Day 1, June 24

Opening address (13:00-, Room A) Takashi Sato, Conference chairperson

Keynote Lecture
KL1 (13:05-, Room A) Chairperson: Takashi Sato
Innovation in Engineering Education
Takao Hanabusa
Tokushima University, Japan

Oral Presentations
Room A – Students’ presentations -

A1 (13:40-) The Value of the Onboard Fishing Service and the ICT Technique are Used in 'Ship Matching Service Application
Seong-Yeop Jeong1, Jeong-Hyo Hong2, Jae-Hong Yim3
1 Department of Electronic communication, Korea Maritime and Ocean University, Republic of Korea
2 Idea Factory, Associated Researcher, Korea Maritime and Ocean University, Republic of Korea
3 Department of Electronic and Electronics Control Engineering, Korea Maritime and Ocean University, Republic of Korea

A2 (14:00-) Application Development that Notifies the Number of People in the Bus before Arrival with Motion-recognition Device
Jae-Wook Son1, Jeong-Hyo Hong2, Yun-Hae Kim3
1 Department of the Mechanical Engineering, Korea Maritime and Ocean University, Republic of Korea
2 Idea Factory, Associated Researcher, Korea Maritime and Ocean University, Republic of Korea
3 Department of Ocean Advanced Convergence Engineering, Korea Maritime and Ocean University, Republic of Korea

A3 (14:20-) Development of Actual Typing Touch-Screen Keyboard through Keyboard Switch Miniaturization
Jun-Ho Kim1, Jeong-Hyo Hong2, Yun-Hae Kim3
1 Department of the Mechanical Engineering, Korea Maritime and Ocean University, Republic of Korea
2 Idea Factory, Associated Researcher, Korea Maritime and Ocean University, Republic of Korea
3 Department of Ocean Advanced Convergence Engineering, Korea Maritime and Ocean University, Republic of Korea

A4 (14:40-) Development of Auto Calmfort Machine with Automatic Powder Mixing and Temperature Setting Function
Seong-Jae Park1, Bo-Myung Seo1, Jeong-Hyo Hong2, Yun-Hae Kim3
1 Department of the Mechanical Engineering, Korea Maritime and Ocean University, Republic of Korea
2 Idea Factory, Associated Researcher, Korea Maritime and Ocean University, Republic of Korea
3 Department of Ocean Advanced Convergence Engineering, Korea Maritime and Ocean University, Republic of Korea

(Break 15:00-15:20)

A5-A9 Chairpersons: Seong-Jae Park and Yuuhei Oomachi

A5 (15:20-) Rescue Robot Simulator
Chibana Ryoukai, Hukui Takaya, Nakatani Keiko
Faculty of Industrial Systems Engineering, Osaka Prefecture University College of Technology, Japan
A6 (15:40-) Programming Education Aimed at Curiosity and Interest In Science

*Oomachi Yuuhei*, *Nakao Motoi*

1. Graduate School of Engineering, Kyushu Institute of Technology, Japan
2. Faculty of Engineering, Kyushu Institute of Technology, Japan
3. Logicommon Inc., Japan

A7 (16:00-) Fast Physical-Random Number Generation using Laser Diode’s Frequency Noise -Comparison of The Used Laser for Random Number Generation-

*Yuki Kasuya*, *Hideaki Arai*, *Takashi Sato*, *Shuichi Sakamoto*, *Masashi Ohkawa*, *Yasuo Ohdaira*

1. Graduate School of Science and Technology, Niigata University, Japan
2. Faculty of Engineering, Niigata University, Japan

A8 (16:20-) A Capstone Design of the 3 Dimensional Ink Patterning on Papers by Using Offset Printing Method

*Seongkeun Yeon*, *Jieun Jung*, *Jongtae Youn*

Department of Graphic Arts Information Engineering, Pukyong National University, Republic of Korea

A9 (16:40-) A Capstone Design of the Enhanced Wiping Gravure System for Manufacturing the Printed Electronics

*Jiyeon Park*, *Songah Choi*, *Jongtae Youn*

Department of Graphic Arts Information Engineering, Pukyong National University, Republic of Korea

Room B – Students’ presentations -

B1-B4 Chairpersons: Jae-Heun Shin and Bo-Myung Seo

B1 (13:40-) Understanding Different Perspectives and Cultures through Internship Experience in Thailand

