Program

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Date	Time	Room A (Large training room)	Room B (Medium training room)
Apr. 24 (Mon)	**9:00-9:10**	*Opening Remarks* **Prof. Yuji Matsumoto** Tohoku University	
	9:10-9:50	*Keynote Lecture 1* K1 **Dr. Masaru Watanabe** Tohoku University	
	10:00-11:00	*Session A1* *Chemistry 1* A11 **Ryotaro Nakamura** Tohoku University A12 **Hirokazu Sato** Tohoku University A13 **Hsien-Sheng Lin** Feng Chia University	*Session B1* *Biomedical 1* B11 **Yen-Ting Ou** National Chung Hsing University B12 **Ho-Chen Lin** National Tsing Hua University B13 **Hsiao-Neng Lin** National Cheng Kung University
	11:00-11:15	Break	
	11:15-12:15	*Session A2* *Chemistry 2* A21 **Jing Xu** Tohoku University A22 **Naoto Kobayashi** Tohoku University A23 **Viliame Savou** Tohoku University	*Session B2* *Biomedical 2* B21 **Shao-Wen Chi** National Cheng Kung University B22 **Yu-Han Hsieh** National Chung Hsing University B23 **Sung-Tzu Chen** National Chung Hsing University
	12:15-13:30	Lunch Break	
	13:30-14:10	*Keynote Lecture 2* K2 **Dr. Shu-Ping Lin** National Chung Hsing University	
	14:10-15:10	*Session A3* *Chemistry 3* A31 **Jiaqi Lu** Tohoku University A32 **Yuto Sato** Tohoku University A33 **I-Ching Chen** Tohoku University	*Session B3* *Enviromnental 1* B31 **Yi-Sin Jian** National Chung Hsing University B32 **Takehiro Onodera** Tohoku University B33 **Hui-Pin Cheng** National Cheng Kung University
	15:10-15:25	Break	
	15:25-16:45	*Session A4* *Biomedical 3* A41 **Ting-Wei Yu** National Tsing Hua University A42 **Ching-Chuen Chen** National Cheng Kung University A43 **Andrea del Valle** National Tsing Hua University A44 **Wan-Ying Huang** National Cheng Kung University	*Session B4* *Enviromnental 2* B41 **Tomoki Iwama** Tohoku University B42 **Nai-Jia Chen** National Chung Hsing University B43 **Ryousuke Yaegaki** Tohoku University B44 **Akichika Kumatani** Tohoku University

Date	Time	Room A (Large training room)	Room B (Medium training room)
Apr. 25 (Tue)	**9:00-9:10**	*Opening Remarks*	
	9:10-9:50	*Keynote Lecture 3* K3 **Dr. Tomohito Kameda** Tohoku University	
	10:00-11:20	*Session A5* *Biomedical 4* A51 **Noriko Taira** Tohoku University A52 **Wei-Long Chen** National Cheng Kung University A53 **Hsien-Chang Chang** National Cheng Kung University A54 **Zong-Zhan Wu** National Cheng Kung University	*Session B5* *Enviromnental 3* B51 **Ching-Fang Wang** National Chung Hsing University B52 **Takuo Nakamura** Tohoku University B53 **Chia-Wei Liu** National Cheng Kung University B54 **Siti Masturah Fakhruddin** Tohoku University
	11:20-11:35	Break	
	11:35-12:05	*Poster Session* (*Short Oral Presentation*)	
	12:05-13:00	Lunch Break	
	13:00-13:40	*Keynote Lecture 4* K4 **Dr. Chien-Hou Wu** National Tsing Hua University	
	13:50-14:50	*Poster Session* (*Poster Presentation*)	
	15:00-15:30	*Intermediate closing of the symposium*	

Keynote Lecture (Monday, April 24th)

Keynote Lecture 1 9:10 – 9:50

Chairs: Naoto Kobayashi and Shuhei Hattori (Tohoku University)

K1 **Basic Studies on Valorization of Biomass including Protein with High Pressure and Hydrothermal Water Processes for Local Revitalization**
Dr. Masaru Watanabe (Tohoku University)

Keynote Lecture 2 13:30 – 14:10

Chairs: Nai-Jia Chen and Yu-Han Hsieh (NCHU)

