

MISW 2019 Program and Contents

7th August (Wed.)

8:30-9:00	Registration @Registration desk, West 9 Building
9:00-9:10	Opening Remark @Digital Multi-purpose Hall, West 9 Building by Prof. Kazuya Masu, President of Tokyo Institute of Technology
9:10-9:25	Photo Session @Digital Multi-purpose Hall
9:25-9:30	Short Break
9:30-10:10	Short Presentation @Digital Multi-purpose Hall Introduction of Overseas Universities (4 min for each) <ol style="list-style-type: none">1. Tsinghua University2. National Taiwan University3. Nanyang Technological University4. Bandung Institute of Technology5. Chulalongkorn University6. Hanoi University of Science and Technology7. Indian Institute of Technology Madras8. University of Moratuwa Introduction of Exchange Program by Prof. Jiro Takemura, Department of Civil and Environmental Engineering
10:10-11:10	Poster Presentation @Collaboration Room, West 9 Building

- P-1 **Strength Improvement of GFPR by Graphene Coating on Glass Fiber**
Liwen Wang, Jonathon Tanks, Yoshihiko Arao and Masatoshi Kubouchi
Department of Chemical Science and Engineering
- P-2 **Improved performance of triple layer organic photovoltaic devices by inserting Quinacridone layer**
Ai Fujiyama and Ken Ishikawa
Department of Materials Science and Engineering
- P-3 **Development of optical oxygen sensors using crosslinked polymers**
Shota Suzuki and Tsuyoshi Michinobu
Department of Materials Science and Engineering
- P-4 **Synthesis of All-Acceptor Semiconducting Polymers for High-Performance N-Channel Transistors**
Kazuya Higuchi and Tsuyoshi Michinobu
Department of Materials Science and Engineering

- P-5 **Hole-Transporting Properties of Chiral Aromatic Amine Films Prepared by Spin-Coating**
Etsuya Furuhashi and Tsuyoshi Michinobu
Department of Materials Science and Engineering
- P-6 **Effect of additives on radical degradation of EPDM and FKM rubber**
Yusuke Fujii, Hiroaki Yasuda, Takeshi Hamamura, Yoshihiko Arao and Masatoshi Kubouchi
Department of Materials Science and Engineering
- P-7 **Mechanical Properties of Fiber Reinforced Geopolymer Mortar and Concrete**
Pengfei Jia, Kazumasa Okubo and Junichiro Niwa
Department of Civil and Environmental Engineering
- P-8 **Mechanically induced cascaded long-period grating structure for reflectometric strain and temperature sensing**
Avik Kumar Das, Kohei Noda, Heeyoung Lee, Neisei Hayashi, Yosuke Mizono and Kentaro Nakamura
Department of Information and Communications Engineering
- P-9 **Process of Emphasizing the Color of the Lesion from Multi-Spectral Images**
Yathest Dadhich, Hiroyuki Suzuki and Takashi Obi
Department of Information and Communications Engineering
- P-10 **Nano-pore lipid bilayer formed by self-spreading method**
Zugui Peng, Kenta Shimba, Yoshitaka Miyamoto and Tohru Yagi
Department of Mechanical Engineering
- P-11 **Elastic Behavior of Textile Materials for Deployable Space Structures**
Britta Hohmann
Department of Mechanical Engineering
- P-12 **Probabilistic Mapping of A Gas distribution in A Cluttered Indoors Environment by Combining SLAM and Chemical Sensing**
D.N. Luong, C.A. Hernandez Reyes and D. Kurabayashi
Department of Systems and Control Engineering
- P-13 **Micro-scale Analysis for Sludge Dewatering Mechanisms**
Xu Xuejie and Fumitake Takahashi
Department of Transdisciplinary Science and Engineering
- P-14 **Teaching AI and Machine Learning to General Education Students**
Luc Gougeon and Jeffrey S. Cross
Department of Transdisciplinary Science and Engineering
- P-15 **Techno-economic Assessment on Waste from Palm Oil Mill to Electricity in Malaysia**
Michino Hashizume and Koji Tokimatsu
Department of Transdisciplinary Science and Engineering
- P-16 **Mechanism of Potassium Removal from Palm Kernel Shell (PKS) by Hydrothermal Treatment**
Tsamara Tsani, Baskoro Lokahita, Muhammad Aziz and Fumitake Takahashi
Department of Transdisciplinary Science and Engineering
- P-17 **Literature review of technologies relating smart grid and power demand-supply analysis**
Daigo Furuichi
Transdisciplinary Science and Engineering