*Akasaka Keita*

Graduate School of Science and Technology, Niigata University, Japan

B2 (14:00-) Possibility and Lessons in Global Dormitory-type Education Program in Vietnam

*Mano Asuka*

Graduate School of Science and Technology, Niigata University, Japan

B3 (14:20-) Realization of Practical Abilities for Global Stage through G-Dorm in Laos

*Kojima Takeru*

Niigata University, Japan

B4 (14:40-) Intercultural Experiences through International Group-work Internship at Nissan Automotive Technology Vietnam

*Kayamori Shota*

Graduate School of Science and Technology, Niigata University, Japan

(Break 15:00-15:20)

B5-B9 Chairpersons: Keita Akasaka and Shota Kayamori

B5 (15:20-) Influences of the Chitosan Bridge on the Early Growth Process of Zeolite NaA Membranes on Alumina Hollow tubes

*Jinqiang Gao*, *Mitsumata Tetsu*, *Tsubokawa Norio*, *Yamauchi Takeshi*

1. Graduate School of Science and Technology, Niigata University, Japan
2. Faculty of Engineering, Niigata University, Japan
B6 (15:40-) Development and Sensing Evaluation of Organic EMF Type Hydrogen Sensor Using Intrinsically Conducting Polymers

Miyake Hirofumi, Murakami Takahiro, Harada Shuji, Mitsumata Tetsu, Tsubokawa Norio, Yamauchi Takeshi

1 Graduate School of Science and Technology, Niigata University, Japan
2 Faculty of Engineering, Niigata University, Japan

B7 (16:00-) Brazing of TiAl-based Alloy with Ti-Cu-Zr Filler Metal

Makoto Watanabe, Tomohiro Sasaki
Graduate School of Science and Technology, Niigata University, Japan

B8 (16:20-) Effect of Bonding Interface Roughness on Bonding Strength of GFRP Composed of Various Polymer Resins for Optimal Adhesive Bonding

Jae-Heun Shin, Soo-Jeong Park, Seok-Hee Han, Tianyu Yu, Zixuan Chen, Ji-Su Choi, Chang-Wook Park, Yun-Hae Kim

1 Department of the Mechanical Engineering, Korea Maritime and Ocean University, Republic of Korea
2 Major of Materials Engineering, Graduate school, Korea Maritime and Ocean University, Republic of Korea
3 Department of Ocean Advanced Convergence Engineering, Korea Maritime and Ocean University, Republic of Korea

B9 (16:40-) New Manufacturing Process for GFRP Grating on Ships

Bo-Myung Seo, Ji-Su Choi, Seok-hee Han, Soo-Jeong Park, Yun-Hae Kim

1 Department of Mechanical Engineering, Korea Maritime and Ocean University, Republic of Korea
2 Major of Materials Engineering, Graduate school, Korea Maritime and Ocean University, Republic of Korea
3 Department of Ocean Advanced Convergence Engineering, Korea Maritime and Ocean University, Republic of Korea

Room C – Students’ presentations -

C5-C8 Chairpersons: Masamichi Suzuki and Jae-Eun Heo

C5 (15:20-) The Development of Umbrella Rain Removal Device by using Turning Force

Jin-Ho Lee, Jae-Heun Shin, Ji-Su Choi, Seong-Won Jo, Byeol Kim, Yun-Hae Kim

1 Department of the Mechanical Engineering, Korea Maritime and Ocean University, Republic of Korea
2 Division of Mechanical Engineering, Graduate school of Korea Maritime and Ocean University, Republic of Korea
3 Department of Ocean Advanced Convergence Engineering, Korea Maritime and Ocean University, Republic of Korea

C6 (15:40-) Ideas in Bus

Jae-Eun Heo, Shi-Ra Ryu, Jun-Yeop Park, Junh-Yuk Jong, Chae-Lin Im, Jeong-Hyo Hong, Yun-Hae Kim

1 Department of the International Trade Economics, Korea Maritime and Ocean University, Republic of Korea
2 Idea Factory, Associated Researcher, Korea Maritime and Ocean University, Republic of Korea
3 Department of Ocean Advanced Convergence International, Korea Maritime and Ocean University, Republic of Korea

C7 (16:00-) Putting a Laundry in Zip-Lock Bag Vinyl with Swelling, Hand-Wash and Rinse

