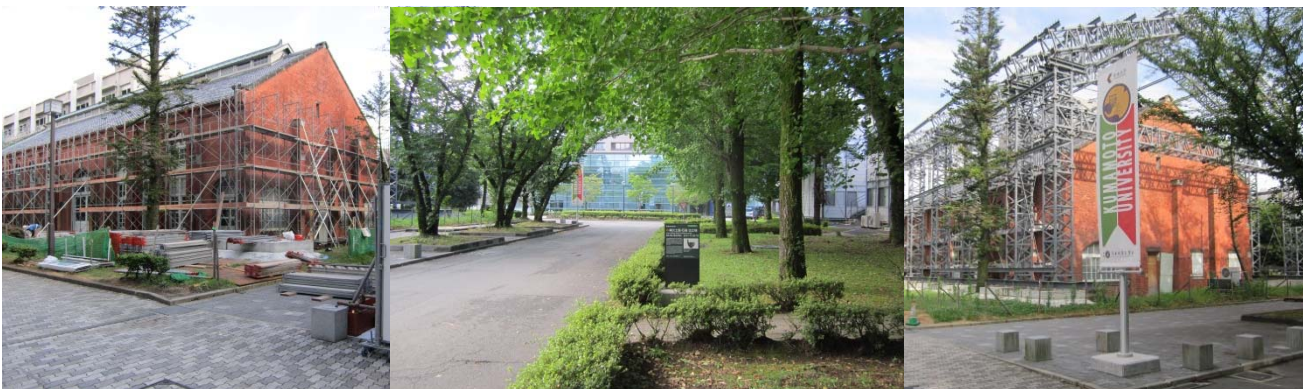




2018 ENGINEERING WORKSHOP in Kumamoto



November 15-17, 2018

Kumamoto, Japan

Organized by
Faculty of Engineering
Kumamoto University

The abstracts can be downloaded from a following website

<https://www.eng.kumamoto-u.ac.jp/2018-engineering-workshop-in-kumamoto11-1511-17/>



Welcome Message



A handwritten signature in black ink that reads "Tsuyoshi Usagawa". The signature is fluid and cursive, with a long horizontal stroke at the end.

