MISW Program and Contents

Thursday, 7th August

REGISTRATION (8:30-9:00) Registration Desk: Kuramae Hall, Tokyo Tech. Front

OPENING REMARK (9:00-9:15)
Kuramae Hall, Tokyo Tech. Front
Prof. Mishima Yoshinao
President of Tokyo Tech
Prof. Kikuo Kishimoto
Dean, School of Engineering Professor

Photo Session (9:15-9:30)
Kuramae Hall, Tokyo Tech. Front

Break (9:30-9:40)

Shot Gun Presentation (9:40-10:00) Presentation time: 1 min
Poster Session (10:00-11:00)

Kuramae Hall, Tokyo Tech. Front

P - 1 Novel Photo-thermal Controlled Drug-releasing Vectors for Cancer Detection and Treatment
Ming-Hsien* Tsai, and Ming-Jium Shieh
Organic and Polymeric Materials

P - 2 60GHz Transceiver for 300Gb/s Wireless Communication
Kento Kimura*, Seitaro Kawai, Yuki Seo, Shinji Sato, Satoshi Kondo, Tomohiro Ueno, Ryo Minami, Yuki Tsukui, Yasuaki Takeuchi, Masaya Miyahara, Kenichi Okada, Akira Matsuzawa
Physical Electronics

P - 3 Effects of Microwaves on Electron Transfer on Solid Surfaces
Kah Hon Leong*, Fuminao Kishimoto, Dai Mochizuki, Masato M. Maitani, Eiichi Suzuki, Yuji Wada, Shaliza Ibrahim and Pichiah Saravanan
Applied Chemistry
Mesoporous Cobalt Oxalate Nanostructures as High-Performance Anode Materials for Lithium-ion Batteries: Ex-situ Electrochemical Mechanistic Study
Wei An Ang*, Yan Ling Cheah, Chui Ling Wong, Prasanth Raghavan, Huey Hoon Hng, Srinivasan Madhavi
Chemical Engineering

Penetration of mixed organic acids into the anticorrosive polymer film for a bio-gas plant
Kosuke SUGIURA*, Masatoshi KUBOUCHI, Saiko AOKI, Natsuki TANIMOTO
Chemical Engineering

Measuring the Mechanical Property of Biological Materials In vivo
Pao Ting Tu*
Chemical Engineering

New Class of Polymeric Materials for siRNA-therapeutics with cell penetrating peptides
C.H. Huang*, T. Nomoto, H. Takemoto and N. Nishiyama
Environmental Chemistry and Engineering

Recovery of a Multi-Rotor Unmanned Aerial Vehicle on a Heaving Platform
Tan Chun Kiat *, Daisuke Kurabayashi, Wang Jianliang
Mechanical and Control Engineering

Reverse Engineering of Accurate Parts by Applying Combination of Laser Scanning and CMMs
Muslimin*, Jiang Zhu, Hayato Yoshioka, Saito Yoshio
Mechanical and Control Engineering

Calculation of intersection points between triangulated mesh and point cloud data
Saurabh S Bhide*, Jiang Zhu, Yoshioka Hayato, Saito Yoshio
Mechanical and Control Engineering

An LC-VCO with Pulse-Drive Technique
Aravind Tharayil Narayanan*, Kento Kimura, Wei Deng, Kenichi Okada, Akira Matsuzawa
Physical Electronics

Adsorption of Phenol Using Activated Carbon Synthesized from Lake Sludge
P. Orapa, H. Hinode and W. Kurniawan
International Development Engineering
Introduction of Overseas University

PA - 1 The Hong Kong University of Science and Technology
PA - 2 University of Malaya
PA - 3 The University of Auckland
PA - 4 Nanyang Technological University
PA - 5 National Taiwan University
PA - 6 Chulalongkorn University
PA - 7 University of California, Berkeley
PA - 8 Stanford University

Break (11:00-11:10)

Panel Discussion (11:10-12:40)
Kuramae Hall, Tokyo Tech. Front

Prof. Takayuki Aoki (Professor of Tokyo Institute of Technology)
Dr. Haruyoshi Kumura (Fellow, Nissan Motor Corporation)
Dr. Lee Woolgar (Senior ICT Policy Officer, Delegation of the European Union to Japan)