Na-Young Kim, Jun-Ho Kim, Jeong-Hyo Hong, Yun-Hae Kim

1 Department of the International Trade Economics, Korea Maritime and Ocean University, Republic of Korea
2 Department of the Mechanical Engineering, Korea Maritime and Ocean University, Republic of Korea
3 Idea Factory, Associated Researcher, Korea Maritime and Ocean University, Republic of Korea
4 Department of Ocean Advanced Convergence Engineering, Korea Maritime and Ocean University, Republic of Korea

C8 (16:20-) Range-Finders Using a Laser Diode’s Frequency Noise as a Signal

Masamichi Suzuki, Yuki Kasuya, Daiki Kawakami, Hideaki Arai, Takashi Sato, Masashi Ohkawa, Yasuo Ohdaira, Shuichi Sakamoto

1 Graduate School of Science and Technology, Niigata University, Japan
2 Faculty of Engineering, Niigata University, Japan
Room D – General presentations -

D1 (13:40-) Promotion of Self-Growth of Students by PBL-Type Manufacturing Practice
Keiko Nakatani1, Tomoharu Doi1, Takeshi Wada1, Tadahiro Kaneda1, Takashi Sato2
1 Osaka Prefecture University College of Technology, Japan
2 Department of Electrical and Electronic Engineering, Niigata University, Japan

D2 (14:00-) Reconstruction of Engineering Education in Era of Innovation: A Practice of New Engineering Education at School of Engineering, Niigata University, Japan
Yuji Tanabe, Kazuo Ogura, Kazuhisa Abe
Graduate School of Science and Technology, Niigata University, Japan

D3 (14:20-) Outcomes of Research Internship Project “Smart Dormitory”
Kazuaki Yamagiwa, Takeshi Yamauchi, Tetsuo Oka, Takamasa Suzuki
School of Engineering, Faculty of Engineering, Niigata University, Japan

D4 (14:40-) Characteristic Research Internship Activities Conducted by Niigata University between Germany and Japan on Collaborative R&D Projects
Oka Tetsuo1, Nishimura Shin-ya2, Ogawa Jun2, Sato Takashi2, Sengoku Masakazu2
1 Shibaura Institute of Technology, Japan
2 Niigata University, Japan

(Break 15:00-15:20)

D5 (15:20-) On Sympathy and Shared Values in Science Communication
Yutaka Arimitsu1, Hidetsugu Yagi2
1 Graduate School of Science and Engineering, Civil and Environmental Engineering, Ehime University, Japan
2 Faculty of Collaborative Regional Innovation, Department of Industrial Innovation, Ehime University, Japan

D6 (15:40-) Science Communication Based Education Program for Graduate Students
Keiji Minagawa1,2, Yukihiro Arakawa2, Yasushi Imada2
1 Institute of Liberal Arts and Sciences, Tokushima University, Japan
2 Department of Applied Chemistry, Tokushima University, Japan

D7 (16:00-) Design of General/Basic Education Courses Utilizing Learning through Teaching at School Visit Programs
Keiji Minagawa1,2, Minoru Watanabe1, Takahito Saito1
1 Institute of Liberal Arts and Sciences, Tokushima University, Japan
2 Department of Applied Chemistry, Tokushima University, Japan

D8 (16:20-) Educational Efforts and Remarkable Activities at the Education Center for Engineering and Technology at Niigata University
Takamasa Suzuki, Tetsuo Oka, Takeshi Yamauchi, Kazuaki Yamagiwa, Takuji Haneda, Taku Hatori
Faculty of Engineering, Niigata University, Japan

Room E – General presentations –

E1 (13:40-) Study on Prediction of Fracture Strength of Single Lap Adhesive Joints
Genji Hotta1, Kosei Nakashima, Yusaku Shioyama2, Yoshifumi Obuchi3, Hidetoshi Sakamoto4
1,2,3,4
E2 (14:00-) Analysis of Effect of Learning Scaffolding by Reflection Tool in Design Thinking Activity
Kawase Mayumi¹, Ozeki Tomoe²
¹ Graduate School of Natural Science & Technology, Faculty of Engineering Gifu University, Japan
² Faculty of Engineering Gifu University, Japan