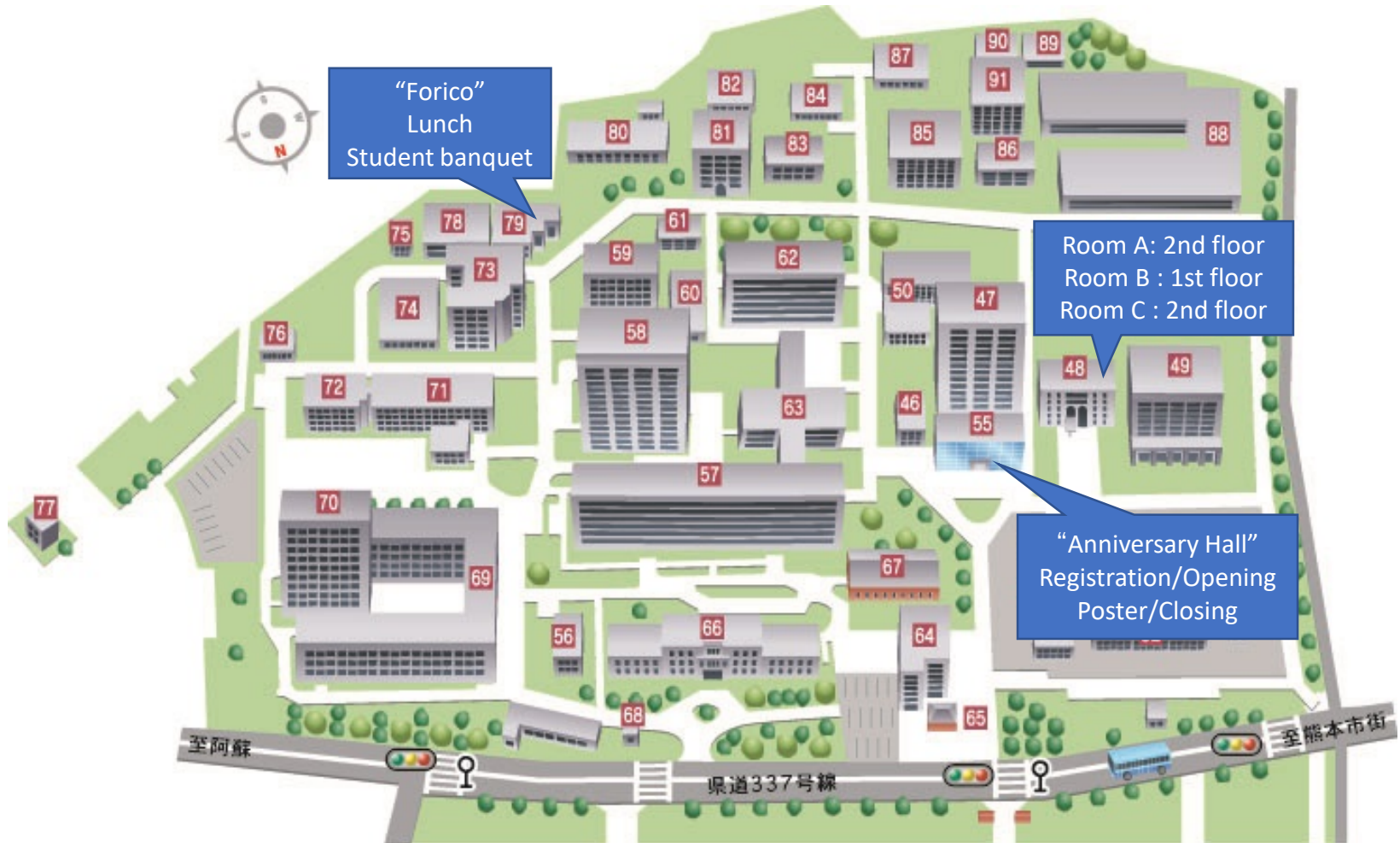
Prof. Tsuyoshi USAGAWA, PhD
Dean of Faculty of Engineering, Kumamoto University

On behalf of the Faculty of Engineering of Kumamoto University, I would like to cordially welcome you to “The 2018 Engineering Workshop in Kumamoto, Japan, on 15-17 November, 2018. It is our tremendous honor to host this workshop, and we have planned an exciting program that includes presentation of research works of both faculty members and students from four participating universities.

This Workshop has been successfully held among Shandong University, Ajou University and Kumamoto University and it will be the 11th this year. Although Ajou University could not join since the last one, we will welcome new partners from National Kaohsiung University of Science and Technology, and Southern Taiwan University of Science and Technology. The aim of the workshop is to bring together the participants from partner universities and exchange information on research and education in the field of engineering. This year, Kumamoto University will propose themes in several engineering fields to deepen the discussion and promote further exchanges between participants. We have also arranged some exciting social and fieldtrip programs that will allow the participants to enjoy their stay in Kumamoto in this beautiful season.

Thank you for your attendance and proactive participation, and we wish all participants a successful meeting and a most enjoyable stay in Kumamoto.

Kumamoto University Kurokami South Campus



2018 Engineering Workshop in Kumamoto (Nov. 16, 2018)			
	Mechanical System Engineering and Mathematics	Architecture, Civil and Environmental Engineering	Materials Science and Chemistry
Start time	Room A	Room B	Room C
10:00	Registration(Anniversary Hall)		
10:30	Opening(Anniversary Hall)		
10:50	Break		
11:10	OA-1	OB-1	OC-1
11:30	OA-2	OB-2	OC-2
11:50	OA-3	OB-3	OC-3
12:10	OA-4	OB-4	OC-4
12:30	Lunch(Forico)		
13:40	Poster session(Anniversary Hall)		
	PA-1~	PB-1~	PC-1~
14:40	Break		
15:00	OA-5	OB-5	OC-5
15:20	OA-6	OB-6	OC-6
15:40	OA-7	OB-7	OC-7
16:00	Break		
16:20	OA-8	OB-8	OC-8
16:40	OA-9	OB-9	OC-9
17:00	OA-10	OB-10	OC-10
17:40	Closing(Anniversary Hall)		
18:30	Banquet(Hotel KKR)/Student Banquet(Forico)		
	Adjourn		