Moderator: Prof. Tom Hope
(International Student Center, Tokyo Institute of Technology)

Lunch (12:40-13:30)

ORAL SESSION 1 (13:30-15:00)  
Presentation time: 11min + Q&A: 3 min

Room A: W934 Lecture Room (3rd Floor), west Bldg 9

Fuminao Kishimoto, Takashi Imai, Dai Mochizuki, Masato M. Maitani, Eiichi Suzuki and Yuji Wada
Applied Chemistry

L. Kong, I. Taniguchi
Chemical Engineering
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:00</td>
<td>A1 - 3</td>
<td>A study on influence of a particle size distribution and aeration rates on membrane fouling in a membrane bioreactor</td>
<td>S. Tanaka, S. Yoshikawa and S. Ookawara</td>
<td>Chemical Engineering</td>
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<tr>
<td></td>
<td>A1 - 5</td>
<td>Dissolution of dicalcium silicate into molten “CaO-FeO-SiO2” slag</td>
<td>Takahide Sadamoto, Yoshinao Kobayashi, Rie Endo, Masahiro Susa</td>
<td>Metallurgy and Ceramics Science</td>
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<tr>
<td></td>
<td>A1 - 6</td>
<td>How pre-existing degeneration influences the vulnerability of articular cartilage to impact induced injury</td>
<td>Workman, Joshua Thomas; Broom, Neil; Thambyah, Ashvin</td>
<td>Metallurgy and Ceramics Science</td>
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<tr>
<td>13:30</td>
<td>B1 - 1</td>
<td>Effects of Non-homogeneity on Liquefaction-induced Deformation of Embankments</td>
<td>M. Maharjan and A. Takahashi</td>
<td>Civil Engineering</td>
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<tr>
<td>13:45</td>
<td>B1 - 2</td>
<td>Shear Strengthening of RC Beams by Vinylon Fiber Mesh with Poval Resin and PCM</td>
<td>Ken ITO, Koji MATSUMOTO, Junichiro NIWA</td>
<td>Civil Engineering</td>
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<tr>
<td>14:00</td>
<td>B1 - 3</td>
<td>Developing Three-dimensional Hierarchical Sea urchin-like TiO2 for Wastewater Treatment</td>
<td>K. Cabral, W. Kurniawan, H. Hinode</td>
<td>International Development Engineering</td>
</tr>
<tr>
<td>14:15</td>
<td>B1 - 4</td>
<td>3D Discrete Radiative Energy Transfer Modeling of Radiowave Propagation Through Foliage</td>
<td>Paul Jason CO, Jun-ichi TAKADA</td>
<td>International Development Engineering</td>
</tr>
<tr>
<td>14:30</td>
<td>B1 - 5</td>
<td>Channel Sounding for Heterogeneous Network</td>
<td>Tianyang Min, KihnHuang Pham, Minseok Kim and Jun-ichi Takada</td>
<td>International Development Engineering</td>
</tr>
<tr>
<td>14:45</td>
<td>B1 - 6</td>
<td>Simulation of the Potential Yield of Wind Power within a Build-up Area</td>
<td></td>
<td>International Development Engineering</td>
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</tbody>
</table>

Room B: W935 Lecture Room (3rd Floor), west Bldg.9
A. N. Huda, T. Sueishi, Y. Nejime, E. Iwatsuka, M. Yucel, A. Inagaki, A.C. Varquez, and M. Kanda
International Development Engineering

Break (15:00-15:10)

ORAL SESSION 2 (15:10-16:40) Presentation time: 11min + Q&A: 3 min
Room A: W934 Lecture Room (3rd Floor), west Bldg.9

A2 - 1 15:10 ~ 15:24 Effects of anatase type titanium oxide (010) facet on the electron transfer process of the dye-sensitized system
K. Kashibuchi, M. Maitani, D. Mochizuki, E. Suzuki, Y. Wada
Applied Chemistry

