GIGAKU Education to Foster  
Students’ Generic Skills and Integrated English Ability–”  
Okada, M., Kuroda, K., Nakamura, S., Yamaguchi, T., and Ichitsubo, M.  
(*NIT Ube college, Japan*)
- GE-007:** “Glocal Problem-Based Learning for the Engineer to Achieve SDGs  
\_sub118 Through the GIGAKU Network”  
Shigeyoshi Nakamura, Kuroda Kyohei, Hideaki Aburatani, Misuzu Okada,  
Yoshihiko Muto, Takashi Yamaguchi, Makoto Ichitsubo  
(*NIT Ube college, Japan*)

- GE-008: “Tips for Implementing Some Active Learning Methods  
\_sub125 for KOSEN Mathematics Class”  
Yuko Ichikawa, and Mari Morimoto (*NIT Tokyo College, Japan*)

## GIGAKU Research and Development (RD)

- RD-001: “Generation of Wedge Waves by Means of Evanescent Light”  
\_sub2 Iwao Matsuya, Yuuki Hirai, Yasuhisa Oguro, Takumi Arai, Takayuki Ishibashi,  
and Ikuo Ihara (*NUT, Japan*)
- RD-002: “Development of Precision Measuring Robot of Crawler Type and Feasibility  
\_sub25 Study of Measuring Unit for Improvement of Measurement Accuracy”  
Ichiro YOSHIDA, Kazuhide TANAKA (*HOSEI University, Japan*)
- RD-003: “Development of Finite Element Analysis Model of Stress Concentration on  
\_sub44 Tool Corner for a Tandem Process of Deep Drawing”  
Yuto Todoroki<sup>1</sup>, Hanh C.Nguyen<sup>1</sup>, and Shigeru Nagasawa (*NUT, Japan*)
- RD-004: “Effects of Cutting Parameters on Cutting Characteristics of Nylon Film  
\_sub45 Subjected to Wedge Indentation”  
Hanh C. Nguyen, and Shigeru Nagasawa (*NUT, Japan*)
- RD-005: “Displacement Measurement Based on Direct Phase Determination for Laser  
\_sub48 Heterodyne Interferometry”  
Thanh Dong NGUYEN, Quang Anh DUONG, Masato HIGUCHI, Wei  
DONG, and Masato AKETAGAWA (*NUT, Japan*)
- RD-006: “Frequency Stabilized Laser near 531nm Region”  
\_sub50 Kokoro Kihara, Masato Higuchi, Masato Aketagawa (*NUT, Japan*)
- RD-007: “Frequency Stabilization of 633 nm DBR Laser Diode”  
\_sub51 Takehiro Anjo, Masato Higuchi, and Masato Aketagawa (*NUT, Japan*)
- RD-008: “High-Temperature Oxidation of Ni/Al<sub>2</sub>O<sub>3</sub> Composites with Different Ni  
\_sub72 Content”  
Phanuwat Khlaisongkhram and Makoto Nanko (*NUT, Japan*)
- RD-009: “Traitness Measurement Using Two-Color Lasers as References”  
\_sub77 Baku Endo, Masato Aketagawa (*NUT, Japan*)
- RD-010: “Preparation of High Purity Magnesium Sheet by Vacuum Distillation,  
\_sub81 Extrusion and Rolling”  
Makoto Inoue, and Ran Saeki (*NIT Toyama College, Japan*)

- RD-011:** “Study on Influencing Factors on Fatigue Strength Characteristic of Flake Graphite Cast Iron”  
\_sub88  
Yosuke KATO<sup>1</sup>, Yukio MIYASHITA<sup>1</sup>, Yuichi OTUKA<sup>1</sup>, Kiyoshi SHIRATO<sup>2</sup>, Hirohito ETO<sup>2</sup>, Masahiro AIDA<sup>2</sup>, and Nobuaki SHINYA<sup>2</sup> (<sup>1</sup>*NUT, Japan, and* <sup>2</sup>*ISUZU Motors Limited, Japan*)
- RD-012:** “Instabilities of Hydrogen-Methane-Oxygen-Nitrogen Premixed Flames on a Flat Burner”  
\_sub89  
T. Yamaguchi, T. Katsumi, and S. Kadowaki (*NUT, Japan*)
- RD-013:** “Study on Liquid Level Sensing Based on Wedge Waves Propagation”  
\_sub91  
Masayuki Mori, Youji Ogawa, Iwao Matsuya, and Ikuo Ihara (*NUT, Japan*)
- RD-014:** “Estimation of Mechanical Properties and Out-Of-Plane Cutting Characteristics of Thermal Printing Papers Using Several Mechanical Testing Methods”  
\_sub99  
Atsushi Muto<sup>1</sup>, Umeki Yusuke<sup>1</sup>, Shigeru Nagasawa<sup>1</sup>, Sumio Watanabe<sup>2</sup>, Yukihiko Mori<sup>2</sup>, and Hiromi Ohtsuka<sup>2</sup> (<sup>1</sup>*NUT, Japan, and* <sup>2</sup>*FUJITSU, Japan*)
- RD-015:** “Investigation for Ignition of Green Monopropellant with Electrolysis and Pulse Laser”  