OA/OB/OC

Oral presentation

PA/PB/PC

Poster presentation

Guidelines of Oral and Poster Presentations

The official language is English.

[Oral Presentation]

1. The oral presentation is limited to 20 min (presentation 15min and Q&A 5min).
2. Speakers will need to upload their presentations to the laptops provided by the organizers at least 5 minutes before the beginning of their sessions. The 4:3 or 16:9 aspect ratio of the PowerPoint files is recommended. At your request, your laptop also can be used.
3. The best presentation award will be selected from student speakers.

[Poster Presentation]

1. Poster should be A0 size hopefully, but you may also use the other size which must fit the panel size 120cm wide ×180cm high.
2. Please post your poster before 13:00 (Nov.16) on the specified panel where post pins are prepared. Students from Kumamoto University can post posters at 9:00 (Nov. 16).
3. The posters should be presented between 13:40 and 14:40.
4. The posters should be removed before the closing ceremony at 17:40.

Mechanical System Engineering and Mathematics

Mode	No.	Abstract Title	Authors	Affiliation
oral	OA- 1	On the uniqueness of adapted solutions to BSDEs	<u>Yufeng Shi</u>	Shandong University
oral	OA- 2	On the relationship between combinatorial structures of subset sum problems and generalized dimensions	<u>Shoichi Kamada</u>	Kumamoto University
oral	OA- 3	Maximal Entropy Random Walk on heterogenous network for MiRNA-disease Association prediction	<u>Ya-Wei Niu</u> , Guang-Hui Wang	Shandong University
oral	OA- 4	Degree sum conditions for partitioning graphs into cycles with a specified number of chords	<u>Shuya Chiba</u> , Suyun Jiang, Jin Yan	Kumamoto University
oral	OA- 5	An Intelligent Mold Testing Method Developed for Injection Molding	<u>Ming-Shyan Huang</u> , Yung-Chih Fang, Shih-Chih Nian	National Kaohsiung University of Science and Technology
oral	OA- 6	Machine learning-based context-aware application in manufacturing	<u>Yingxin Ye</u> , Tianliang Hu	Shandong University
oral	OA- 7	DVC measurement of invasive deformation field of ECM generated by cancer cell with/without EMT	<u>Yasuyuki Morita</u>	Kumamoto University
oral	OA- 8	Introduction of Multi-Fluids Mixer and Its Application to Water Purification as Microbubble Generator	<u>Akimaro Kawahara</u>	Kumamoto University
oral	OA- 9	Development of a Novel Heat-transfer Device Using a 3-D Printer	<u>Yasushi Koito</u> , Fumihiko Hideyama	Kumamoto University
oral	OA- 10	Thermal Propagation in Thin Film Heated from Both Side-Wall	<u>Shuichi Torii</u>	Kumamoto University
poster	PA- 1	Study on dominant parameters of probe design for wafer test	Shunta Mori, Keisuke Takeda, Yasuo Marumo	Kumamoto University
poster	PA- 2	Random Finite Element Analysis on Solid Rocked Engine Vessel	Chong LIU, Shuichi TORII	Kumamoto University
poster	PA- 3	Induction coil modular design and mold surface heating application	Chun-Ying Liu, Ming-Shyan Huang	National Kaohsiung University of Science and Technology
poster	PA- 4	Modal couple effect on milling stability of thin-walled workpiece	Jian Gao, Qinghua Song, Zhanqiang Liu	Shandong University
poster	PA- 5	Utilization of CFD Simulation to Realize the Mixing Behavior of Liquid Sludge in An Anaerobic Digester	Huqe Farhana	Kumamoto University
poster	PA- 6	Experimental investigation on droplet impingement behavior on low-surface energy solids	Issei Tomimitsu, Yukihiro Yonemoto, Yosuke Kawano, Tomoaki Kunugi	Kumamoto University
poster	PA- 7	Suspension Impact Acoustic Machine for Buildings	Tatsuya Hirayama	Kumamoto University
poster	PA- 8	The design and The design and implementation of a vacuum suction micromouse	Li-Chun, Tsai	Southern Taiwan University of Science and Technology
poster	PA- 9	Packing four copies of a (p,q)-graph	Yun Wang, Jin Yan	Shandong University
poster	PA- 10	Development of Training Machine for Hairpin Net Shot in Badminton	Ryo Iwamoto	Kumamoto University
poster	PA- 11	CFD Modeling of Gasification for Syngas Characterization from Palm Empty Fruit Bunch Biomass	Priyambodo Nur Ardi Nugroho, Shuichi Torii	Kumamoto University