K2 **Investigation into the Synergistic Effects of Surface Functional Groups and Nanostructure on Biocompatibility of Titanium and Its Alloy**
Dr. Shu-Ping Lin (National Chung Hsing University), Yen-Ting Ou, Pei-Chieh Wong, Chia-Wei Huang

Oral Session (Monday, April 24th)

Session A1: Chemistry 1 10:00 – 11:00

Chairs: Meng-Hsuan Lu and Andrea del Valle (NTHU)

A11 **Evaluation of productivity and environmental impact from biomass resource utilization system considering interannual weather variability**
Ryotaro Nakamura (Tohoku University), Hajime Ohno, and Yasuhiro Fukushima

A12 **Revealing Carbon Composition of Products Focusing on Petrochemicals**
Hirokazu Sato (Tohoku University), Hajime Ohno, and Yasuhiro Fukushima

A13 **The Method of Promoting The Stability of Iridium Oxide-Based pH sensors**
Hsien-Sheng Lin (Feng Chia University, National Chung Hsing University), Ching-Chou Wu (National Chung Hsing University), and Jen-Bin Shi (Feng Chia University)

Session B1: Biomedical 1 10:00 – 11:00

Chairs: Ryousuke Yaegaki and Takuo Nakamura (Tohoku University)

B11 **Biocompatible Study of Surface Anodized Nanostructure on Selective-Laser-Melting Produced Ti6Al4V**
Yen-Ting Ou (National Chung Hsing University), Shu-Ping Lin

B12 **Silver nanoparticles alter fatty acid metabolism and amyloid beta generation for neuronal apoptosis in an in vitro blood brain barrier model**
Ho-Chen Lin (National Tsing Hua University), Ming-Yi Ho (Thermo Fisher Scientific), Chun-Yu Chuang (National Tsing Hua University)

B13 **Optoelectrokinetically-Enabled Diagnosis of Diabetic with Dual Biomarkers Lipocalin 1 and Tumor Necrosis Factor-α**
Hsiao-Neng Lin (National Chung Hsing University), Han-Sheng Chuang

Session A2: Chemistry 2 11:15 – 12:15

Chairs: Ryotaro Nakamura and Tomoki Iwama (Tohoku University)

A21 **Novel Ball Mill-Assisted Separation of Electric Cable for Simultaneous Recovery of Copper and Polyvinyl Chlorid**
Jing Xu (Tohoku University), Naoki Tazawa, Shogo Kumagai, Tomohito Kameda, Toshiaki Yoshioka

A22 **Mechanism of Crack Formation in Polymer Nanocomposite Thin Films Prepared by Solution Casting Method**
Naoto Kobayashi (Tohoku University), Masaki Kubo, Eita Shoji, Takao Tsukada, Seiichi Takami and Tadafumi Adschiri

A23 **Tars enhancement from pyrolysis of H2SO4 pretreated sugarcane bagasse**
Viliame Savou (Tohoku University), Shogo Kumagai, Tomohito Kameda and Toshiaki Yoshioka

Session B2: Biomedical 2 11:15 – 12:15

Chairs: Megawati Intan Sari and Wen-Hsiang Wu (NCHU)

B21 **Monitoring of Microorganisms and Their Responses to Antibiotics on a Diffusometric Platform**
Shao-Wen Chi (National Cheng Kung University), Chih-Yao Chung, Jhih-Cheng Wang (Chimei Medical Center), Han-Sheng Chuang (National Cheng Kung University)

B22 **Monolithically integrated copper phosphate electrodes fabricated by an electrooxidative technique for the detection of histamine**
Y.H. Hsieh (National Chung Hsing University), M.Y. Lee and C.C. Wu

B23 **A chip-based microfluidic device for green extraction of healthy mitochondria**
Sung-Tzu Chen (National Chung Hsing University), Ching-Wen Li, Yu-Han Hsiao, Jui-Chih Chang (Changhua Christian Hospital), Chin-San Liu (Changhua Christian Hospital), and Gou-Jen Wang (National Chung Hsing University)

Session A3: Chemistry 3 14:10 - 15:10

Chairs: Ching-Chuen Chen and Zong-Zhan Wu (NCKU)