\_sub102  
Tsubasa Kitamura, Yuta Sakurai, Toshiyuki Katsumi, and Satoshi Kadowaki (*NUT, Japan*)
- RD-016:** “Conversion of RPF Fly Ash Using Hydrothermal Synthesis”  
\_sub103  
Takeshi Toshima<sup>1</sup>, Syuya Daidai<sup>1</sup>, Saori Takamatsu<sup>1</sup>, Masamoto Tafu<sup>1</sup>, Kazuhiro Tada<sup>1</sup>, Makoto Inoue<sup>1</sup>, and Tomoyuki Homma<sup>2</sup> (<sup>1</sup>*NIT Toyama College, and* <sup>2</sup>*NUT, Japan*)
- RD-017:** “Imaging of Magnetic Domains by Magneto-Optical Kerr Effect Using Au Plasmon Filters”  
\_sub105  
Takumi TOGASHI<sup>1</sup>, Mizue MIZOSHIRI<sup>1</sup>, Takumi HASEGWA<sup>2</sup>, Kenta TAKAGI<sup>3</sup>, and Kimihiro OZAKI<sup>3</sup> (<sup>1</sup>*NUT, Japan,* <sup>2</sup>*Nagoya University, and* <sup>3</sup>*National Institute of Advanced Industrial Science and Technology, Japan*)
- RD-018:** “New Phase Determination Approach for Displacement Measurement in Sinusoidal Frequency/Phase Modulation Interferometers”  
\_sub106  
Masato Higuchi, and Masato Aketagawa (*NUT, Japan*)
- RD-019:** “Producing Aluminum Alloy / Copper Alloy Dissimilar Materials Joint Thin Plate by Using Friction Stir Welding and Rolling”  
\_sub107  
Shinya FUJIMOTO<sup>1</sup>, Yukio MIYASHITA<sup>1</sup>, Hisashi HORI<sup>2</sup> (<sup>1</sup>*NUT, Japan, and* <sup>2</sup>*Nippon Light Metal Company, Ltd., Japan*)

- RD-021:** “Recycling of High Purity Magnesium Sheet from MG-AL-CA System Alloy by Vacuum Distillation and Extrusion”  
\_sub121  
Makoto Inoue<sup>1</sup>, Takuya Mouri<sup>1</sup>, Naritoshi Aoyagi<sup>2</sup>, Tetsuo Aida<sup>3</sup>, and Hiromi Miura<sup>4</sup> (<sup>1</sup>*NIT Toyama Collage, Japan*, <sup>2</sup>*NIT Nagaoka Collage, Japan*, <sup>3</sup>*University of Toyama*, and <sup>4</sup>*TUT, Japan*)
- RD-022:** “Change in Mechanical Property of Resin Materials Due to Heat Treatment and Its Effect on Interfacial Strength of Dissimilar Materials Joint Between Resin and Metal”  
\_sub93  
Yumi Abe, Yukio Miyashita, Kamaraj M., and Yuichi Otsuka (*NUT, Japan*)
- RD-023:** “Proposal on Interference Signal Extraction Filter in Pulse Train Interferometer”  
\_sub104  
Enoki Kenta, Dong Wei, and Masato Aketagawa (*NUT, Japan*)
- RD-024:** “Mn Atomic Spatial Distribution in Ferromagnetic (Zn, Sn, Mn)As<sub>2</sub> Thin Films Using the Image Reconstruction of 3DAPT”  
\_sub3  
Miyuki Shinoda, Kai Sato, Hideyuki Toyota, Hiroto Oomae, and Naotaka Uchitomi (*NUT, Japan*)
- RD-025:** “Epitaxial Growth and Electrical Characteristics of Cr-doped ZnSnAs<sub>2</sub> Thin Films”  
\_sub4  
K.Sato<sup>1</sup>, M.Shinoda<sup>1</sup>, H.Toyota<sup>1</sup>, H.Oomae<sup>1,2</sup>, and N.Uchitomi<sup>1</sup> (<sup>1</sup>*NUT, Japan*, and <sup>2</sup>*NIT Kushiro College, Japan*)
- RD-026:** “Bayesian Inference and Data Extraction on Comfortable Condition and Power Consumption of Air Conditioner Using Environmental and EEG Data”  
\_sub14  
Yohei Saika<sup>1</sup>, and Masahiro Nakagawa<sup>2</sup> (<sup>1</sup>*NIT Gunma College, Japan*, and <sup>2</sup>*NUT, Japan*)
- RD-027:** “Nitrogen Doping of ZnO Films Using NO Gas Excited on Heated Ir Wire”  
\_sub15  
Ryuta Iba<sup>1</sup>, Yuki Adachi<sup>1</sup>, Shotaro Ono<sup>1</sup>, Koichiro Oishi<sup>2</sup>, Hironori Katagiri<sup>2</sup>, and Kanji Yasui<sup>1</sup> (<sup>1</sup>*NUT, Japan*, and <sup>2</sup>*NIT Nagaoka College, Japan*)
- RD-028:** “Naturalness Preserving Image Stitching Based on Optimal Seam Estimation”  
\_sub21  
Masashi Oyabu, and Masahiro Iwahashi (*NUT, Japan*)
- RD-030:** “Study on Amplification of Optical Emission from Ge Quantum Dots by Photonic Crystal Resonator”  