A2 - 2 15:25 ~ 15:39 Terahertz spectroscopic study of water in thermosetting polymers
Masahiro KUSANO, Masatoshi KUBOUCHI, Mitsuharu SHIWA and Dmitry S. Bulgarevich
Chemical Engineering

A2 - 3 15:40 ~ 15:54 Pressure distributions in a hollow fiber membrane module used for medical cure
R. Osako, S. Yoshikawa, and S. Ookawara
Chemical Engineering

A2 - 4 15:55 ~ 16:09 Conformational Analysis of Aromatic Polyimides at High Temperatures Using Far-IR Spectroscopy
Toshiaki Masuda, Tomohiro Okada, Shiji Ando
Chemistry and Materials Science

A2 - 5 16:10 ~ 16:24 Development of Semiconductor based Artificial Photosynthesis System
Ge Yin, Daiki Atarashi, Etsuo Sakai and Masahiro Miyauchi
Metallurgy and Ceramics Science

A2 - 6 16:25 ~ 16:39 Influence of Mg/Si Ratio on Nanocluster Formation Behavior in Al-Mg-Si Alloys
SeongNyeong Kim, Equo Kobayashi and Tatsuo Sato
Metallurgy and Ceramics Science

Room B: W935 Lecture Room (3rd Floor), west Bldg.9

B2 - 1 15:10 ~ 15:24 Effect of isolator characteristics on the behavior of base-isolated buildings
Satish Bhagat and Anil C. Wijeyewickrema
Seismic Behaviour of Reinforced Concrete Walls with Eccentric openings: Experiment and FEM Analysis
H.H. Zhang, S. Kono
Civil Engineering

Dissolution of Milled Rice Straw Powder in an Ionic Liquid
H. H. Myint, W. Kurniawan, H. Hinode, N. N. Sein and J.S. Cross
International Development Engineering

Performance Analysis of Open Loop MIMO System under Rician Fading Channel
Maitsetseg Nomin, Jun-ichi Takada
International Development Engineering

On propagation channel representation in spherical wave domain
Yang Miao, Jun-ichi Takada
International Development Engineering

Prototype of boost converter for energy harvesting with automatic Maximum Power Point searching
R. Asami, P. Hemthavy, K. Takahashi
International Development Engineering

Break (16:40-16:50)

ORAL SESSION 3 (16:50-17:50)  Presentation time: 11min + Q&A: 3 min

Room A: W934 Lecture Room (3rd Floor), west Bldg.9

A3 - 1 16:50 ~ 17:04 Pulse-shaping of nanosecond pulsed laser using liquid optical device
B. Kim, R. Inoue, H.D. Doan and K. Fushinobu
Mechanical and Control Engineering

A3 - 2 17:05 ~ 17:19 Synthesis and characterization of wear-resistant boron-carbon-nitride films
Shahira Liza Kamis, Hiroki Akasaka and Naoto Ohtake
Mechanical Sciences and Engineering

A3 - 3 17:20 ~ 17:34 Measurement of oxygen transport resistance in cathode catalyst layer of PEFC
S. Umeda, T. P. Nguyen and K. Fushinobu
Mechanical and Control Engineering
Microstructure evolution and Shear Strength of Ultrasonic Soldered Sn-based Lead-free Solder Joint with Added Porous Cu Interlayer

A. T. Tan, Y. Takahisa, A. Tadashi and Y. Farazila
Mechanical and Aerospace Engineering

Room B: W935 Lecture Room (3rd Floor), west Bldg.9

Catalytic upgrading of vapor-phase bio-oil using supported ionic liquids on zeolite catalyst
M. Behrens, J. S. Cross, H. Akasaka, and N. Ohtake
Mechanical Sciences and Engineering

A New Optimal Controller Design for Vibration Suppression in a Class of Image Transfer Belt
Jie Yu, Hiroshi Yamaura
Mechanical and Control Engineering

Development of Walking Assist Machine Using Crutches: 2D Modeling and Gait Analysis
Ekin Basalp, Prof. Hiroshi Yamaura
Mechanical and Control Engineering

