

**2023 The 12th International Conference on Nanostructures,
Nanomaterials and Nanoengineering (ICNNN 2023)
2023 8th International Conference on Materials Technology
and Applications (ICMTA 2023)**

**Fukuoka, Japan
October 27-29, 2023
Hybrid Conference**



TKP Conference City Hakata
TKP カンファレンスシティ博多
<https://www.kashikaigishitsu.net/facilitys/cc-hakata/>

Address:

〒812-0011, 日本福岡県福岡市博多区博多駅前 3-19-5 博多石川ビル 1階
〒812-0011 Fukuoka, Hakata Ward, Hakata Ekimae, 3 Chome-19-5 Hakata Ishikawa Building 1F

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Welcome Address

With great pleasure, we are welcoming you to 2023 The 12th International Conference on Nanostructures, Nanomaterials and Nanoengineering (ICNNN 2023), and 2023 8th International Conference on Materials Technology and Applications (ICMTA 2023), be held in Fukuoka, Japan, during 27-29 October, 2023.

The unique idea behind the conference is to provide an opportunity for leading academicians, scientists, researchers and industry professionals from around the world to network and have scientific discussion on the latest advancements in the interlinked domains of science, business and engineering and it's research benefits for each other's domain progress. It will address multiple topics and issues of interest in the areas of engineering, science, business and management by practical exposure in the form of specialized sessions, poster presentations, plenary sessions and renowned speeches from the leading practitioners reinforcing the upcoming challenges to be faced and their potential solutions.

After several rounds of review procedure, the program committee accepted those abstracts to be presented on conference, and papers to be published in conference proceedings. We wish to express our sincere appreciation to all the individuals who have contributed to the conference in various ways. Special thanks to Conference Chair-Prof. Kazuo Umemura, Tokyo University of Science, Japan, for whose full local support, make many delegates be able to reach Fukuoka to join the conference! Thanks also extended to our committee members for their thorough review of all the submissions, which is vital to the success of the conference, and to the members in the organizing committee and the volunteers who had dedicated their time and efforts in planning, promoting, organizing and helping the conference.

The conference is high lightened by 2 Keynote Speakers and 1 Invite speaker, they are:
Umemura Kazuo, Tokyo University of Science;
Jia-Lin Tsai, National Yang Ming Chiao Tung University;
Bingpu Zhou, University of Macau.

Sunny, friendly Fukuoka is Kyushu's largest city and Japan's eighth-largest population centre. It's made up of two former towns: the castle town of Fukuoka on the west bank of the Naka-gawa and the merchant town of Hakata on the east bank. Fukuoka is a crossroads between cultures, cultivating diversity and cosmopolitan citizens who extend their warm welcome to those near and far. It's where tradition coexists with the contemporary and urban spaces grow in harmony with nature.

It will be so amazing and exciting to welcome you in Fukuoka. Sincerely we wish you will enjoy this city and have a nice experience on this conference!

ICNNN 2023 & ICMAE 2023 Organizing Committee
27-29 October, 2023

CONFERENCE COMMITTEES

Conference Chairs

Hao Gong, *National University of Singapore, Singapore*

Kazuo Umemura, *Tokyo University of Science, Japan*

Program Chairs

Yoshihiko Uematsu, *Gifu University, Japan*

Indriana Kartini, *Universitas Gadjah Mada, Indonesia*

Technical Committees

Andri Kusbiantoro, *Universiti Tun Hussein Onn Malaysia, Malaysia*

Wan Izhan Nawawi, *Universiti Teknologi MARA Perlis Branch, Malaysia*

Qingyuan Wang, *Sichuan University, China*

Seyfettin Dalgıç, *Trakya University, Turkey*

Leo Cristobal Ambolode II, *Mindanao State University - Iligan Institute of Technology, Philippines*

Khairul Anuar Mat Amin, *Universiti Malaysia Terengganu, Malaysia*

Madya Dr Aeslina Binti Abdul Kadir, *Universiti Tun Hussein Onn Malaysia, Malaysia*