\_sub29  
Shori Nakajima, Toshiki Matsutomi, Kunihiko Tanaka, and Kanji Yasui (*NUT, Japan*)
- RD-031:** “Object Tracking for Large Displacement Based on Optical Flow and Context Model”  
\_sub52  
Hajime Muraki, and Masahiro Iwahashi (*NUT, Japan*)

- RD-032:** “3D Shape Measurement Method for Metal Object”  
\_sub54 Ryo Ogata, and Masahiro Iwahashi (*NUT, Japan*)
- RD-033:** “Effect of N<sub>2</sub> annealing on Electrical Characteristics of Ca<sub>2</sub>AlMnO<sub>5+δ</sub> Ceramics”  
\_sub59 Shuhei Ikeda, and Tomoichiro Okamoto (*NUT, Japan*)
- RD-034:** “TiO<sub>2</sub>-BaSnO<sub>3</sub> Composite Film Prepared by Sol-gel Method and Its Application to Si Solar Cell”  
\_sub60 Yuji Kasai, and Tomoichiro Okamoto (*NUT, Japan*)
- RD-035:** “Electrical Conductivity of Carbon Fiber Sheet Made from Silk”  
\_sub61 Takuya Hasegawa, and Tomoichiro Okamoto (*NUT, Japan*)
- RD-036:** “The Effects of Transition Metals Doping on Optical Properties of β-Ga<sub>2</sub>O<sub>3</sub> by DV-Xα Method”  
\_sub64 Pham Nhu Huy Hung, Ariyuki Kato (*NUT, Japan*)
- RD-037:** “High-Speed Photographing for the Restoration of the Minute Light Emission”  
\_sub66 Yusuke Takahashi, and Masahiro Iwahashi (*NUT, Japan*)
- RD-038:** “Compact Pulsed Power Generator Operated with Low Voltage Using Power SIC-MOSFETS”  
\_sub82 Kazuki Nagao<sup>1</sup>, Takumi Furutani<sup>2</sup>, Takeshi Ihara<sup>2</sup>, Taichi Sugai<sup>1</sup>, and Weihua Jiang<sup>1</sup> (<sup>1</sup>*NUT, Japan, and* <sup>2</sup>*NIT Sasebo College, Japan*)
- RD-039:** “First Principles Study on Magnetic Properties in Chalcopyrite Cr-doped ZnSnAs<sub>2</sub> Semiconductor”  
\_sub84 Hideyuki Toyota, Bakhshi Mehdiyev, Kai Sato, and Naotaka Uchitomi (*NUT, Japan*)
- RD-040:** “Fabrication of MOS Transistor Array Pattern on i-line Photoresist Film by the Hybrid Lithography”  
\_sub97 Ryosuke Sato, Satoshi Shindo, and Akira Kawai (*NUT, Japan*)
- RD-041:** “Noise Bias Compensation for Tone Mapped Noisy Image Using Prior Knowledge”  
\_sub101 Sayaka Minewaki<sup>1</sup>, Taichi Yoshida<sup>2</sup>, Yoshinori Takei<sup>3</sup>, Masahiro Iwahashi<sup>4</sup>, Hitoshi Kiya<sup>5</sup> (<sup>1</sup>*NIT Yuge College, Japan,* <sup>2</sup>*The University of Electro-Communications, Japan,* <sup>3</sup>*NIT Akita College, Japan,* <sup>4</sup>*NUT, Japan, and* <sup>5</sup>*Tokyo Metropolitan University, Japan*)

- RD-042:  
\_sub18 “Production of Polyhydroxybutyrate Utilizing Molasses as Cheap Carbon Source”  
Siti Baidurah, Khok Yong Sen, and M. Hazwan Hussin (*Universiti Sains Malaysia, Malaysia*)
- RD-043:  
\_sub24 “Sulfur Atom Oxidation of Aminothiophenol by Cobalt(II) Complex”  
Kazunari Ohira<sup>1</sup>, Hidehito Komatsuzaki<sup>1</sup>, Tomohiro Agou<sup>2</sup>, Yuya Tanaka<sup>3</sup>, Michito Yoshizawa<sup>3</sup>, Munetaka Akita<sup>3</sup>, Jun Nakazawa<sup>4</sup>, and Shiro Hikichi<sup>4</sup> (*<sup>1</sup>NIT Ibaraki College, Japan, <sup>2</sup>Ibaraki University, Japan, <sup>3</sup>Tokyo Institute of Technology, and <sup>4</sup>Kanagawa University*)
- RD-044:  
\_sub26 “Crystallization Behavior of Sodium Transition Metal Silicate Glasses”  
Miyuri Terasawa, Tsuyosi Honma, and Takayuki Komatsu (*NUT, Japan*)
- RD-045:  
\_sub30 “Crystallization Behavior and Electrochemical Performance of Na<sub>2</sub>O-TiO<sub>2</sub>-SiO<sub>2</sub> Glass and Glass-Ceramics for Sodium Ion Battery”  
Kaito Ryo, Tsuyoshi Honma, and Takayuki Komatsu (*NUT, Japan*)
- RD-046:  
\_sub47 “Compressive Processing of Waste-Based Geopolymers: Effecting NaOH Concentration on the Microstructure of Clay Waste”  