E3 (14:20-) Development of Teaching Materials for Electromagnetics Based on Real-World Applications
Ohtaki Yu¹, Ohchi Masashi²
¹ Graduate School of Engineering, Chiba Institute of Technology, Japan
² Department of Electrical and Electronic Engineering, Chiba Institute of Technology, Japan

E4 (14:40-) A Case of Robotics Basic Design Course
Cheolwoo Jo, Ohseol Kwon, Jaehyung Kim
Changwon National University, Republic of Korea

(Break 15:00-15:20)

E5-E9 Chairpersons: Cheolwoo Jo and Mayumi Kawase

E5 (15:20-) Development of Applications for Electric Circuit Learning using Mobile Devices
Kei Ebisawa, Naoyuki Aikawa
Faculty of Industrial Science and Technology, Tokyo University of Science, Japan

E6 (15:40-) Learning about Japanese Traditional Technique By Experiencing How To Make A “Folding Fan”
Fujiko Abe¹, Yoshifumi Ohbuchi¹, Hidetoshi Sakamoto²
¹ Faculty of Advanced Technology and Science, Kumamoto University, Japan
² Graduate School of engineering and Science, Doshisya University, Japan

E7 (16:00-) Evaluation of Product Performance from Mass Productivity and Operability in Product Development Project based on Quality Engineering
Kaoru Takaku¹, Kazuaki Yamgiwa²
¹ Takaku Research Institute Ltd., Japan
² School of Engineering, Faculty of Engineering, Niigata University, Japan

E8 (16:20-) A Chemical Experiment Subject To Experience The Design of Engineering Solutions
Kimura Isao, Mikami Takashi
Chemical Engineering Course, Faculty of Engineering, Niigata University, Japan

E9 (16:40-) Improving Chemical Engineering Experimentation Course – Can Experimental Result Agree with the Theoretical Prediction?
Tadaaki Shimizu
Chemical Engineering Course, Faculty of Engineering, Niigata University, Japan
Day2, June 25

Keynote Lecture

KL2 (10:00-) Chairperson: Takashi Sato
Progress of ACEE and Future Pathway

Yun-Hae Kim
Department of Ocean Advanced Convergence Engineering, Korea Maritime and Ocean University, Republic of Korea

Room F – Students’ presentations and General presentations –

F1 – F5: Students’ presentations

F1-F5 Chairpersons: Asuka Mano and Seongkeun Yeon

F1 (10:40-) A Capstone Design of the Paper Fluidic Devices for Manufacturing the Printed Electronics

Jangseop Lee, Jieun Jung, Jongtae Youn
Department of Graphic Arts, Information Engineering, Pukyong National University, Republic of Korea

F2 (11:00-) Car Sensor Outside

Seong-Dae Kim¹, Jeong-Hyo Hong², Yun-Hae Kim³
¹ Department of Mechanical Engineering, Korea Maritime and Ocean University, Republic of Korea
² Idea Factory, Associated Researcher, Korea Maritime and Ocean University, Republic of Korea
³ Department of Ocean Advanced Convergence Engineering, Korea Maritime and Ocean University, Republic of Korea

F3 (11:20-) Identification of Drones for Activating Drones Industry

Se-Chan Choi¹, Dong-Woo Ko¹, Gang-Ik Jin¹, Chae-Won Kim¹, Ye-Ji Kim¹, Jeong-Hyun Lee¹, Hyun-Seung Shin¹, Jeong-Hyo Hong², Yun-Hae Kim³
¹ Automatic control engineering, Korea Maritime and Ocean University, Republic of Korea
² Logistics Engineering, Korea Maritime and Ocean University, Republic of Korea
³ Idea Factory, Associated Researcher, Korea Maritime and Ocean University, Republic of Korea

F4 (11:40-) Filtering System of Microplastics through Using Vessel

Sung-Sick Jo¹, Ki-Cheol Kang², Min-Whan Joo², Jeong-Woo Sin², Da-Bin Hong³, Jeong-Hyo Hong³, Ha-Jong Kim³
¹ Division of Navigation Science, Korea Maritime and Ocean University, Republic of Korea
² Division of the Mechanical Engineering, Korea Maritime and Ocean University, Republic of Korea
³ Division of Marine System Engineering, Korea Maritime and Ocean University, Republic of Korea