A31 **Ex-ante assessment of a new process – case study on chlorine recovery from PVC wastes in Japan**
Jiaqi Lu (Tohoku University), Shogo Kumagai, Yasuhiro Fukushima, Hajime Ohno, Tomohito Kameda, and Toshiaki Yoshioka

A32 **Local Electrochemical Analysis for the Dispersion State of Polyacrylate-based Binder for Silicon-Graphite Negative Electrodes in Lithium-ion Batteries**
Yuto Sato (Tohoku University), A. Kumatani, T. Watanabe, Y. Takahashi (Kanazawa University), K. Kubota (Tokyo University of Science), H. Shiku (Tohoku University),
S. Komaba (Tokyo University of Science) and, T. Matsue (Tohoku University)

A33 **Designing a community-based biodiesel production system with a modularized Ion-Exchange Resin Catalyst process**
I-Ching Chen (Tohoku University), Naomi Shibasaki-Kitakawa, Hajime Ohno, and Yasuhiro Fukushima

Session B3: Environmental 1 14:10 - 15:10

Chairs: Satoshi Tsuchiya and Narumi Shiraishi (Tohoku University)

B31 **Direct detection of orchid viruses using nanostructured electrochemical biosensor**
Yi-Sin Jian (National Chung Hsing University), Fuh-Jyh Jan, and Gou-Jen Wang

B32 **Simultaneous imaging of alkaline phosphatase and respiratory activities of cell aggregates using an LSI-based electrochemical device**
Takehiro Onodera (Tohoku University), Kosuke Ino, Yusuke Kanno, Atsushi Suda (Japan Aviation Electronics Industry), Ryota Kunikata, and Hitoshi Shiku (Tohoku University)

B33 **Development of a rapid and sensitive biosensor for biological toxins**
Hui-Pin Cheng (National Cheng-Kung University), and Han-Sheng Chuang

Session A4: Biomedical 3 15:25 - 16:45

Chairs: Yuto Sato and Tsubasa Miura (Tohoku University)

A41 **Acidity-triggered surface charge neutralization and aggregation of functionalized nanoparticles for promoted tumor intake**
Ting-Wei Yu (National Tsing Hua University), I-Lin Lu (National Tsing Hua University, Hsinchu Mackay Memorial Hospital), Wen-Chia Huang (National Tsing Hua University), Shang-Hsiu Hu, Chia-Chian Hung, Wen-Hsuan Chiang, and Hsin-Cheng Chiu

A42 **Detection of diabetic retinopathy with a contact lens based on brownian motion**
Ching-Chuen Chen (National Cheng Kung University), and Han-Sheng Chuang

A43 **Near-infrared Light-responsive Aptamer-conjugated Gold Nanostars for Targeted Drug Delivery**
Andrea C. del Valle (National Tsing Hua University), and Yu-Fen Huang

A44 **Studying Effect of Exercise with Antioxidants on Anti-Senescence Through the Nematode Caenorhabditis elegans**
Wan-Ying Huang (National Cheng Kung University), Chang-Shi Chen, and Han-Sheng Chuang

Session B4: Environmental 2 15:25 - 16:45

Chairs: Hsiao-Neng Lin and Chia-Wei Liu (NCKU)

B41 **Simultaneous Topography and Electrochemical Imaging of Enzyme Membranes with SECM-SICM**
Takuo Nakamura (Tohoku University), Shunsuke Imai, Akichika Kumatani, Kosuke Ino, Tomokazu Matue Hitoshi Shiku

B42 **Invertigation into the Mechanism and Stability of Deposition of Exfoliated Graphene Films on Silicon Substrate**
Nai-Jia Chen (National Chung Hsing University), and Shu-Ping Lin

B43 **Functionalization and electrochemical characterization of closed bipolar electrode system**
Ryosuke Yaegaki (Tohoku University), Kosuke Ino, Tomokazu Matsue and Hitoshi Shiku

B44 **Nanoscale Electrochemical Imaging for Redox Activities at Edges of Graphene/Graphite**
Akichika Kumatani (Tohoku University), Chiho Miura, Hitoshi Shiku, Yasufumi Takahashi, and Tomokazu Matsue