Sitthisak Prasanphan<sup>1</sup>, Sirithan Jiemsirilers<sup>1</sup>, Takaomi Kobayashi<sup>2</sup>, Anucha Wannagon<sup>3</sup> (*<sup>1</sup>Chulalongkorn University, Thailand, <sup>2</sup>NUT, Japan, and <sup>3</sup>National Metal and Materials Technology Center, Thailand*)
- RD-047:  
\_sub53 “Simple and Environment Friendly Preparation of Silver Nanoparticles by Using Silver-Containing Glass Powder – Effects of Glass Composition on Generation of Silver Nanoparticles”  
Yasutaka Mori, and Aoi Yamamoto (*NIT Toyama College, Japan*)
- RD-048:  
\_sub62 “Separation Performance of Zeolite—Polymer Composite Membranes for Alkali Metal Ions”  
Tatsuki Inamoto, Lisa Nakajima, and Takaomi Kobayashi (*NUT, Japan*)
- RD-049:  
\_sub65 “Synthesis and Evaluation of High Adsorbability in Ceria Photocatalysts for Water Treatment”  
Yusaku Mochizuki<sup>1</sup>, Ryo Shoji<sup>1</sup>, Yasukazu Kobayashi<sup>2</sup>, Noriko Yamauchi<sup>3</sup>, and Kazunori Sato<sup>4</sup> (*<sup>1</sup>NIT Tokyo College, Japan, <sup>2</sup>The University of Tokyo, Japan, <sup>3</sup>Ibaraki University, Japan, and <sup>4</sup>NUT, Japan*)
- RD-050:  
\_sub73 “Particle Orientation Behavior in Colloidal Processing with UV Curable Binder Under a Rotating Magnetic Field”  
Shoko BABA, and Satoshi TANAKA (*NUT, Japan*)

- RD-051:** “Synthesis and Property of Cobalt(II) Complex with Sulfur-Containing  
\_sub75 Ligand”  
Shun Tadokoro<sup>1</sup>, Hidehito Komatsuzaki<sup>1</sup>, Tomohiro Agou<sup>2</sup>, Yuya Tanaka<sup>3</sup>,  
Michito Yoshizawa<sup>3</sup>, Munetaka Akita<sup>3</sup>, Jun Nakazawa<sup>4</sup>, and Shiro Hikichi<sup>4</sup>  
(<sup>1</sup>NIT Ibaraki College, Japan, <sup>2</sup>Ibaraki University, Japan, <sup>3</sup>Tokyo Institute of  
Technology, Japan, and <sup>4</sup>Kanagawa University, Japan)
- RD-052:** “Crystal-Oriented Tetragonal Lithium Sodium Potassium Niobate Ceramics”  
\_sub110 Yuuki Ono, and Satoshi Tanaka (*NUT, Japan*)
- RD-053:** “Photodegradation of Bisphenol a Dissolved in Water by Gd<sub>2</sub>O<sub>3</sub>-CeO<sub>2</sub>”  
\_sub112 Fumiya Sato, Kazuhiro Yamamoto, and Kazunori Sato (*NUT, Japan*)
- RD-054:** “Photochemical Reduction of Carbon Dioxide Dissolved in Water  
\_sub113 by La<sub>2</sub>O<sub>3</sub>-CeO<sub>2</sub> Composite”  
Ryota Suzuki, Kazuhiro Yamamoto, and Kazunori Sato (*NUT, Japan*)
- RD-055:** “Electric Power Generation Enhancement in a Solid Oxide Fuel Cell Operating  
\_sub114 in Methane by Using Oxygen Storage and Release Property of Ce<sub>1-x</sub>Sr<sub>x</sub>O<sub>2</sub>”  
Yohei Sugano, Kazuhiro Yamamoto, and Kazunori Sato (*NUT, Japan*)
- RD-056:** “Investigation of Nitriding Treated Ni-Free SUS445 as Current Collector for  
\_sub122 5V-Class Li-Ion Secondary Cell”  
Neil Ihsan<sup>1</sup>, Sayoko Shironita<sup>1</sup>, Kenichi Souma<sup>1,2</sup>, and Minoru Umeda<sup>1</sup> (<sup>1</sup>*NUT,*  
*Japan,* and <sup>2</sup>*Hitachi Industrial Equipment Systems Co., Ltd, Japan*)
- RD-057:** “Effect of Ground Movement Direction on Ultimate Lateral Resistance of  
\_sub11 Line Alignment Piles in Clay”  
Pham Ngoc Quang, Ohtsuka Satoru, and Fukumoto Yutaka (*NUT, Japan*)
- RD-058:** “Evaluation of Soil Properties in Yangon City by Microtremor Measurement”  
\_sub42 Takumi Matsumoto, and Takaaki Ikeda (*NUT, Japan*)
- RD-059:** “Examination of Relationship Between House Damage and Soil Property Due  
\_sub43 to Earthquake a Study on Ojiya City, Niigata”  
Kotaro Tomidokoro, and Takaaki Ikeda (*NUT, Japan*)
- RD-060:** “Evaluation of Dynamic Ground Behavior at Near Source Area During the  