Shun Yao, *Sichuan University, China*

Wei-Ting Hsu, *Chaoyang University of Technology, Taiwan*

Mohd Hisbany bin Mohd Hashim, *Universiti Teknologi MARA (UiTM), Malaysia*

Zulkifli Ahmad, *University Malaysia Pahang, Malaysia*

Nurul Aizan Mohd Zaini, *Rubber Technology, Malaysia*

Sirirat Wacharawichanant, *Silpakorn University, Thailand*

Zuliahani Ahmad, *Universiti Teknologi Mara (UiTM) Perlis, Malaysia*

H. Mas Ayu, *Universiti Malaysia Pahang, Malaysia*

Huynh, Trong-Phuoc, *Cantho University, Vietnam*

Kwun Nam Hui, *University of Macau, Macau*

Sholihun, *Universitas Gadjah Mada, Indonesia*

Jung-San Chen, *National Cheng Kung University, Taiwan*

Wan Mazlina Md Saad, *Universiti Teknologi MARA Selangor Branch, Malaysia*

Siti Nooraya Mohd Tawil, *Universiti Pertahanan Nasional Malaysia (UPNM), Malaysia*

Papot Jaroenapibal, *Khon Kaen University, Thailand*

Supachok Tanpichai, *King Mongkut's University of Technology Thonburi, Thailand*

Youtian Zhang, *Rice University, USA*

Siti Norazian Ismail, *Universiti Teknologi MARA, Malaysia*

Gutian Zhao, *Southeast University, China*

Gobinda Gopal Khan, *Tripura University (A Central University), India*

MD Abdul Maleque, *MIMechE (UK), UK*

Bingpu Zhou, *University of Macau, China*

Murugathas Thanihachelvan, *University of Jaffna, Sri Lanka*

Yun Sun, *Chinese Academy of Sciences, China*

Manolo G. Mena, *University of the Philippines, Philippines*

Er-Yuan Chuang, *Taipei Medical University, Taiwan*

Hendry Y. Nanlohy, *Jayapura University of Science and Technology, Indonesia*

Joonmyung Choi, *Hanyang University, Republic of Korea*

Jui-Fen Chang, *National Central University, Taiwan*

Kowit Piyamongkala, *KMUTNB, Thailand*

Menandro Marquez, *Mapua University, Philippines*

Shunjiro Fujii, *University of Hyogo, Japan*

Maxine Swee-Li Yee, *University of Nottingham Malaysia, Malaysia*

Chia-Jung Cho, *I-Shou University, Taiwan*

Supachok Tanpichai, *King Mongkut's University of Technology Thonburi, Thailand*

Zeeshan Khatri, *Mehran University of Engineering and Technology, Pakistan*

Chih-Lang Lin, *National Taiwan University, Taiwan*

Li Laifeng, *Chinese Academy of Sciences, China*

Indriana Kartini, *Universitas Gadjah Mada, Indonesia*

Go Yamamoto, *Tohoku University, Japan*

CONFERENCE VENUE

FOR ONSITE PRESENTERS

❖ Conference Venue

- ◆ TKP Conference City Hakata
(TKP カンファレンスシティ博多)
- ◆ Address: 〒812-0011, 日本福岡県福岡市博多区博多駅前 3-19-5 博多石川ビル 1階
〒812-0011 Fukuoka, Hakata Ward, Hakata Ekimae, 3 Chome-19-5 Hakata Ishikawa Building 1F