Architecture, Civil and Environmental Engineering

Mode	No.	Abstract Title	Authors	Affiliation
oral	OB- 1	Experimental Study of Salt Penetration Resistance in Concrete that Combines the Use of High-Durability Admixtures with Fly Ash or Ground Granulated Blast-Furnace Slag	<u>Tomohiko Igata</u> , Toshio Urano, Manabu Matsuda, Kiyoshi Murakami	Kumamoto University
oral	OB- 2	Blast Resistance of SIFCON Using High-Fluidity Grout of Mortar Mix against Contact Detonation	<u>Shintaro Morishima</u> , Makoto Yamaguchi	Kumamoto University
oral	OB- 3	Nonresponse Bias in Mixed-Mode Surveys for Disaster Recovery: Case of Mashiki following the 2016 Kumamoto Earthquake	<u>Yoshihiro Sato</u> , Takuya Maruyama	Kumamoto University
oral	OB- 4	Effects of Oblique Weir with An Opening on Bed Deformation and Flow Structure	<u>Hiroataka Une</u> , Terunori Ohmoto, Kanji Adachi, Hiroto Kondo	Kumamoto University
oral	OB- 5	A Machine Learning Method for Monitoring Ground-level PM2.5 Concentrations	<u>Xintong Li</u> , Xiaodong Zhang	Shandong University
oral	OB- 6	Verification of the Preservation Effect of the Aquo-Siloxane Method towards Porous Rock Materials	Kentaro Fujita, <u>Akira Sato</u>	Kumamoto University
oral	OB- 7	Residential Preference Analysis of Households in Mashiki Temporary Housing Using Group-Based Discrete Choice Model and Decision Tree	<u>Hajime Watanabe</u> , Takuya Maruyama	Kumamoto University
oral	OB- 8	Study on High-strength Support System of Confined Concrete in Underground Engineering with Complex Conditions	<u>Wang Qi</u>	Shandong University
oral	OB- 9	Intelligence and Evolution: Design of Next Generation Intelligent Transport Management System for Jinan	<u>Nan Zou</u> , Shuliang Pan, Fan Wu	Shandong University
oral	OB- 10	Extracting heat from composting of biosolid	<u>ZENG Yang</u> , WANG Shun	Shandong University
poster	PB- 1	Route choice behaviors and traffic characteristics on parallel urban major	Fan Wu, Nan Zou	Shandong University
poster	PB- 2	Congestion Prediction for Fixed Urban Zones with a Neural Networks Model	Liyuan Liu, Nan Zou	Shandong University
poster	PB- 3	Travel Time Variation and Impact Factors: A Case Study of Busy Urban	Jinming Du, Nan Zou	Shandong University
poster	PB- 4	Investigating Bias by Proxy Response in Open-Ended Questions	Kazuki Uehara, Tomoki Kawano, Takuya Maruyama	Kumamoto University
poster	PB- 5	Increase in Traffic Accidents after the 2016 Kumamoto Earthquake	Kazutake Taguchi, Tomoki Kawano, Hajime Watanabe, Yoshihiro Sato, Takuya Maruyama	Kumamoto University
poster	PB- 6	Topic Modeling Approach to Analyze Students' Activities on Kumamoto University Campus Using Smartphone-Based Survey Data	Rintaro Kizaki, Tomoki Kawano, Takuya Maruyama	Kumamoto University
poster	PB- 7	Comparative Analysis of the Rate of Households with Every Member Out-of-Home (HEMO) using Kumamoto Person Trip Surveys in 1984, 1997,	Tatsuya Fukahori, Tomoki Kawano, Yoshihiro Sato, Takuya Maruyama	Kumamoto University
poster	PB- 8	Topic Modeling Approach to Analyze Visitors' Activities on Downtown Using Smartphone-Based Travel-Survey Data	Tomoki Kawano, Takuya Maruyama	Kumamoto University