\_sub49 2016 Kumamoto Earthquake by Numerical Analysis Approach”  
Shun Nemoto, Takaaki Ikeda (*NUT, Japan*)

- RD-061:** “Influence of Fertilization of Organic Compost and Green Tuff for Microbial Community Structures and Chemical Components in Green Onion Cultivation Fields”  
\_sub63  
Kyohei Kuroda<sup>1</sup>, Tomoka Arata<sup>1,2</sup>, Nana Ohmine<sup>1</sup>, Ayaka Miyata<sup>1</sup>, Miyu Kawazoe<sup>1</sup>, Tatsuya Ohike<sup>3</sup>, Yuga Hirakata<sup>2</sup>, Masashi Hatamoto<sup>2</sup>, Shinya Maki<sup>2</sup>, and Takashi Yamaguchi<sup>2</sup> (<sup>1</sup>*NIT Miyakonjo College, Japan*, <sup>2</sup>*NUT, Japan*, and <sup>3</sup>*Towada Green-tuff AgroScience Co., Ltd., Japan*)
- RD-062:** “Application of Immobilized Beads in Natural Rubber Processing Wastewater”  
\_sub111  
Tran Phuong Thao<sup>1</sup>, Vu Thi Hoa<sup>2</sup>, Hatamoto Masashi<sup>1</sup>, Yamaguchi Takashi<sup>1</sup>, and Nguyen Lan Huong<sup>2</sup> (<sup>1</sup>*NUT, Japan*, and <sup>2</sup>*Hanoi University of Science and Technology, Vietnam*)
- RD-063:** “Examination of the Collection and Concentration Method of the Loach Viscous Liquid”  
\_sub5  
Natsumi Yajima<sup>1</sup>, Yuki Nasu<sup>1</sup>, Hiroshi Sakai<sup>1</sup>, Hisako Ooka<sup>2</sup>, Tomoaki Kouya<sup>1</sup>, Takakuni Tanaka<sup>1</sup>, and Takashi Kuwahara<sup>3</sup> (<sup>1</sup>*NIT Oyama College, Japan*, <sup>2</sup>*NIT Gunma College, Japma*, and <sup>3</sup>*NUT, Japan*)
- RD-064:** “Callus Induction from Leaf Explants of Flowering Dogwood (*Cornus florida*)”  
\_sub9  
Yuki Tatsumi<sup>1</sup>, Kazumi Furukawa<sup>2</sup>, Yoshinori Takahara<sup>3</sup>, and Hisako Ooka<sup>1</sup> (<sup>1</sup>*NIT Gunma College, Japan*, <sup>2</sup>*NIT Numazu College, Japma*, and <sup>3</sup>*NUT, Japan*)
- RD-065:** “Development of Cell Density Measurement Method in Water-in-oil Emulsion Droplet”  
\_sub10  
Nobuyuki Honma<sup>1</sup>, Akihiro Nakamura<sup>1</sup>, Yoshiyuki Suzuki<sup>1</sup>, Yosuke Shida<sup>1</sup>, Masamune morita<sup>2</sup>, Naohiro Noda<sup>2</sup>, and Wataru Ogasawara<sup>1</sup> (<sup>1</sup>*NUT, Japan*, and <sup>2</sup>*Biomed. Res. Inst., AIST, Japan*)
- RD-066:** “Epigenetic Mutants Causing Defects in Plant Leaf Development”  
\_sub13  
Miki Ushizawa, Ami Hoshino, and Taisuke Nishimura (*NUT, Japan*)
- RD-067:** “Investigation of the Role of Signal-like Sequence of Organophosphorus Hydrolase from *Sphingobium* sp. TCM1”  
\_sub20  
Seiya Konno, Toshihiro Imai, Katsumasa Abe, Shouji Takahashi, and Yoshio Kera (*NUT, Japan*)
- RD-068:** “The Effect of Carbon Source on Oleaginous Yeast *Rhodosporidium toruloides* and *Lipomyces starkeyi*”  
\_sub31  
Takanobu Iwamoto, Takeru Takamizawa, Pham Khanh Dung, Yosuke Shida, and Wataru Ogasawara (*NUT, Japan*)

- RD-069:** “Generation of Carotenoid Hyper-producing Mutants by Mutagenesis Using DNA-cleaving Antibiotics”  
\_sub38  
Yusuke Watabe, Katsumasa Abe, Yoshio Kera, and Shouji Takahashi (*NUT, Japan*)
- RD-070:** “Development of D-aspartic Acid-biosensor Element”  
\_sub39  
Hideyuki Suzuki, Takashi Kuwahara, Masato Shimomura, Katsumasa Abe, Yoshio Kera, and Shouji Takahashi (*NUT, Japan*)
- RD-071:** “Thalidomide Reduces FABP7 Expression in Human Induced Pluripotent Stem Cell”  
\_sub40  
Kohei Nakazono, Saoko Tachikawa, Maho Shimizu and and Kiyoshi Ohnuma (*NUT, Japan*)
- RD-072:** “Effect of Thalidomide on Neuroectoderm Human iPS Cells”  
\_sub41  
Maho Shimizu, Saoko Tachikawa, Maiko Kikuchi, and Kiyoshi Ohnuma (*NUT, Japan*)
- RD-073:** “Elucidation of Substrate Recognition Mechanism of Dipeptidyl Aminopeptidase IV from Gram-negative Bacteria *Pseudoxanthomonas mexicana* WO24”  