❖ Sign-in

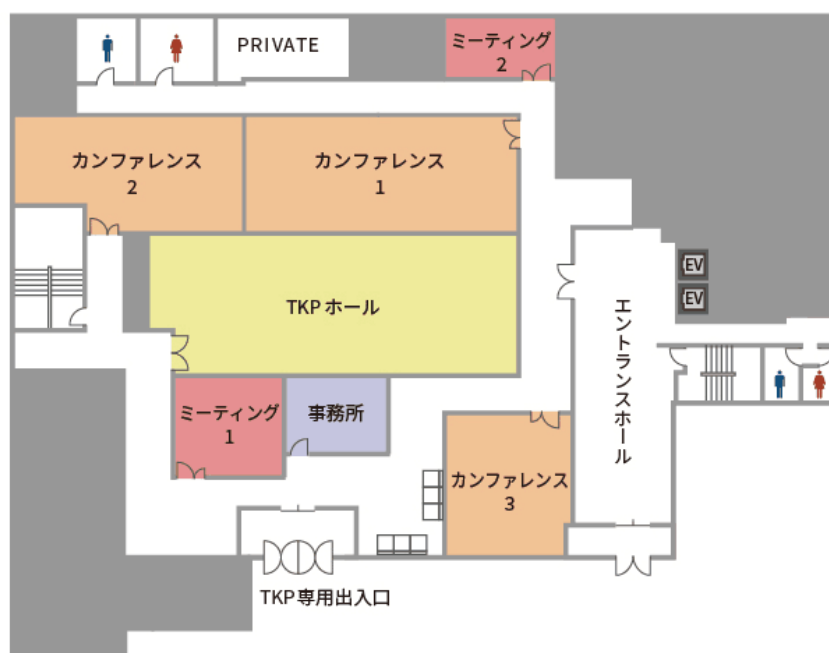
- ◆ Spot: Meeting 1 (ミーティング 1)
- ◆ Time: 10:00-16:00, October 27, 2023

❖ Conference Rooms

Level	Conference Rooms	Oct. 27	Oct. 28	Oct. 29
1F	Meeting 1 (ミーティング 1)	❖	----	----
	Conference 1 (カンファレンス 1)	----	❖	----
	Conference 3 (カンファレンス 3)	----	❖	----

❖onsite meeting room available; ----onsite meeting room unavailable

Floor Map:



- ❖ **Meeting 1 (ミーティング 1):** Sign-in Place (Oct. 27)
- ❖ **Conference 1 (カンファレンス 1):** Opening, Keynote& Invite Speeches, Sessions 1, 3, Poster Session (Oct. 28)
- ❖ **Conference 3 (カンファレンス 3):** Sessions 2, 4. (Oct. 28)

- ❖ **TKP Hall (TKP ホール):** Dinner Venue (Oct. 28);
- ❖ Onsite meeting rooms not available on Oct. 29.

Transportation

- ❖ **From Fukuoka Airport**
 - ◆ By Taxi: 3.7 KM, takes 10-15 Mins.
 - ◆ By Bus: take **Local** from **Fukuoka Airport Kokusaisen Terminal** Station to **Hakata Bus Terminal** Station (non-stop), takes around 15 Mins, then 650m by walk. (bus every 20 Mins)

Time Zone

- ❖ **Tokyo Time: UTC +9**

Weather

- ❖ **October**

Average Low

15 °C

Average High

23 °C

Emergency Call

Police:110

Fire/ Embulance:119

(Information above from internet)

GUIDELINES

FOR ONSITE PRESENTERS

❖ Oral Presentation

- ◆ Each oral presentation is with 15 Mins time slot, including 10 Mins presentation and 5 Mins for questions from the audience.
- ◆ Your punctual arrival and active involvement in each session will be highly appreciated.
- ◆ Get your Presentation PPT slides, or PDF files prepared in advance and backed up.
- ◆ Laptop, projector & screen, laser sticks will be provided in the meeting room for presentation use.

❖ Poster Presentation

- ◆ Poster size: 0.6m width X 0.8m height
- ◆ Poster to be printed and brought to conference site by presenter self.
- ◆ At least 1 author to stand by the poster during the Poster session, which is not only to present your work, but also to answer questions from the audience.

❖ More Tips:

- ◆ Please take all your belongings when leaving meeting room.
- ◆ Conference Organizers do not provide accommodation, please reserve your hotel room in advance.
- ◆ Receipt will be emailed to you after the conference.
- ◆ Portugal citizens must circulate with an identification document (ID card or passport), so, it's wise that delegates take ID document all the time.