The evaluation of healing ability in cracks by visualizing the stress distribution
Kensuke Namiki, Kosuke Takahashi, Kazuaki Inaba, Kikuo Kishimoto

Friday, 8th August

ORAL SESSION 4 (9:00-10:30)  Presentation time: 11min + Q&A: 3 min

Room A: W934 Lecture Room (3rd Floor), west Bldg.9

Post-Tensioned Hybrid Precast Wall-Frame Buildings for Seismic Regions
H.A.D. Samith Buddika and Anil C. Wijeyewickrema
Civil Engineering

Exploring of field hyperspectral bands of rice canopy and leaf suffering from soil salinity in the northeastern Thailand
Samphors Touch, Thirapong Pipatpongsa, Tomomi Takeda, and Jiro Takemura
International Development Engineering
Visualization of the propagation channels both measurement and simulation in macro cellular environments at 11 GHz
R. Tsuji, M. Kim, J. Takada
International Development Engineering

Analytical Approach in 11 GHz MIMO Channel Estimation Based on Antenna Radiation Pattern Reconstruction
Shizhi Zhang, Yang Miao, and Jun-ichi Takada
International Development Engineering

The Effect of Shadowing by Human Body to the Propagation Characteristic of Millimeter Wave
Pham Kinh Hung, M. Kim, J. Takada
International Development Engineering

Utilization from Air-Sea Surface Temperature Difference for Cooling Effect in a Built-Up Area
Meral Yucel, Shinsuke Kato and Takeo Takahashi
International Development Engineering

Shear fatigue mechanism of reinforced concrete beams with cracks due to rebar corrosion
Yuta YAMADA, Nobuhiro CHIJIWA, Mitsuyasu IWANAMI
Civil Engineering

Electromagnetic Scattering Based on Physical Optics Approximation by Using Point Cloud
Hiroki Ohara, Jun-ichi Takada
International Development Engineering

Frequency Domain Interpolation of Wireless Propagation Channel in Urban Environments
Azril Haniz, Jun-ichi Takada
International Development Engineering

Novel Multipath Components Clustering Method for Indoor Double-Directional Channel
Panawit Hanpinitsak, Minseok Kim, Jun-ichi Takada
International Development Engineering

Analysis of Sampling Pattern and Luma-chroma Filter Design for Subpixel-based Image Downsampling
Jin Zeng, Yukihiko Yamashita, Oscar C. Au
International Development Engineering
ORAL SESSION 5 (10:40-12:10)

Presentation time: 11 min + Q&A: 3 min

Room A: W934 Lecture Room (3rd Floor), west Bldg. 9

A5 - 1 10:40 ~ 10:54 Multilayered Cloaks Based on Homogenization for Antiplane Elastic Wave Scattering
Porjan Tuttipongsawat and Anil C. Wijeyewickrema
Civil Engineering

A5 - 2 10:55 ~ 11:09 Heavy Metals Removal from Model Acid Mine Drainage Using Indonesian Natural Zeolite
Fernando, Habaki, H. and Egashira, R.
International Development Engineering

A5 - 3 11:10 ~ 11:24 Distributed Channel Sounder: A Framework
Tossaporn Srisooksai and Jun-ichi Takada
International Development Engineering

A5 - 4 11:25 ~ 11:39 Path Loss Characteristics of Indoor Propagation Channel at 11 GHz using Ray Tracing Simulation
Khagendra Belbase, Jun-ichi Takada
International Development Engineering

A5 - 5 11:40 ~ 11:54 Temperature effect on adhesion hysteresis of elastic contact between silicon rubber and glass lens
Guanda Fu, Dooyoung Baek, Pasomphone Hemthavy, Kunio Takahashi
International Development Engineering

A5 - 6 11:55 ~ 12:09 Passenger Characteristics and their Mode Choice between Air Transport and High Speed Rail in China
Shuyang KANG, Shinya HANAOKA, Makoto TSUKAI
International Development Engineering