\_sub57  
Akihiro Nakamura<sup>1</sup>, Nobuyuki Honma<sup>1</sup>, Saori Roppongi<sup>2</sup>, Yoshiyuki Suzuki<sup>1</sup>, Yosuke Shida<sup>1</sup>, Yasumitsu Sakamoto<sup>2</sup>, Koji Inaka<sup>3</sup>, Hiroaki Tanaka<sup>4</sup>, Kiyoto Kihira<sup>5</sup>, Mitsugu Yamada<sup>5</sup>, Izumi Yoshioka<sup>5</sup>, Hiroaki Gouda<sup>6</sup>, Takamasa Nonaka<sup>2</sup>, Nobutada Tanaka<sup>6</sup>, and Wataru Ogasawara<sup>1</sup> (<sup>1</sup>*NUT, Japan*, <sup>2</sup>*Iwate Med. Univ., Japan*, <sup>3</sup>*Maruwa Foods and Bioscience, Inc., Japan*, <sup>4</sup>*Confocal Science Inc., Japan*, <sup>5</sup>*JAXA, Japan*, and <sup>6</sup>*Showa Univ., Japan*)
- RD-074:** “SUMO E3 Ligase Homologues Function in Transcriptional Gene Silencing in *Arabidopsis thaliana*”  
\_sub58  
Keita Soma<sup>1</sup>, Takamasa Kugo<sup>1</sup>, Shogo Nogawa<sup>1</sup>, Takuma Sato<sup>1</sup>, Eveline Van De Slijke<sup>2</sup>, Kris Gevaert<sup>2</sup>, Geert De Jaeger<sup>2</sup>, Akiko Yamamoto<sup>3</sup>, Shin Takeda<sup>3</sup>, Tsukaho Hattori<sup>3</sup>, and Taisuke Nishimura<sup>1</sup> (<sup>1</sup>*NUT, Japan*, <sup>2</sup>*Ghent University, Belgium*, and <sup>3</sup>*Nagoya University, Japan*)
- PRD-075:** “Planarian Cell Adhesion on Extra Cellular Matrix”  
\_sub69  
Daichi Hashida, Keita Takada, Kohei Nakazono, and Kiyoshi Ohnuma (*NUT, Japan*)
- RD-076:** “Inhibition of Bacterial Catabolism of Lignin-derived Aromatics in the Presence of High Concentration of Methionine”  
\_sub70  
Asuka Hori, Takuma Araki, Naofumi Kamimura, and Eiji Masai (*NUT, Japan*)

- RD-077:** “Study on Protease Biosynthesis of *Bacillus pumilus* Meyer and Gottheil in Single Protein-Supplemented Media”  
\_sub74  
Xingkai Zhang, Siriporn Taokaew, and Takaomi Kobayashi (*NUT, Japan*)
- RD-078:** “Expression and Purification of Phosphodiesterase from *Sphingobium* sp. strain TCM1”  
\_sub79  
Masayuki Kawaguchi, Takeshi Makino, Katsumasa Abe, Shouji Takahashi, and Yoshio Kera (*NUT, Japan*)
- RD-079:** “Identification and Characterization of the Glutathione *S*-transferase Genes Involved in Catabolism of arylglycerol- $\beta$ -aryl Ether”  
\_sub90  
Daisuke SATO, Yudai HIGUCHI, Naofumi KAMIMURA, and Eiji MASAI (*NUT, Japan*)
- RD-080:** “Subcellular Localization of Putative Transceptor Crt1 in Filamentous Fungus *Trichoderma reesei*”  
\_sub92  
Yukina Kitahara<sup>1</sup>, Kazumasa Yoshizawa<sup>1</sup>, Hiroki Taniguchi<sup>1</sup>, Takanori Furukawa<sup>2</sup>, Yosuke Shida<sup>1</sup>, and Wataru Ogasawara<sup>1</sup> (<sup>1</sup>*NUT, Japan, and* <sup>2</sup>*Manchester University, Manchester, England*)
- RD-081:** “Microsatellite Capture Sequencing as a Massive Simple Sequence Repeat (SSR) Detection Approach for DNA Marker Development and Polymorphic Analysis”  
\_sub96  
Keisuke Tanaka, Rumi Ohtake, Saki Yoshida, and Takashi Shinohara (*Tokyo University of Agriculture, Setagaya, Japan*)
- RD-082:** “Elucidation of Iron Uptake Mechanism in *Sphingobium* sp. strain SYK-6”  
\_sub100  
Taichi Sakumoto, Masaya Fujita, Kosuke Mori, Naofumi Kamimura, and Eiji Masai (*NUT, Japan*)
- RD-083:** “Elucidation of the Effect of Mutation of BGLII IN Filamentous Fungus *Trichoderma reesei*”  
\_sub116  
Shogo Hattori<sup>1</sup>, Ayana Nakamura<sup>1</sup>, Tomohiko Matsuzawa<sup>2</sup>, Yosuke Shida<sup>1</sup>, Katsuro Yaoi<sup>2</sup>, Wataru Ogasawara<sup>1</sup> (<sup>1</sup>*NUT, Japan, and* <sup>2</sup>*National Institute of Advanced Industrial Science and Technology, Japan*)
- RD-084:** “Identification of Major Facilitator Superfamily Transporters Involved in the Uptake of Lignin-derived Aromatics in *Pseudomonas putida* KT2440”  