11:10-11:20	Short Break
11:20-12:20	Plenary Lecture “Relationship Among People” @Digital Multi-purpose Hall by Mr. Takeshi Yamada, Team Lab
12:20-13:30	Lunch Break
13:30-14:15	Oral Presentation Session A1 @Room W934, West 9 Building Mechanical Engineering Presentation 11 min / Q&A 3 min for each Chairperson: Romain Zissler

A1-1 Thermal Approach of Viscosity Matching for Dispersion Control by Non-Homogenous Temperature Field

Gea Fardias Mumin and Takushi Saito
Department of Mechanical Engineering

A1-2 Study of Surface Wetting Control of the Solid Body by Chemical States and Surface Geometry of Coated Nano-Particles Layer

Fan Yang-Ming, Takushi Saito, Tatsuya Kwaguchi and Isao Satoh
Department of Mechanical Engineering

A1-3 Design and Analysis of a 5.8-GHz-band Active Reflectarray on Nonflat Space Structures

Keisuke Omoto, Hiraku Sakamoto, Takashi Tomura, Jiro Hirokawa and Masaki Okuma
Department of Mechanical Engineering

13:30-14:15 | **Oral Presentation Session B1** @Room W935, West 9 Building
Civil and Environmental Engineering
Presentation 11 min / Q&A 3 min for each
Chairperson: **Raynell Inojosa**

- B1-1 **Effects of Web Position on Shear Resistance Mechanism of UFC Beams**
Masaki Kato, Kazumasa Okubo, Kenji Yamagishi, Yuki Yamashita, Junichiro Niwa
Civil and Environmental Engineering
- B1-2 **Effect of Flood Pulses on the Trophic State of the Tonle Sap Lake, Cambodia**
J.A.S.I. Thilakarathne and C. Yoshimura
Civil and Environmental Engineering
- B1-3 **Fragility Assessment of Reinforced Concrete Buildings in Indonesia Subjected to Tsunami Loading**
Dicky Hanggara and Anil C. Wijeyeckrema
Civil and Environmental Engineering

14:15-14:30 | **Short Break**

14:30-15:15 | **Oral Presentation Session A2** @Room W934
Transdisciplinary Science and Engineering
Presentation 11 min / Q&A 3 min for each
Chairperson: **Gear Mumin**

- A2-1 **Comparison of SBR and VPL for Path Loss Prediction in Sub-Urban Environment at mmWave Band**
Kosuke Murakami, Jun-ichi Takada, Kentaro Saito
Transdisciplinary Science and Engineering
- A2-2 **The Study of Wi-Fi-based Hand Gesture Trajectory Estimation by Utilizing the Doppler Frequency Shift**
Nopphon Keerativoranan, Kentaro Saito, Jun-ichi Takada
Transdisciplinary Science and Engineering
- A2-3 **Undergraduate Information Literacy Self-Efficacy: A Cross-Sectional Study of Cambodian Province-Based Universities**
Cheyvuth Seng and Jeffrey S. Cross
Transdisciplinary Science and Engineering

14:30-15:15

Oral Presentation Session B2 @Room W935

Chemical Science and Engineering, Materials Science and Engineering

Presentation 11 min / Q&A 3 min for each

Chairperson: **Jahapu Thilakarathne**

B2-1 Development of protein-polymer hybrids using affinity-based peptide

Samyukta Ravishankar, Seigo Suzuki, Sierin Lim and Takeshi Serizawa

Chemical Science and Engineering

B2-2 Highly Transparent Polyimide Copolymers Exhibiting Orange Excited State Intramolecular Proton Transfer Photoluminescence

Naiqiang Liang, Mayuko Nara, Eisuke Fujiwara, Ryohei Ishige, Shinji Ando

Chemical Science and Engineering

B2-3 Synthesis of Alternate Layered Nanostructures of Tungstate Nanosheets and MWW Zeolite Precursor Nanosheets

Kou Takahashi, Masaki Okamoto and Teruoki Tago

Materials Science and Engineering

15:15-15:30

Short Break

15:30-16:15

Oral Presentation Session A3 @Room W934

Mechanical Engineering

Presentation 11 min / Q&A 3 min for each

Chairperson: **Nopphon Keerativoranan**

A3-1 Development of cost-efficient fabrication process of metal Nano/Micro pattern structures for optical applications