Room B: W935 Lecture Room (3rd Floor), west Bldg. 9

B5 - 1 10:40 ~ 10:54 Formation of Thin-Film of Ag Nanoparticles
Deposited on Polymer Substrate Using Microwave Heating
Takuya Yamada, Dai Mochizuki, Maitani M. Maitani, Eiichi Suzuki and Yuji Wada
Applied Chemistry

B5 - 2 10:55 ~ 11:09 Thermophoresis of slurry particles under extremely high temperature gradient
I. Taniguchi, S. Ookawara and S. Yoshikawa
Chemical Engineering

**Effect of solvent species on preparation of nano-needle titania aerogel using supercritical drying**
Motohiro. Kinoshita, Yusu. Shimoyama
Chemical Engineering

**B5 - 3 11:10 ~ 11:24**

Yorina Sarah Franscoise Lantang, Equo Kobayashi, Tatsuo Sato
Metallurgy and Ceramics Science

**B5 - 4 11:25 ~ 11:39**

**Heat Treatment of Spark Plasma Sintered Ti6Al4V for Bone Implant Materials**

**B5 - 5 11:40 ~ 11:54**

**Thermal Diffusivity Estimation of Mould Fluxes under Strong Temperature Gradients**

Deandra Sasadhara, Masahiro Susa, Rie Endo, Yoshinao Kobayashi
Metallurgy and Ceramics Science

**B5 - 6 11:55 ~ 12:09**

**Oxygen solubility in molten Nd-Fe alloy ~to solve resources problem in Japan~**
Takahiro Oshino, Yoshinao Kobayashi, Rie endo, Masahiro Susa
Metallurgy and Ceramics Science

**Lunch (12:10-13:10)**

**ORAL SESSION 6 (13:10-14:40)**  
Presentation time: 11min + Q&A: 3 min

Room A: W934 Lecture Room (3rd Floor), west Bldg.9

**A6 - 1 13:10 ~ 13:24**

**An investigation of secondary atomization in emulsified fuel spray flow**
Y. Shoji, H. Watanabe and K. Okazaki
Mechanical and Control Engineering

**A6 - 2 13:25 ~ 13:39**

**An Automatic Natural Language Sentence Generation Using Weighted Finite-State Transducer**
Worasa Limpanadusadee, Preadpran Punyabukkana, Atiwong Suchato and Shuichi Ueno
Communications and Computer Engineering

**A6 - 3 13:40 ~ 13:54**

**Dependence of adhesive thickness on tack performance**
Yuichiro Yamagata, Kosuke Takahashi, Kazuaki Inaba and Kikuo Kishimoto

Mechanical Sciences and Engineering

**Numerical Simulations on Droplet Coalescence in an L-shaped duct for Inlet Fogging of Gas Turbine Engines**

Ari Hamdani, Hiroshige Kikura

Nuclear Engineering

**Optimization of Accumulative Fuel Loading Scheme in Small Pebble Bed Reactor**

Irwan Liapto Simanullang, Toru Obara

Nuclear Engineering

**Magnesium Oxide/Water Chemical Heat Pump as Thermochemical Energy Storage for Process Waste Heat**

Myagmarjav Odtsetseg, Ryu Junichi, Kato Yunitaka

Nuclear Engineering

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**Room B: W935 Lecture Room (3rd Floor), west Bldg.9**

**B6 - 1 13:10 ~ 13:24**  
**Microwave Sintering of Ag Particle Thin Film Coated on Polymer Substrate**

Shin-ichiro Kawamura, Dai Mochizuki, Satoshi Fujii, Masato M. Maitani, Eiichi Suzuki, Yuji Wada