FOR ONLINE ORAL PRESENTERS

❖ Online Platform--Zoom

- ◆ Install Zoom tool on your device (<https://zoom.us/download>), join the meeting by click the Zoom link or insert the meeting ID, with audio and video on.
- ◆ For presenters: Rename yourself with "Session No.+Paper ID+Name", such as "S1+C001+Name".
- ◆ For Keynote/invite Speaker or Session Chair, please rename as "KN/SC+Name".
- ◆ Laptop with stable internet connection (wired connection preferred).
- ◆ Headsets or earphones are recommended to be used during presentation to avoid howling.
- ◆ Keep muted when the other presenters speaking until your turn to present, then you could unmute yourself.
- ◆ Only oral choice for online presentations.
- ◆ Certificate and receipt will be emailed to you after the conference.

❖ Time Zone

- ◆ Whole conference scheduled in **Tokyo Time: UTC+9**
- ◆ Please make sure your device time is set to correct time zone.

❖ Online Presentation

- ◆ Each online oral presentation is with 15 Mins time slot, including 10 Mins presentation and 5 Mins for questions from the audience.

❖ **Recording**

- ◆ Plenary session and online sessions will be recorded, your proper behavior and appearance will be appreciated. Only staff will record the video, presenters will not be allowed to record.

❖ **Zoom Meeting ID**

Zoom Online Room	Meeting ID	Zoom Link
Room A	856 0239 9965	https://us02web.zoom.us/j/85602399965

❖ **Online Zoom Test**

Time Oct 27	Room A Zoom ID: 856 0239 9965
11:00-12:00	Test

AGENDA OVERVIEW

Day 1 | October 27, 2023

Tokyo Time	Activity	Venue
11:00-12:00	Online Test	Zoom ID: 826 4522 8278
10:00-16:00	Sign in & Conference Materials Collection	Meeting 1 (ミーティング 1)

Day 2 | October 28, 2023

Tokyo Time	Activity		Venue
09:00-09:05	Opening Ceremony	Opening Remarks: Kazuo Umemura Tokyo University of Science	Conference 1 (カンファレンス 1) Zoom ID: 856 0239 9965
09:05-09:50	Plenary Session	Host: Jia-Lin Tsai , National Yang Ming Chiao Tung University Speech 1: Micron Size Biodevices Using Natural Nanoporous Silica Kazuo Umemura Tokyo University of Science	
09:50-10:35		Host: Kazuo Umemura , Tokyo University of Science Speech 2: Mechanical Properties and Applications of Nanocomposites with Aligned Graphene Jia-Lin Tsai National Yang Ming Chiao Tung University	
10:35-11:00	Group Photo & Morning Break		
11:00-11:30	Plenary Session	Host: Kazuo Umemura , Tokyo University of Science Speech 3: Coupling of Magnetism with Flexible and Wearable Sensors Bingpu Zhou University of Macau	Conference 1 (カンファレンス 1) Zoom ID: 856 0239 9965
11:30-13:00	Lunch		Conference 1 (カンファレンス 1)
13:00-15:00	Oral Session 1: Preparation and Applications of Nanomaterials		Conference 1 (カンファレンス 1)
	Oral Session 2: Coatings and Composite Materials		Conference 3 (カンファレンス 3)
15:00-16:00	Coffee Break & Poster Session		Conference 1 (カンファレンス 1)
16:00-18:00	Oral Session 3: Electrochemistry, Applied Catalysis, and Chemical Engineering		Conference 1 (カンファレンス 1)
	Oral Session 4: Polymer Chemistry and Polymer Physics		Conference 3 (カンファレンス 3)
18:20-20:00	Dinner		TKP Hall (TKP ホール)

Day 3 | Oct. 29, 2023

Tokyo Time	Activity	Online Only
10:00-12:30	Oral Session 5: Preparation, Properties, and Applications of Advanced Materials	Zoom ID: 856 0239 9965

KEYNOTE SPEAKER

Tokyo Time	09:05-09:50, October 28, 2023	Onsite Room	Conference 1 (カンファレンス 1)
Zoom ID	856 0239 9965	Zoom Link	https://us02web.zoom.us/j/85602399965