\_sub117  
Ayumu Wada, Kosuke Mori, Naofumi Kamimura, and Eiji Masai (*NUT, Japan*)
- RD-085:** “Adhesion Properties of Human IPS Cells by Extracellular Matrix Coat to PDMS Surface are Different from TCPS”  
\_sub120  
Yuta Kusama, Yoshikatsu Tobaru, and Kiyoshi Ohnuma (*NUT, Japan*)

- RD-086:** “Determination of a Structural Factor Involved in the Substrate Specificity of D-amino Acid Oxidase of Thermophilic Fungi”  
\_sub17  
Yuya Shimekake, Takehiro Furuichi, Katsumasa Abe, Yoshio Kera, and Shouji Takahashi (*NUT, Japan*)
- RD-087:** “Development of an Enzymatic Isolation Method of Highly D-aspartic Acid-producing Lactic Acid Bacteria”  
\_sub55  
Kengo Kajitani<sup>1</sup>, Kimihiko Shibata<sup>2</sup>, Tomoaki Kouya<sup>3</sup>, Katsumasa Abe<sup>1</sup>, Yoshio Kera<sup>1</sup>, and Shouji Takahashi<sup>1</sup> (<sup>1</sup>*NUT, Japan*, <sup>2</sup>*NIT Fukushima College, Japan*, and <sup>3</sup>*NIT Oyama College, Japan*)
- RD-088:** “On Flow Rate of “UONOGAWA” from Rainfall with Tank Model”  
\_sub7  
Riki Tanaka<sup>1</sup>, Kenji Shirai<sup>2</sup> and Hirotaka Takahashi<sup>1</sup> (<sup>1</sup>*NUT, Japan and* <sup>2</sup>*Niigata University of International and Information Studies, Japan*)
- RD-089:** “Estimation Method of Turn Section by Ensemble Learning for Swimming Motion Coaching System”  
\_sub16  
Masahiro Kobayashi<sup>1</sup>, Yuto Omae<sup>2</sup>, Kazuki Sakai<sup>3</sup>, Takuma Akiduki<sup>4</sup>, Akira Shionoya<sup>1</sup>, and Hirotaka Takahashi<sup>1</sup> (<sup>1</sup>*NUT, Japan*, <sup>2</sup>*NIT Tokyo College, Japan*, <sup>3</sup>*NIT Nagaoka College, Japan*, and <sup>4</sup>*TUT, Japan*)
- RD-090:** “Tree Assigning Approach for Many-to-one Assumption in Semi-Supervised Document classifier”  
\_sub37  
Nghia Nguyen, Izumi Suzuki, Muneyuki Unehara, and Koichi Yamada (*NUT, Japan*)
- RD-091:** “ An Automatic Text Generation System for Video Clips Using Machine Learning Technique”  
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Akira Shibata, and Takashi Yukawa (*NUT, Japan*)
- RD-092:** “A Study on Effectiveness of Omnidirectional Vision in Drone’s Precise Maneuvering”  
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Ryota Yamamura, Daiki Kosaka, Masahiro Ando, and Takashi Yukawa (*NUT, Japan*)
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Yupaporn Namsan, and Li Zhidong (*NUT, Japan*)
- RD-094:** “Facility Location Dynamics of E Commerce Retailers: A case of worldwide facility location network of Amazon company”  
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Chathura Kovida De Silva, Sano Kazushi, and Kiichiro Hatoyama (*NUT, Japan*)

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- RD-096:** “High Temperature Gas Cooled Reactor Regulation Development – Operation & Maintenance Perspective”  
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I Wayan Ngarayana<sup>1,2</sup>, and Kenta Murakami<sup>1</sup> (<sup>1</sup>*NUT, Japan* and <sup>2</sup>*National Nuclear Energy Agency of Indonesia, Indonesia*)
- RD-097:** “Developing Trilingual Vocabulary List for the Analysis of the Four Capabilities of Resilience: A Case Study Based on Fukushima Daiichi Nuclear Accident”  
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Siqi Tan, Kun Zhang, Ikeda Takaaki, and Yoshiki Mikami (*NUT, Japan*)
- RD-098:** “Galet – Geant4 Based Application Templet for Primers”  
\_sub28  
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- RD-099:** “Structural Integrity Evaluation of Reactor Pressure Vessels Using Probabilistic Fracture Mechanics Code”  