Keynote Lecture (Tuesday, April 25th)

Keynote Lecture 3 9:10 – 9:50

Chairs: Jiaqi Lu and Viliame Savou (Tohoku University)

K3 **Application of layered double hydroxide for environmental cleanup**
Dr. Tomohito Kameda (Tohoku University)

Keynote Lecture 4 13:00 – 13:40

Chairs: Yu-Hsuan Chu and Ting-Wei Yu (NTHU)

K4 **Photocatalytic Multilayer Films Based on TiO_2 Nanoparticles and Poly(L-Dopa) Using Layer-by-Layer Self-Assembly**
Dr. Chien-Hou Wu (National Tsing Hua University), Weichang Yuan, Chung-Yi Wu

Oral Session (Tuesday, April 25th)

Session A5: Biomedical 4 10:00 – 11:20

Chairs: Hirokazu Sato and Takehiro Onodera (Tohoku University)

A51 **Three dimensional patterning of calcium alginate hydrogels by electrodeposition**
Noriko Taira (Tohoku University), Kosuke Ino, Hitoshi Shiku

A52 **Development of an integrated microchip for cancer prescreening using Caenorhabditis elegans**
Wei-Long Chen (National Cheng Kung University), Chang-Shi Chen, Han-Sheng Chuang

A53 **Development of Rapid Biosensors Based on AC Electrokinetics**
Hsien-Chang Chang (National Cheng Kung University)

A54 **An Electrokinetic-based Method for Rapid Bacterial Counting**
Zong-Zhan Wu (National Cheng Kung University), Tien-Chun Tsai, Hsien-Chang Chang

Session B5: Environmental 3 10:00 – 11:20

Chairs: Jen-Hung Fang and Ho-Chen Lin (NTHU)

B51 **Impedimetric Performance of Graphene and Graphene Nanoribbon in the Detection of Dopamine**
Ching-Fang Wang (National Chung Hsing University), Shu-Ping Lin

B52 **Simultaneous detection of dopamine and glutamate using electrodes array modified with osmium redox polymer containing enzyme.**
Tomoki Iwama (Tohoku University), Hiroya Abe, Kumi Y. Inoue, Hiroshi Yabu, Tomokazu Matsue

B53 ***In situ* Study of Bioreaction on gold surface Using Surface-Enhanced Absorption Spectroscopy**
Chia-Wei Liu (National Cheng Kung University), Tien-Chum Tsai, Li-Chia Chen, Ruey-Jen Yang, Hsien-Chang Chang

B54 **Investigation of a Janus Particles-utilizing Aldosterone Immunosensor**
Siti Masturah Fakhruddin (Tohoku University), Satsuki M Sato, Kumi Y Inoue, Tomokazu Matsue

Poster session (Tuesday, April 25th)

Short Oral Presentation 11:35-12:05

Chairs: Jing Xu and Siti Masturah (Tohoku University)

Poster Presentation 13:50-14:50

P1 **Non-enzymatic Histamine Sensors Based on Disposable Copper Phosphate Electrodes for Determination of Sea Food Freshness**
Megawati Intan Sari (National Chung Hsing University), Ming-Yuan Lee, Ching-Chou Wu

P2 **Using Graphite Powders for Enhancing Power Generation Efficiency of Plant Microbial Fuel Cell**
Wen-Hsiang Wu (National Chung Hsing University), Yao-Chuan Tsai

P3 **Improving Thermo/Chemo Combinational Therapeutic Efficacies in Tumor with Magnetic Guidance and Surface Charge Conversion of Nanocarriers**
Ting-Yu Lu (National Tsing Hua University), Te-I Liu, Hsin-Chen Chiu

P4 **Effects of macrophages on brain tumor cell migration and response to therapy**
Yu-An Ren (National Tsing Hua University), Chi-Shiun Chiang, Chi-Shuo Chen

P5 **Modified-Graphene Oxide Nanoparticles as a Sensitively platform for Circulating Tumor Cell Biosensing**
Yi-Feng Hsieh (National Tsing Hua University), Shan-Hsiu Hu

P6 **Preparation of luminescent materials by absorbing a waste-soluble terbium-(III)-thiacalix[4]arene complex onto an ion exchanger**
Narumi Shiraishi (Tohoku University), Ryunosuke Karashimada, Nobuhiko Iki