**Umemura Kazuo**

Tokyo University of Science

Speech Title: Micron Size Biodevices Using Natural Nanoporous Silica

Abstract: I will introduce two types of biodevices using frustules. Frustules are nanoporous biosilica which are produced by diatom cells. Diatoms are major photosynthetic planktons that are found in rivers, seas, lakes, and even in hot springs. Sizes of frustules are varied from several microns to several hundred microns, however, sizes and shapes of the frustules obtained in the same culture of isolated diatom cells are uniform because of the regulation with their genomes. Nano and micro pores are found on frustule surfaces; therefore, specific gravity of frustules is lower than other micron size materials such as glass beads. In our experimental data, frustules were not settled permanently without stirring at 37 °C. It could be directly confirmed using a ‘tumbled’ optical microscope. Frustules were gradually settled at room temperature; however, the settlements of frustules were much slower than other related SiO₂ micron size materials such as diatomite, mesoporous silica, and glass beads. We attached papain enzymes or DNA-wrapped single-walled carbon nanotubes (SWNTs) on frustule surfaces. In the case of the papain enzyme devices, better enzyme activities were obtained comparing with the use of other SiO₂ materials. In the case of SWNT devices, near-infrared photoluminescence (PL) of SWNTs was well appeared even on frustule surfaces. The SWNT device was effective to distinguish biomolecules by the PL change. For example, when papain molecules were injected to the SWNT frustule suspension, PL intensity from SWNTs were significantly increased. Furthermore, the PL change was specific according to chirality of SWNTs. The data revealed a potential of biosensing methods using the SWNT chirality. For the reactions, it was not necessary to external stirring at 37 °C. Nevertheless, the fabricated frustule biodevices could be easily recovered by simple centrifugation after the use. Both papain devices and SWNT devices could be re-used at least five times.

Bio.: *Dr. Kazuo Umemura is a full professor of Tokyo University of Science. His specialty is biophysics, especially, nanobioscience and nanobiotechnology. One of his recent interests is nanoscopic research of hybrids of biomolecules and carbon nanotubes (CNTs). Unique structures and physical/chemical properties of the hybrids are promising in biological applications such as nanobiosensors and drug delivery.*

Dr. Umemura received his B.S. degree in Physics from Nagoya University. His M.S. and Ph.D. degrees were given from Tokyo Institute of Technology. After working at several institutes/universities as a researcher in Japan and in China, he became a professor of Tokyo University of Science. Kagurazaka campus of Tokyo University of Science is located at the center of Tokyo, so five subway/railway lines reach in front of the campus.

KEYNOTE SPEAKER

Tokyo Time	09:50-10:35, October 28, 2023	Onsite Room	Conference 1 (カンファレンス 1)
Zoom ID	856 0239 9965	Zoom Link	https://us02web.zoom.us/j/85602399965

**Jia-Lin Tsai**

National Yang Ming Chiao Tung University

Speech Title: Mechanical Properties and Applications of Nanocomposites with Aligned Graphene

Abstract: This study fabricated nanocomposites with aligned graphene platelets and examined their mechanical properties. Graphene platelets were incorporated into epoxy matrix through mechanical mixing, followed by sonication for homogeneous dispersion. To align the graphene platelets, before curing, an electric field was applied to the epoxy-graphene compound. Real-time microscopic observation revealed that under an electric field, the graphene platelets rotated, translated, and eventually formed a chain-like microstructure along the electric field. Tensile tests were conducted on the nanocomposites with aligned graphene, and failure mechanisms were identified using scanning electrical microscopy of the fracture surfaces. For comparison, nanocomposites with randomly oriented graphene were prepared and then subjected to tensile loading. Moreover, the moduli of the graphene nanocomposites were characterized using Mori-Tanaka micromechanical model. The experimental results indicated that the nanocomposites with aligned graphene exhibited higher tensile moduli and tensile strength than those with randomly oriented graphene. In addition to the mechanical properties, the electrical conductivity of nanocomposites with different graphene loadings was measured with an electrometer. The results indicated that when the graphene loading was 0.15 wt%, the electrical conductivity of the nanocomposites was close to the percolation threshold. Subsequently, three-point bending tests were conducted on single edge notch bending (SENB) specimens with the graphene aligned perpendicular to the loading direction. During the tests, the electrical resistance of the specimens was measured using a high-resistance meter. The results indicated that the resistance of the samples increased markedly prior to crack extension. Thus, aligned graphene can be employed to detect crack extensions. Moreover, the crack extension in single lap joint was detected using the aligned graphene embedded within the epoxy adhesive. The aligned graphene provides an electrically conductive medium between composite adherents. It was observed that changes in resistance were correlated with the increase in crack length, and this relationship was described using a resistance formula.