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Nhut Luu Vu, and Kenta Murakami (*NUT, Japan*)
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- RD-102:** “Flyer Acceleration by Electro-Thermal Gun Toward Warm Dense Matter Generation for Inertial Confinement Fusion with Fast Ignition”  
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- RD-103:** “Effect of Alcohol Addition on Lithium Isotope Separation Using Cation Exchange Resin”  
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- RD-104:  
\_sub76 “Experimental and Numerical Studies on Reduction of Hydrogen Concentration in a Sealed Container with PAR for Storing Fuel Debris Safely”  
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- RD-105:  
\_sub94 “Experimental Study on Chemical Behavior of FP in High Temperature Region of BWR Under a Severe Accident Condition - Component Analysis of Reaction Products Between Boron Vapor Species and Stainless Steel -”  
Gaku Takase, Masahiko Osaka, and Kazuyuki Takase (*NUT, Japan*)
- RD-106:  
\_sub109 “Development of a Numerical Analysis Method for Optimizing Cutting Technology of Fuel Debris by Laser Irradiation”  
Kazuyuki Takase, Genki Kawasaki, and Vu Tri Ky (*NUT, Japan*)
- RD-107:  
\_sub115 “Numerical Study on Core Degradation Behavior with TRAC and MCCI Behavior with MELCOR at Fukushima Dai-ichi Nuclear Reactor Accident”  
Kazuyuki Takase, Kohei Ueta, and Hiep Huy Nguyen (*NUT, Japan*)
- RD-108:  
\_sub34 “Generation of Color Centers in NaCl Irradiated by Pulsed Intense Relativistic Electron Beams at Low Temperature National Institute for Fusion Science, Kakeru Kamata<sup>1</sup>, Takashi Kikuchi<sup>1</sup>, Go Imada<sup>1,2</sup>, Tadachika Nakayama<sup>1</sup>, and Hisayuki Suematsu<sup>1</sup> (<sup>1</sup>*NUT, Japan, and* <sup>2</sup>*Niigata Institute of Technology, Japan*)
- RD-109:  
\_sub36 “Study on Interaction Between Laser Ablation Plasma and Magnetic Field at Solenoid Fringe”  
Yuta Wada, Yuki Matsumoto, Keigo Enmei, Kazumasa Takahashi, Toru Sasaki, and Takashi Kikuchi (*NUT, Japan*)
- RD-110:  
\_sub46 “Dose Dependence on Inactivation of Aquatic Microorganism Egg in Water by Pulsed Intense Relativistic Electron Beam”  
Naofumi Takeshita<sup>1</sup>, Kazumasa Takahashi<sup>1</sup>, Toru Sasaki<sup>1</sup>, Takashi Kikuchi<sup>1</sup>, and Go Imada<sup>2</sup> (<sup>1</sup>*NUT, Japan, and* <sup>2</sup>*Niigata Institute of Technology, Japan*)
- RD-111:  
\_sub83 “Development of Hydrogen Recombiners Using Porous Geopolymer”  
Taro Utsumi<sup>1</sup>, Isamu Kudo<sup>2</sup>, Do Thi Mai Dung<sup>1</sup>, Tadachika Nakayama<sup>1</sup>, Kazuyuki Takase<sup>1</sup>, and Hisayuki Suematsu<sup>1</sup> (<sup>1</sup>*NUT, Japan, and* <sup>2</sup>*ADVAN ENG. co., ltd, Japan*)
- RD-112:  
\_sub86 “Development of Pulsed Diagonal MHD Accelerator Using RF Plasma Toward Low Pressure Operation”  
Shunsuke Furukawa, Sariranya Promson, Kazumasa Takahashi, Toru Sasaki, and Takashi Kikuchi (*NUT, Japan*)

- RD-113: “Effects of Thermal Ageing and Irradiation on Nano Hardness of Duplex  
\_sub123 Stainless Steel”  
Ha Quoc Viet, Kenta Murakami, and Masahide Suzuki (*NUT, Japan*)
- RD-114: “Education and Research on Nuclear Applications at Hanoi University of  
\_sub124 Science and Technology”  
Nguyen Tat Thang (*Hanoi University of Science and Technology, Vietnam*)
- RD-115: “Development of Discriminant Analysis Method on Failure Modes Relating to  
\_sub98 Damage / Fracture Modes of Functional Materials Using Support Vector  
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Tomoyuki Okabe, and Yuichi Otsuka (*NUT, Japan*)