F5 (12:00-) We Can Breathe Cleaner and More Hygienic: Changing Fine Dust Mask

Gyung-Min Kim¹, Jeong-Hyo Hong², Yun-Hae Kim²
¹ Division of International Trade and Economics, Korea Maritime and Ocean University, Republic of Korea
² Idea Factory, Associated Researcher, Korea Maritime and Ocean University, Republic of Korea
³ Department of Ocean Advanced Convergence Engineering, Korea Maritime and Ocean University, Republic of Korea
Keynote Lecture
KL3 (13:20-) Chairperson: Yasutaka Ueda
Student Exchange Program in Faculty of Engineering, Niigata University from Program Coordinators’ Point of View
Takashi Sato, Takamasa Suzuki, Tadaaki Shimizu, Shuichi Sakamoto, Tomohiro Sasaki, Tetsuo Oka
Faculty of Engineering, Niigata University, Japan

F6 –F7: General presentations
F6-F7 Chairperson Tadaaki Shimizu

F6 (14:00-) Global PBL in Engineering Education: G-DORM Project Experiences in 2017
Ueda Yasutaka, Tsuboi Nozomu, Suzuki Takamasa, Abe Kazuhisa, Suzuki Toshio, Kourakata Itaru, Nakano Sachiko
Faculty of Engineering, Niigata University, Japan

F7 (14:20-) The Internationalization Policy and Strategy at Shibaura Institute of Technology
M. Muralidhar, T. Hasegawa, M. Inoue, M. Morita, M. Murakami
Shibaura Institute of Technology, Japan

(Break 14:40-15:00)

Keynote Lecture
KL4 (15:00-) Chairperson: Yun-Hae Kim
Enhancing Employability for Engineering Students through Corporate Communication Skills
Awangku Hassanal Bahar Pengiran Bagul
Faculty of Business, Economics and Accountancy, Universiti Malaysia Sabah, Malaysia

F8 –F10: General presentations
F8-F10 Chairperson Takamasa Suzuki

F8 (15:40-) Introduction to WISET and Women Included Engineering Education Program of PKNU in Republic of Korea
Songah Choi1, Jieun Jung1, Jongtae Youn2
1 WISET Program of Pukyong National University, Republic of Korea
2 Department of Graphic Arts Information Engineering, Pukyong National University, Republic of Korea

F9 (16:00-) The Object Detection System using Deep Learning and CCTV on the Restricted Access Area
Dong Myung Lee, Gu Sam Park
Dept. of Computer Engineering, Tongmyong University, Republic of Korea

F10 (16:20-) Restaurant Recommendation with Artificial Intelligence Equipped Speakers
Seungsu Lee, Jeongwoo Shin, Taeuk Kim, Dae-Ki Kang
Dongseo University, Republic of Korea
Day1, June 24 – Day2, June 25

Poster Presentations

(PS1) Color System Transform from RGB to L*a*b* using Neural Network - Consideration in Hues of B, BG and PB -
Tomohiro Moriya¹, Kazuki Tashiro¹, Kyoko Hariyama¹, Masashi Ohkawa²
¹ Graduate School of Science and Technology, Niigata University, Japan
² Faculty of Engineering, Niigata University, Japan

(PS2) Step Response Dependent on Step Pressure in a Micropressure Sensor with a Semi-Closed Hollow Structure
Naoto Takaoka¹, Hana Ono¹, Takashi Sato², Masashi Ohkawa²
¹ Graduate School of Science and Technology, Niigata University, Japan
² Faculty of Engineering, Niigata University, Japan

(PS3) Wastewater Treatment by Horizontal Flow Constructed Wetland with Membrane-mediated Passive Aeration – Outcomes of Undergraduate Research Project “Smart Dormitory” –
Kazuumi Matsukawa¹, Saki Ashihara², Yoshiki Fukuda¹, Kazuaki Yamagiwa¹
¹ Chemistry and Chemical Engineering Program, Niigata University, Japan
² Materials Science Program, Niigata University, Japan

(PS4) Magnetorheological Effect for Magnetic Elastomers Containing Plastic Beads
Akama Shota¹,², Kawai Mika¹,², Mitsumata Tetsu¹,²
¹ Graduate School of Science and Technology, Niigata University, Japan
² ALCA, Japan Science and Technology Agency, Japan