Bio.: *Dr. Jia-Lin Tsai is a full professor in the Department of Mechanical Engineering at National Yang Ming Chiao Tung University in Taiwan. He completed his MS and PhD degrees at School of Aeronautics and Astronautics, Purdue University in the United States in the years 1998 and 2001, respectively. Following this, he conducted his postdoctoral research at Purdue from 2001 to 2002. His academic journey led him to National Chiao Tung University in Taiwan, where he served as an assistant professor from 2002 to 2006, and subsequently, as an associate professor from 2006 to 2009. In 2009, he achieved the rank of full professor. Dr. Tsai also took on administrative responsibilities as the Chairman of the Department of Mechanical Engineering at National Chiao Tung University from 2014 to 2017. Currently, he holds the position of Associate Editor for the journals "Journal of Mechanics" and "Multi-scale Science and Engineering." His primary research expertise lies in the characterization of mechanical properties of composites and nanocomposites, failure analysis and fracture mechanics. He received best paper awards from Journal of Mechanics at solid mechanics area in the year of 2022.*

INVITE SPEAKER

Tokyo Time	11:00-11:30, October 28, 2023	Onsite Room	Conference 1 (カンファレンス 1)
Zoom ID	856 0239 9965	Zoom Link	https://us02web.zoom.us/j/85602399965

**Bingpu Zhou**

University of Macau

Speech Title: Coupling of Magnetism with Flexible and Wearable Sensors

Abstract: The rapid development of IoT indicates that human beings are playing an important role to interact and exchange information with the surroundings. Sensors that can real-time record and transmit multiple physiological signals of human beings facilitate the interaction with the complex environment and promote the advanced development of our society. In this presentation, we will introduce our recent work focusing on the coupling of magnetism with flexible sensing components, which is targeting to explore and broaden the applications of wearable devices for future human-machine interaction (HMI) systems. By using the intrinsic magnetic dipole property, we will show that the flexible magnetized microstructures can be applied to distinguish the force directions. This allows the establishment of directional sweeping interactions in a more straightforward manner. Also, the conversion of mechanical stimuli to electrical signals will be explained and demonstrated for wearable HMI applications, such as surface re-construction, and Morse code communications, etc. The working mechanism and optimization principle of magnetism coupling into flexible and wearable devices will be discussed in details.

Bio.: *Dr. Bingpu Zhou* obtained his PhD degree from HKUST in 2015. He is currently an Associate Professor of Institute of Applied Physics and Materials Engineering in University of Macau. Dr. Zhou also serves as the Associate Department Head of Department of Physics and Chemistry in Faculty of Science and Technology, and the Joint Associate Professor in Function Hub at HKUST (GZ). His group is mainly focusing on the optimization of flexible sensors with magnetism-mechanics-coupled effect, and functional surface/interface analysis. Some of the work have been published in *Advanced Materials*, *Advanced Functional Materials*, *ACS Nano*, and *Nano Energy*, etc. as first/corresponding author.