poster	PB- 9	Analysis of Visiting Place and Staying Time in Downtown Kumamoto Using a Discrete-Continuous Choice Model	Yuki Taketa, Tomoki Kawano, Hajime Watanabe, Takuya Maruyama	Kumamoto University
poster	PB- 10	The operation improvement of the community bus using only the data obtained from the bus location system and the conventional questionnaire	Nana Amafuji, shoshi Mizokami	Kumamoto University
poster	PB- 11	The acute toxicity of polystyrene nanoplastics to <i>Chlorella vulgaris</i>	Xiao-Dong Sun, Xian-Zheng Yuan, Shu-Guang Wang	Shandong University
poster	PB- 12	An experiment on the effect of surrounding sound on acoustic comfort in conversing in multi-group conversation space	Naoya Maruyama, Keiji Kawai	Kumamoto University
poster	PB- 13	A measurement of power levels of sound sources in various activities in child daycare	Ryunosuke Yamane, Keiji Kawai	Kumamoto University
poster	PB- 14	Uplifting Phenomena in the Sliding and Outer bay of Multi Storied Steel Frames Equipped with Friction Dampers at the Column Base	Aya Tateno, Minoru Yamanari	Kumamoto University
poster	PB- 15	Seismic Response Analysis of A School Gymnasium with Steel Roof due to the 2016 Kumamoto Earthquake	Takahiro Yano, Syota Yasuda, Katsuhiko Goto, Eriko Tomokiyo, Minoru Yamanari	Kumamoto University
poster	PB- 16	Survey of Damage of School Gymnasiums after the 2016 Kumamoto Earthquake	Shota Yasuda, Takahiro Yano, Katsuhiko Goto, Eriko Tomokiyo, Minoru Yamanari	Kumamoto University
poster	PB- 17	Effect of Hyper-Concentrated Sediment on Flow Resistance Characteristics and Flow Field in an Open Channel with Closed-Packed	Hiroto Kondo, Terunori Ohmoto, Kanji Adachi, Hiroataka Une	Kumamoto University
poster	PB- 18	Examination of Earthquake Response Characteristics by the Difference of Occupancy of Fixed Columns of Steel Frame with Friction Dampers	Daiki HIRATA, Dong YANG, Minoru YAMANARI	Kumamoto University
poster	PB- 19	Study on Seismic Behavior of Steel Frame with Stick Damper Mechanism	Honami Eguchi, Guang Xu, Minoru Yamanari	Kumamoto University
poster	PB- 20	Comparing Victims Living In and Outside Their Hometown of Mashiki After the 2016 Kumamoto Earthquake	Anna NAGASAKO, Hajime WATANABE, Yoshihiro SATO, Takuya MARUYAMA	Kumamoto University
poster	PB- 21	Housing Repair Method Choice and Use of Emergency Repair Systems in Mashiki following the 2016 Kumamoto Earthquake	Katsuya Kumagae, Tomoki Kawano, Hajime Watanabe, Yoshihiro Sato, Takuya Maruyama	Kumamoto University
poster	PB- 22	Combination of First-order and Second-order Structural Design of Steel Building Focused on Learning Support System	Yushi Matsuda, Minoru Yamanari	Kumamoto University
poster	PB- 23	Investigation of damage of steel school buildings with suspended ceiling in the 2016 Kumamoto earthquakes	Yuta Sasaki, Kenshi Ochi	Kumamoto University
poster	PB- 24	Comparative Analysis of Optimization Carsharing Station Placement	Masaki Yamamoto, Shoshi Mizokami, Yuta Ueno	Kumamoto University
poster	PB- 25	THE HELLENISTIC SCENE BUILDING OF THE THEATRE AT MESSENE	Mitsuki YAMAZATO, Ryuichi YOSHITAKE	Kumamoto University
poster	PB- 26	Study on stone joint technique in Hellenistic and Roman period in Greece	Yasufumi Nakashima, Ryuichi Yoshitake	Kumamoto University