Applied Chemistry

**B6 - 2 13:25 ~ 13:39**  
**Biomass gasification using microwave plasma**

Fu Xuewei

Chemical Engineering

**B6 - 3 13:40 ~ 13:54**  
**Synthesis and Fluorescence Properties of Acylamino-substituted N-cyclohexylphthalimides**

T. Kambara, K. Kanosue and S. Ando

Chemistry and Materials Science

**B6 - 4 13:55 ~ 14:09**  
**Graphene Coated SPR Biosensor for Low Concentration Detection of Amyloid-beta**

Ryota Murai, J. S. Cross, T. Ikoma, J. Tanaka

Metallurgy and Ceramics Science

**B6 - 5 14:10 ~ 14:24**  
**Development of apparatus for evaluating heat transfer characteristics of mould fluxes**

H. Eguchi, R. Endo, Y. Kobayashi and M. Susa

Metallurgy and Ceramics Science
Thermo-responsive cell culture dishes using hyperbranched polystyrene-g-poly(N-isopropylacrylamide) copolymers
Yu Sudo, Hideaki Sakai, Yuta Nabae, Teruaki Hayakawa, Masa-aki Kakimoto
Organic and Polymeric Materials

Break (14:40-14:50)

ORAL SESSION 7 (14:50-16:20) Presentation time: 11min + Q&A: 3 min

Room A: W934 Lecture Room (3rd Floor), west Bldg.9

A7 - 1 14:50 ~ 15:04 A role of CO2 in hydrocarbon oxidation in fuel-rich O2/CO2 combustion
S. Sugai, H. Watanabe and K. Okazaki
Mechanical and Control Engineering

A7 - 2 15:05 ~ 15:19 A visual Inspection of Stents by 3D Reconstruction with SfM Method
Hsiao-Nan, Yang
Mechanical and Control Engineering

A7 - 3 15:20 ~ 15:34 Wave propagation in compound rectangular tube
Kengo Takeda, Kazuki Inaba, Kousuke Takahashi, Kikuo Kishimoto
Mechanical Sciences and Engineering

A7 - 4 15:35 ~ 15:49 Tee-Junction Characterization on CMOS for Millimeter-Wave Applications
Korkut Kaan Tokgoz, Nurul Fajri, Yuuki Seo, Seitarou Kawai, Kenichi Okada and Akira Matsuzawa
Physical Electronics

A7 - 5 15:50 ~ 16:04 A 60GHz CMOS Power Amplifier Using Transistor Cross-Coupling Neutralization
Nurul Fajri, Kenichi Okada, Akira Matsuzawa
Physical Electronics

A7 - 6 16:05 ~ 16:19 Graph Based Feature Recognition of CAD Parts for Multi-Task Machining
Masato Kato, Yoshioka Hayato, Jiang Zhu, Saito Yoshio
Mechanical and Control Engineering
Room B: W935 Lecture Room (3rd Floor), west Bldg.9

B7 - 1 14:50 ~ 15:04 Synthesis of a novel cathode material for Advanced Rechargeable Lithium-ion batteries  
Gulnur Kalimuldina, Izumi Taniguchi  
Chemical Engineering

B7 - 2 15:05 ~ 15:19 Flow Characteristics of Taylor-Couette Flow with an Inner Cylinder Coated with Anticorrosive Resin  
K. Sawanaga, S. Yoshikawa, S. Okawara  
Chemical Engineering

B7 - 3 15:20 ~ 15:34 Properties of Polymer Alloys of High Molecular Weight Benzoxazine and Bismaleimide  
Shoya Uchida, Yuichi Inoue, Takehiro Kawauchi and Tsutomu Takeichi  
Chemistry and Materials Science

B7 - 4 15:35 ~ 15:49 Equivalent Circuit Analysis of an Iontophoresis Electrode/Rat Skin system  
Metallurgy and Ceramics Science

B7 - 5 15:50 ~ 16:04 Effect of curing condition on Low Heat Portland cement with/without silica fume  
Taloey Napatr, Daiki Atarashi, Masahiro Miyauchi, and Etsuo Sakai  
Metallurgy and Ceramics Science

B7 - 6 16:05 ~ 16:19 Synthesis of Hyperbranched Aromatic Polyamide from an ABB' Type Monomer  
F. Hosokoshi, Y. Nabae, T. Hayakawa, M. Kakimoto  
Organic and Polymeric Materials

Break (16:20-16:30)

Group Work (16:30-17:50)  
Co-op 1st Cafeteria

Break (17:50-18:00)

Banquet & Award (18:00-20:00)  
Co-op 1st Cafeteria