Oral Session 1

S1 / Preparation and Applications of Nanomaterials

Tokyo Time 13:00-15:00, October 28, 2023 Onsite Room Conference 1 (カンファレンス 1)

Chair:

Time	ID	Presenter	Affiliation
13:00-13:15	C1003-A	Ling-Xia Yun	Beijing University of Chemical Technology
13:15-13:30	C1001-A	Roopkumar Sangubotla	Gachon University
13:30-13:45	C1006	Shunjiro Fujii	University of Hyogo
13:45-14:00	C13001	Nadeem Kizilbash	Northern Border University
14:00-14:15	C1031	Phatharaporn Phaonoeng	Chulalongkorn University
14:15-14:30	C1011	Rohit Tilwani	Mapua University
14:30-14:45	C1030-A	Sungho Lee	Dong-A University
14:45-15:00	C2051	Yi Chun Jin	Wistron NeWeb Corporation

Details

ID	Title and Authors
C1003-A	Controllable Preparation of Metal Oxides Nanodispersions and Their Catalytic Degradations of PET Ling-Xia Yun, Jing-Tao Du, Jie-Xin Wang
C1001-A	Tannic Acid-Functionalized Carbon Dots for the Sensitive Turn-On Fluorescent Detection of Ascorbic Acid Roopkumar Sangubotla, Jiwoo Nam, Jongsung Kim
C1006	Fabrication of Liquid-Metal Printed 2D Tin oxide Nanosheets for Optoelectronic Applications Shunjiro Fujii
C13001	Silver and Palladium-embedded Acrylamide-based Hybrid Cryogels as Antimicrobial Agents Qamir Ullah, Nadeem Kizilbash, Jaweria Ambreen, Ayesha Ahmed, Mohamed Soliman, Mashael Alhumaidi Alotaibi, Dalayah Alruwaili, Modhi Alenizi, Abdul Haleem, Muhammad Siddiq, Shams Ur Rehman
C1031	Preparation of Silver Nanoparticles Deposited on TEMPO-oxidized Cellulose Nanofibers Phatharaporn Phaonoeng, Supachok Tanpichai, Anyaporn Boonmahitthisud
C1011	Isolation of Cellulose Nanosphere from Corn Husk as a Filler for UV-cured PEGDMA Nanocomposite Hydrogels Rohit Tilwani, Kirsten Noelle Anastasia Calimon, Persia Ada De Yro
C1030-A	Novel Fabrication Method of Micro/Nano Structures Using Shrinkage of PVA Sungho Lee
C2051	Enhanced Electrical Conductivity of Graphene-Incorporated Copper Wire and Its Performances on Coaxial Cable Application at Sub 6 GHz Yi Chun Jin, Han Chang Pan, Shih Hong Chen

Oral Session 2

S2 / Coatings and Composite Materials

Tokyo Time	13:00-15:00, October 28, 2023	Onsite Room	Conference 3 (カンファレンス 3)
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Chair:

Time	ID	Presenter	Affiliation
13:00-13:15	C2043	Panya Wintachai	Khon Kaen University
13:15-13:30	C2044	Nujira Kothanam	Sakon Nakhon Rajabhat University
13:30-13:45	C1034	Phimaphon Kaeokanphai	Chulalongkorn University
13:45-14:00	C1025	Pongsert Sriprom	King Mongkut's Institute of Technology Ladkrabang
14:00-14:15	C2013	Nur Azrini Ramlee	Universiti Teknologi MARA
14:15-14:30	C2005-A	Jia-Lin Tsai	National Yang Ming Chiao Tung University
14:30-14:45	C2007-A	Jung-San Chen	National Cheng Kung University
14:45-15:00	C2014	Korbkaroon Doungkeaw	King Mongkut's University of Technology North Bangkok