Materials Science and Chemistry

No.	Abstract Title	Authors	Affiliation
OC- 1	NiS _{1.03} Hollow Spheres and Cages as Superhigh Rate Capacity and Stable Anode Materials for Half/Full Sodium-Ion Batteries	Caifu Dong , Liqiang Xu	Shandong University
OC- 2	Intelligent Casting Riser Optimization on TMCast Software Frame	Anchen Shao , Xuelei Tian	Shandong University
OC- 3	Effect of Magnetic Field Imposition on Electro-deposition of ZnTe	Toshiyuki Kozuka	Kumamoto University
OC- 4	Wear-Resistant Surfacing Layer Prepared by High Efficiency Twin-Wire Indirect Arc Welding	Dongting Wu , Yong Zou, Chuanwei Shi, Guanlin Zhao	Shandong University
OC- 5	Gas Sensing with metal oxide nanocrystals	Tetsuya Kida	Kumamoto University
OC- 6	Effect of Buffer Layer on the Structural Properties of Tin Oxide Thin Film on Sapphire Substrate by Mist Chemical Vapor Deposition	Thant Zin Win , Takumi Furukawa, Yudai Tanaka, Koshi Okita, Kensuke Minami, Koji Sue, Zenji Yatabe, Yusui Nakamura	Kumamoto University
OC- 7	POMs Encapsulated in High-Nuclearity Silver Cluster	Di Sun, Zhi Wang	Shandong University
OC- 8	The Study of Polymer Derived Silicon Oxycarbonitride for Anti-hydrolysis	Lung-Hao Hu	Southern Taiwan University of Science and Technology
OC- 9	POSS Grafted Polybenzimidazole Hibrid Materials	Qingzeng Zhu	Shandong University
OC- 10	Necklace-shaped Dimethylsiloxane Polymers Bearing POSS Cages	Masashi KUNITAKE , Tsubasa NATSUAKI, Kenta KUMEDA, Satoshi WATANABE	Kumamoto University
PC- 1	Activity of Slip and Twin Systems in Pure Titanium Polycrystals	Keisuke Takemoto, Hiromoto Kitahara, Sinji Ando	Kumamoto University
PC- 2	Local Deformation Behavior of Pure Mg, Zn, and Ti Single Crystals Using Ball Indenter	WatanabeMomoka, Hiromoto Kitahara	Kumamoto University
PC- 3	Mist-CVD deposition of AlTiO thin films for potential applications in AlGa _N /Ga _N MOS-HEMTs	K. Nishiyama, K. Nishimura, T. Tsuda, Z. Yatabe, K. Sue, Y. Nakamura	Kumamoto University
PC- 4	Electrochemical Hydrogen Separation using a Graphene Oxide Membrane	Masataka Shintani, Nur Laila Hamidah, Mitsuru Sasaki, Armando T. Quitain, Tetsuya Kida	Kumamoto University
PC- 5	Synthesis of Lead-free Perovskite Quantum Dots for by an emulsion method	Shuhei Tomonaga, Azzah Dyah Pramata, Yuji Akaishi, Mitsuru Sasaki, Armando T. Quitain, Tetsuya Kida	Kumamoto University
PC- 6	Formation of N-doped ZnO thin films formed by annealing in NH ₃ gas ambient	Takumi Furukawa, Masato Takenouchi, Yudai Tanaka, Koji Sue, Shoji Nagaoka, Zenji Yatabe, Yusui Nakamura	Kumamoto University
PC- 7	Fabrication of single crystals of organic semiconductors in hydrogel capillaries	Ryota Urata, Satoshi Watanabe, Tetsuya Sato, Shintaro Ida, Masashi Kunitake	Kumamoto University