Hao Shen, Yuki Nakagawa and Masahiko Yoshino

Mechanical Engineering

A3-2 Orbital and Attitude Analysis of Tethered Solar Sail Spacecraft Formation Flying

Yuta Takahashi, Hiraku Sakamoto and Masaaki Okuma

Mechanical Engineering

A3-3 Development of a passively adjustable stiffness prosthetic foot

Thitithan Thammavintorn, Chanyaphan Virulsri, Pairat Tangpornprasert

Mechanical Engineering

15:30-16:15 | **Oral Presentation Session B3** @Room W935

Civil and Environmental Engineering

Presentation 11 min / Q&A 3 min for each

Chairperson: **Samyukta Ravishankar**

B3-1 Estimation of Shear Amplification in Cantilever Wall using Analytical Method

N.Malla and Anil C. Wijeyewickrema

Civil and Environmental Engineering

B3-2 Dynamic Amplification of Seismic Force Demands in Shear Wall with Outriggers

Taddeo M. Kamau and Anil C. Wijeyewickrema

Civil and Environmental Engineering

B3-3 Analytical evaluation on structural performance change of reinforced concrete structure by long term drying

Ryota Kurihara and Nobuhiro Chijiwa

Civil and Environmental Engineering

8th August (Thu.)

9:30-10:15 | **Oral Presentation Session C1** @Room W934
Mechanical Engineering
Presentation 11 min / Q&A 3 min for each
Chairperson: **Hao Shen**

- C1-1 **Multi-Scale Numerical Modeling of Woven Textile Membranes for Space Applications.**
Riccardo Masiero and Hiraku Sakamoto
Mechanical Engineering
- C1-2 **Prototyping of Textile Membrane Space Structures with Integrated Flexible Electrical Circuits**
Keigo Ohno, Hiraku Sakamoto and Masaaki Okuma
Mechanical Engineering
- C1-3 **Source Location of Acoustic Emission on Anisotropic Plate Utilizing Artificial Intelligence**
Khodijah Kholish Rumayshah, Noriaki Inagaki, Qirong Zhu and Yoshihiro Mizutani
Mechanical Engineering

9:30-10:15 | **Oral Presentation Session D1** @Room W935
Civil and Environmental Engineering
Presentation 11 min / Q&A 3 min for each
Chairperson: **Niraj Malla**

- D1-1 **Effects of Near-Fault Ground Motions on Reinforced Concrete Moment Resisting Frames with Buckling-Restrained Braces**
Amr AbdelKader Ibrahim Elkhoully and Anil C. Wijeyewickrema
Civil and Environmental Engineering
- D1-2 **Influence of Interface on Flexural Behavior of PCa Beams with Mortar Grouted Sleeves**
Kenta Kobayashi, Kazumasa Okubo, Toshio Matsumoto and Junichiro Niwa
Civil and Environmental Engineering
- D1-3 **Seismic Performance of RC Frame Buildings with Post-Tensioned Hybrid Precast Concrete Walls as Partial Infill Walls**
Binod Kumar Shrestha and Anil C. Wijeyewickrema
Civil and Environmental Engineering

10:15-10:30 | **Short Break**

10:30-11:15 | **Oral Presentation Session C2** @Room W934

Transdisciplinary Science and Engineering

Presentation 11 min / Q&A 3 min for each

Chairperson: **Riccardo Masiero**

C2-1 Comparison between the measurement and KEDM of the line-of-sight obstruction losses for the millimeter wave radio

Xin Du, Kentaro Saito and Jun-ichi Takada

Transdisciplinary Science and Engineering

C2-2 Development of SHF Band Channel Sounder by Virtual Planar Array

Kang CheChia, Jun-ichi Takada and Kentaro Saito

Transdisciplinary Science and Engineering

C2-3 Challenges of Developing a Metacognitive Tutor on Open edX

May Kristine Jonson Carlon and Jeffrey Scott Cross

Transdisciplinary Science and Engineering

10:30-11:15 | **Oral Presentation Session D2** @Room W935

Chemical Science and Engineering and Materials Science and Engineering

Presentation 11 min / Q&A 3 min for each

Chairperson: **Elkhouly Amr**

D2-1 Pressure-Induced Variations in Luminescence Properties of Polyimides having Fluorescent End-groups