(PS5) Giant Magnetorheology for Magnetic Elastomers with Random Dispersion of Giant Magnetic Particles
Watanabe Mayuko¹,², Kawai Mika¹,², Mitsumata Tetsu¹,²
¹ Graduate School of Science and Technology, Niigata University, Japan
² ALCA, Japan Science and Technology Agency, Japan

(PS6) Anisotropy in Electric Conductivity for Magnetic Elastomers under Magnetic Fields
Abe Shota¹,², Kawai Mika¹,², Mitsumata Tetsu¹,²
¹ Graduate School of Science and Technology, Niigata University, Japan
² ALCA, Japan Science and Technology Agency, Japan

(PS7) Effects of Operative Factors in the Pendant Drop Method for Characterizing Interfacial Tension
Suzuki Manami¹, Takahashi Ryuta¹, Taguchi Yoshinari², Kimura Isao²
¹ Graduate School of Science and Technology, Niigata University, Japan
² Chemical Engineering Course, Faculty of Engineering, Niigata University, Japan

(PS8) Forming Uniform Magnetic Field Using Face-to-Face Magnetic Poles Containing HTS Bulk Magnets
Kazuwa Higa², Shunta Tsunoda¹, Jun Ogawa¹, Satoshi Fukui¹, Takao Sato¹, Tetsuo Oka¹, Kazuya Yokoyama³, Takashi Nakamura⁴
¹ Department of Electrical and Electronic Engineering, Niigata University, Japan
² Graduate School of Science and Technology, Niigata University, Japan
³ Ashikaga Institute of Technology, Japan
⁴ RIKEN, Japan

(PS9) Plant Cultivation Experiment by Using Synthesized Phosphorus Fertilizer Derived from Sludge Ash and Developing the Phosphorus Recovery Process from Sludge Ash
Mayu Watanabe¹, Yuki Nakadai¹, Yuka Kikuch¹, Naoki Kano², Hee-Joon Kim²
¹ Department of Function and Material Engineering, Niigata University, Japan
² Department of Chemistry and Chemical Engineering, Niigata University, Japan

(PS10) Synthesizing Fertilizer by Using Recovered-Phosphorus and Developing Recovery Process of Phosphorus from Sludge Ash
Daiki Tanaka¹, Ken Ito¹, Naoki Kano², Hee-Joon Kim²
¹ Department of Function and Material Engineering, Niigata University, Japan
² Department of Chemistry and Chemical Engineering, Niigata University, Japan

(PS11) Plasma Treatment of Carbon Blacks for Dispersion Improvement in Electrospun Complex Nanofibers
Jingjing Zhang¹, Yeong Min Park¹, Tae Gyu Kim²
¹ Department of Nano fusion Technology, Pusan National University, Korea
² Department of Nanomechatronics Engineering, Pusan National University, Republic of Korea

(PS12) Magnetization of Permanent Magnet using a Superconducting Bulk Magnet
Shoya Hasebe¹, Hiroti Ikarashi¹, Jun Ogawa¹, Satoshi Fukui¹, Takao Sato¹, Tomohito Nakano¹, Tetsuo Oka²
¹ Niigata University, Japan
² Shibaura Institute of Technology, Japan

(PS13) The Study of Pulse Field Magnetization to MgB2 Superconducting Bulk with Ti Doped
Takeda Akira¹, Oki Hayami¹, Oka Tetsuo², Ogawa Jun¹, Fukui Satoshi¹, Yokoyama Kazuya³, W. Häßler⁴, J. Scheiter⁴
¹ Niigata University, Japan
² Shibaura Institute of Technology, Japan
³ Ashikaga Institute of Technology, Japan
⁴ IFW Dresden, Germany

(PS14) Amplification of Magnetic Field By Meissner Effect of Two Superconductors
Tohru Abe¹, Kohei Ohkochi², Yuua Kuraishi², Syunta Tsunoda³, Yusuke Abe², Toshiki Hoshina¹, Tomoya Izumida², Mitsuhiro Matsuki¹, Yutaro Shiozawa³, Tetsuo Oka⁴
¹ Department of Materials Science and Technology, Niigata University, Japan
² Department of Electrical and Electric Engineering, Niigata University, Japan
³ Electrical, Information and Communication Engineering program, Niigata University, Japan
⁴ Graduate School of Science and Technology, Niigata University, Japan