P7 **Synthesis and characterization of a platinum(II) diradical complex with an expanded pi-conjugated system to absorb red-shifted near infrared light**
Satoshi Tsuchiya (Tohoku University), Masataka Sato, Atsuko Masuya-Suzuki, Nobuhiko Iki

P8 **Platinum-Gold Nanostars For Near Infrared-Responsive Drug Release And Anticancer Therapy**
Andrea C. del Valle (National Tsing Hua University), Yu-Fen Huang

P9 **Effect of aerosoled NaCl solutions on Pseudomonas aeruginosa motility and mucin microrheology**
Yun-Tzu Lin (National Tsing Hua University), Zong-Tian Lee, Hui-ling Lin, Chi-Shuo Chen

P10 **Graphene Quantum Dots Encapsulated pH-Sensitive Dendrimers for Nanotherapeutics of Dual Stimuli-Penetrative Tumor Therapy**
Yu-Lin Su (National Tsing Hua University), Ling-Yi Huang, Shang-Hsiu Hu

P11 **Determination of linear aliphatic aldehydes in rice wines by high-performance liquid chromatography using 2,4-dinitrophenylhydrazine derivatization**
Yu-Hsuan Chu (National Tsing Hua University), Chien-Hou Wu

P12 **Development of novel evaluation methods for industrial catalysts based on life cycle thinking**
Yuki Kawaoto (Tohoku University), Hajime Ohno, and Yasuhiro Fukushima

P13 **Matrix stiffness alters the physiological properties of hepatoma cells through actin interactions**
Cheng-Yi Lin (National Tsing Hua University)

P14 **Improving anticancer drug accumulation and therapeutic efficacy in bone metastasis lesions with alendronate-modified nanoparticles**
Cheng-Lin Chuang (National Tsing Hua University), Hsin-Cheng Chiu

P15 **Rapid Authentication of Whisky Using High Throughput Dipole-Assisted Solid-Phase Extraction Microchip Combined with Inductively Coupled Plasma-Mass Spectrometry**
Yu-Chen Chuang (National Tsing Hua University), Tsung-Ting Shih (Industrial Technology Research Institute), and Yuh-Chang Sun (National Tsing Hua University)

P16 **Reagent-free electrochemical sensor for detection of protein in urine**
Tsubasa Miura (Tohoku University), Inoue Y.K, Kumatani A, and Matsue T

P17 **The Effective Delivery of Drug/Energy to Tumors by Functional Nano-Materials**
Shang-Hsiu Hu (National Tsing Hua University)

P18 **Counter-regulation of Nrp1 expression between brain tumor cells and tumor-associated macrophages**
Meng-Hsuan Lu (National Tsing Hua University), Chi-Shiun Chiang

P19 **Magneto-Actuated Spontaneous Multiple Stages of Targeted and Penetrated Drug Delivery Systems for Deep Tumor Synergistic Treatments**
Ling-Yi Huang (National Tsing Hua University), Shang-Hsiu Hu

P20 **Effectively Customized Multiple Functional Microneedles by Additive Fabrication**
Jen-Hung Fang (National Tsing Hua University), Hao-Hsiang Hsu, and Shang-Hsiu Hu

P21 **Erythrocyte-like Magnetic Mesoporous Nanogenerators Enhanced Polydox Delivery for Cancer Therapeutics**
Chih-Yi Chang (National Tsing Hua University), Shang-Hsiu Hu

P22 **Highly Biocompatible and UV Curable Elastomers for Tissue Engineering Based 3D Printing**
Wei-Chen Chen (National Tsing Hua University), Shang-Hsiu Hu

P23 **Drastic mutagenesis for promoting the expression of antibody fragments in *E. coli***
Shuhei Hattori (Tohoku University), Teppei Niide, Hikaru Nakazawa, Masako Kumagai and Mitsuo Umetsu

P24 **Structural Selective Adsorption of Graphene Nanosheets on the Gel Beads**
Shunichi Ishiguro (Tohoku University), Takaaki Tomai, Naoki Tamura, Yuta Nakayasu, Itaru Honma