PC- 8	Electrochemical CO ₂ reduction using metal modified carbon electrodes	Yudai Hirano, Mitsuru Sasaki, Armando T. Quitain, Tetsuya Kida	Kumamoto University
PC- 9	Epitaxial growth of non-polar ZnO films on buffer layers on sapphire substrates by mist chemical vapor deposition	Yudai Tanaka, Yuki Nagao, Takumi Furukawa, Zenji Yatabe, Koji Sue, Nagaoka Shoji, Yusui Nakamura	Kumamoto University
PC- 10	Enhancing the Stability of CsPbX ₃ Quantum Dots by Metal Oxide Coating	Yuji Akaishi, Azzah Dyah Pramata, Shuhei Tominaga, Shimpei Kawashima, Mitsuru Sasaki, Armando T. Quitain, Tetsuya Kida	Kumamoto University
PC- 11	Gas sensing properties of pn junction films using ZnO nanorods and CuO nanocrystals	Yuta Kido, Mitsuru Sasaki, Armando T. Quitain, Tetsuya Kida	Kumamoto University
PC- 12	Synthesis and Application of Necklace Shaped Inorganic Polymers	Tsubasa Natsuaki, Kenta Kumeda, Naohiro Katsuta, Masashi Kunitake, Tomoyuki Ohba, Kazuya Suwa, Daisuke Kawaguchi, Keiji Tanaka	Kumamoto University
PC- 13	Preparation and Properties of anodizing film on 5XXX aluminum alloy	Yu-Chen Wang, Wen-Chang Wu	Southern Taiwan University of Science and Technology
PC- 14	Thermal and Optical properties of graphene nanocomposites for Green Architectures	Sheng-Hui Kao, Lung-Hao Hu	Southern Taiwan University of Science and Technology
PC- 15	Highly Concentrated Aqueous Electrolyte for High Voltage Li-ion Hybrid Supercapacitor	Xiaowen Zheng, Lina Chen, Pengchao Si	Shandong University
PC- 16	NH ₃ Combustive Decomposition over Various Supported Catalysts	Kento Araki, Saaya Kiritoshi, Satoshi Hinokuma, Masato Machida	Kumamoto University
PC- 17	Catalytic NH ₃ Combustion over CuO _x /3Al ₂ O ₃ -2SiO ₂	Saaya Kiritoshi, Kento Araki, Satoshi Hinokuma, Masato Machida	Kumamoto University
PC- 18	C-C coupling and structural control of porphyrin derivatives with halogen functional groups	Ryusei Haraguchi, Yuma Ikeda, Soichiro Yoshimoto	Kumamoto University
PC- 19	Fabrication and Nanoscale Characterization of Nanographene Monolayers Using Aromatic Micelle	Sakura Origuchi, Michito Yoshizawa, Soichiro Yoshimoto	Kumamoto University
PC- 20	Edible bird's nest protein hydrolysates decrease melanogenesis in B16F10 mouse melanoma cells	Chu-An Yang, Chun-Sheng Chang	Southern Taiwan University of Science and Technology
PC- 21	Photocatalytic activity of Rh-doped oxide nanosheet	Hsu Chu Wei, Shintaro Ida	Kumamoto University

EXECUTIVE COMMITTEE
The 2018 Engineering Workshop in Kumamoto

Chair: Prof. *Masato Machida*
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