Koichiro Muto, Eisuke Fujiwara, Liang Naiqiang, Ryohei Ishige and Shinji Ando

Chemical Science and Engineering

D2-2 Improving the air-stability of n-type organic thin-film transistors by additive polyacrylonitrile

Juhong Dong, Yang Wang and Tsuyoshi Michinobu

Materials Science and Engineering

D2-3 Platinum-Incorporated TON-Type Zeolite as Catalyst in Dehydrogenation of Straight-Chain Alkanes

Wei-Hung Chen, Masaki Okamoto and Teruoki Tago

Chemical Science and Engineering

11:15-11:30 | **Short Break**

11:30-12:15 | **Oral Presentation Session C3** @Room W935

Mechanical Engineering

Presentation 11 min / Q&A 3 min for each

Chairperson: **May Kristine Carlon**

C3-1 **Discussion on air resistance of spherical anemometer and the construction of its experimental equipment**

Li Hsin Chen, Meng Yu Cheng

Mechanical Engineering

C3-2 **Thermal Conductivity of Open-Cell Copper Foam Based Thermal Interface Component**

Yuki Ishizaka and Kazuyoshi Fushinobu

Mechanical Engineering

C3-3 **Development and preliminary evaluation of a soft-exosuit for sit-to-stand assistance**

A.L. Kulasekera, R.B. Arumathanthri, K.V.D.S. Chathuranga, R.A.R.C. Gopura, and S.W.M.T.D.

Lalitharathne

Mechanical Engineering

11:30-12:15 | **Oral Presentation Session D3** @Room W935

Electrical and Electronic Engineering, Information and Communications Engineering

Presentation 11 min / Q&A 3 min for each

Chairperson: **Binod Kumar Shrestha**

D3-1 **Olfactory Sensing and Its Signal Processing**

Jantappapa Chanthercrob, M.Aleixandre and Takamichi Nakamoto

Information and Communications Engineering

D3-2 **In-line Remote Medicine Inspection with Flexible Terahertz Imagers**

Meiling Sun, Kou Li, Ryogo Utaki, Yu Tokumoto and Yukio Kawano

Electrical and Electronic Engineering

D3-3 **Multifunctional around-view monitoring robots for ubiquitous social safety-net system**

Kou Li, Ryoichi Yuasa, Ryogo Utaki, Meiling Sun, Yu Tokumoto and Yukio Kawano

Electrical and Electronic Engineering

12:15-13:30 | **Lunch Break**

13:30-14:15

Oral Presentation Session E1 @Room W934

Chemical Science and Engineering and Materials Science and Engineering

Presentation 11 min / Q&A 3 min for each

Chairperson: **Chen Li Hsin**

E1-1 Local Deformation Behavior along Grain Boundaries in Bicrystal TiAl Applicable to Jet Engine Blades

Roman Palvanov, Y. Okada, H. Wakabayashi and M. Takeyama

Materials Science and Engineering

E1-2 Photoconductivity of Polyimide Films Having Enhanced Charge Transfer Interaction

Kahori Takatsuki, Chiaki Takemasa, Shigeo Asai, Ryohei Ishige and Shinji Ando

Chemical Science and Engineering

E1-3 Strategy toward Perpendicularly Aligned Rigid Polyimide: a New Coating Method Based on Liquid Crystal Precursor and Hydrophobic Substrate

Shohei Hara, Keita Yanase, Kazuyuki Tanaka, Ryohei Ishige, Shinji Ando

Chemical Science and Engineering

13:30-14:15

Oral Presentation Session F1 @Room W935

Civil and Environmental Engineering

Presentation 11 min / Q&A 3 min for each

Chairperson: **Kou Li**

F1-1 Response Sensitivity of Hybrid Precast Concrete Walls to the Height of Fiber Segment used to Model Gap Opening

Naresh Subedi and Anil C. Wijeyewickrema

Civil and Environmental Engineering

F1-2 Effects of Shear Span Ratio on Shear Properties of RC Beams Using Fiber Reinforced Porosity Free Concrete

Hiroki Wakayama, Kazumasa Okubo, Katsuya Kono and Junichiro Niwa

Civil and Environmental Engineering

F1-3 Analytical Study of Non-uniform Coupled Shear Walls with Viscoelastic Damper in High-rise Buildings

Susmita Bhowmik and Anil C. Wijeyewickrema

Civil and Environmental Engineering

14:15-14:30

Short Break

14:30-15:15 | **Oral Presentation Session E2** @Room W934

Mechanical Engineering

Presentation 11 min / Q&A 3 min for each

Chairperson: **Roman Palvanov**

E2-1 **Assessing Brain Activity in Virtual Environments - a VR & EEG Study**

Eric Redlinger and Tohru Yagi

Mechanical Engineering

E2-2 **Research of MPM/PD Coupling Algorithm for Crack Propagation Problem**

Zhixin Zeng and Xiong Zhang

Mechanical Engineering

E2-3 **Short Pulsed Laser Machining Characteristics of Transperent Materials**

Shenghui Liu, Yuta Nakamura and Kazuyoshi Fushinobu

Mechanical Engineering

14:30-15:15 | **Oral Presentation Session F2** @Room W935

Electrical and Electronic Engineering

Presentation 11 min / Q&A 3 min for each

Chairperson: **Naresh Subedi**

F2-1 **Carbon Nanotube Film Terahertz Sensor with Multiple PN junctions**

R. Utaki, K. Li, Y. Tokumoto, M. Sun, R. Yuasa, Y. Kawano

Electrical and Electronic Engineering

F2-2 **Fabrication of Sensitive Near-Infrared Photodetector based on a Liquid Crystalline Semiconductor Material for Medical Imaging**

Shahriar Kabir, Yukiko Takayashiki, Jun-ichi Hanna and Hiroaki Iino

Electrical and Electronic Engineering

F2-3 **Easy-printable Transfer Method of Carbon Nanotube Thermal Imager for Passive and Noninvasive Human Motion Monitoring**

Y. Tokumoto, K. Li, R. Ryoichi, M. Sun, R. Utaki and Y. Kawano

Electrical and Electronic Engineering

15:15-15:30 | **Short Break**

15:30-16:15 | **Oral Presentation Session E3** @Room W934

Transdisciplinary Science and Engineering

Presentation 11 min / Q&A 3 min for each

Chairperson: **Eric Redlinger**

E3-1 **Japan-South Korea Electrical Interconnection Impacts on Power Companies' Competitive Businesses**

Romain Zissler and Jeffrey S. Cross

Transdisciplinary Science and Engineering

E3-2 **Kraft lignin depolymerization in supercritical alcohol-water mixtures**

Abraham Castro Garcia and Jeffrey S. Cross

Transdisciplinary Science and Engineering

E3-3 **Improvement of Rain Attenuation Prediction Method for Millimeter-Wave Radio**

Tan Yong Hong, Kentaro Saito and Jun-ichi Takada

Transdisciplinary Science and Engineering

E3-4 **Feasibility of RF communication link propagating under freshwater aquatic environment**

Raynell A. Inojosa, Junichi Takada, and Kentaro Saito

Transdisciplinary Science and Engineering

15:30-16:15 | **Oral Presentation Session F3** @Room W935

Civil and Environmental Engineering

Presentation 11 min / Q&A 3 min for each

Chairperson: **Shahriar Kabir**

F3-1 **The Intelligent Robot Based on the Tap-scan Method for Bridge Damage Detection**

Hu Zhuyou and Xiang Zhihai

Civil and Environmental Engineering

F3-2 **Advanced Experimental Methods for Seismic Performance Evaluation of Structures**

Shiau-Ching Hsu, Pei-Ching Chen, Narutoshi Nakata and Keh-Chyuan Tsai

Civil and Environmental Engineering

F3-3 **Multi-Hazard Risk Assessment of Low-Rise Steel Diagrid Structural Systems**

Nicolas F. Ortiz and Anil C. Wijeyekrema

Civil and Environmental Engineering

F3-4 **Improved Dynamic Increase Factor for Progressive Collapse of Asymmetric Reinforced Concrete Moment Resisting Frame Buildings**

Tabassum Mohsin Chowdhury and Anil C. Wijeyewickrema

Civil and Environmental Engineering

16:30-17:00 | **Short Break (Move to 1st Co-op Cafeteria)**

17:00-18:00 | **Group Work** @1st Co-op Cafeteria

18:00-20:00 | **Banquet and Award Ceremony** @1st Co-op Cafeteria