Details

ID	Title and Authors
C2043	Influence of Duty Cycle on the Phosphorus Content and Hardness of the Ni-P Coatings Produced by Pulse-Current Electroplating Panya Wintachai, Nujira Kothanam, Komsak Harahai, Napat Triroj, Papot Jaroenapibal
C2044	Effect of Current Density on Hardness of Ni-P/diamond Composite Coatings Fabricated by Electrodeposition Nujira Kothanam, Chatpawee Hom-On, Jirapan Srimaneerat, Panya Wintachai, Premchai Moolla, Komsak Harachai, Jiaqian Qin, Yuttanant Boonyongmaneerat, Napat Triroje and Papot Jaroenapibal
C1034	Chitosan - based Coating Incorporated with Chitin Nanofibers for Extension of the Shelf Life of Fruits Phimaphon Kaeokanphai, Supachok Tanpichai, Anyaporn Boonmahitthisud
C1025	Characterization and Self-Cleaning Properties of Silk fabric coated by Chitosan-Xyloglucan/nano-TiO ₂ composite film Chaiyawat Na Lampang, Pongsert Sriprom, Kanjana Manamoongmongkol, Lamphung Phumjan, Woatthichai Narkrugsa, Pornsawan Assawasaengrat
C2013	Glass Transition Temperature and Mechanical Properties of Poly(Ethylene Carbonate)/Organoclay Composites Nur Azrini Binti Ramlee, Nur Syazwani Antong Binti Ibrahim, Baxley Jinuin Victor and Norin Zamiah Binti Kassim Shaari
C2005-A	Investigating a Proper Repeating Unit Cell (RUC) Size for Particulate Composites Jia-Lin Tsai, Ya-Ting Lin
C2007-A	Sound Absorbing Panels Containing Microslits and Arch Channels Jung-San Chen, Wen-Yang Lo
C2014	Printability and Mechanical Properties of PLA/Iron Composites for FDM 3D Printing Korbkaroon Doungkeaw, Jennarong Tungtrongpairoj

Oral Session 3

S3 / Electrochemistry, Applied Catalysis, and Chemical Engineering

Tokyo Time

16:00-17:45, October 28, 2023

Onsite Room

Conference 1 (カンファレンス 1)

Chair:

Time	ID	Presenter	Affiliation
16:00-16:15	C2034-A	Myeong-Hun Jo	Seoul National University Science and Technology
16:15-16:30	C1033-A	Amornrat Khampuanbut	Chulalongkorn University
16:30-16:45	C1004-A	Meng Qiao	Beijing University of Chemical Technology
16:45-17:00	C2039-A	Hyeong-Rae Kim	Seoul National University Science and Technology
17:00-17:15	C2045	Muzakkir Mohammad Zainol	Universiti Teknologi MARA
17:15-17:30	C2035	Aidana Boribayeva	Nazarbayev University
17:30-17:45	C1010-A	Rong-Kun Liu	Beijing University of Chemical Technology
17:45-18:00	C2059-A	Chosel P. Lawagon	University of Mindanao

Details

ID	Title and Authors
C2034-A	Effects of One-Pot Induced Defective Structures on Li-ion Storage Behaviors Myeong-Hun Jo and Hyo-Jin Ahn
C1033-A	Photo-assisted Charging Supercapacitor of BiOBr via pH-Dependent Control by Facial Precipitation Method Amornrat Khampuanbut, Prasit Pattananuwat
C1004-A	Controllable Preparation of Pt-Based Alloys by High gravity technology and Their Catalytic Performance for Methanol Electrooxidation Meng Qiao, Jie-Xin Wang
C2039-A	Improvement of Electrochemical Performances through Carbon-Based Material Modification for Energy Storage Electrodes Hyeong-Rae Kim, Kue-Ho Kim and Hyo-Jin Ahn
C2045	Physical and Chemical Characterization of Lignin-based Carbon as Acidic Catalyst Abdull Hafidz Hassan, Muzakkir Mohammad Zainol, Siti Norazian Ismail, Mohd Asmadi, Kamarul Ridwan Zainuddin and Norazah Abd Rahman
C2035	Numerical Analysis of Packing Structure of Non-Spherical Particles and Sphericity Change of Particles and Their Effect on Heat Transfer through Packed Powder Bed Aidana Boribayeva, Xeniya Gvozdeva and Boris Golman
C1010-A	Efficient Fabrication of Colloidosomes by Spray Drying Technology Rong-Kun Liu, Hong Zhao, Jie-Xin Wang
C2059-A	Engineered Smart Concrete with Agricultural Waste-derived Carbon Nanomaterials for Self-Sensing Applications Emmy Jill J. Funa, Roumel Salvador Alvarez, James Mark M. Gallawan, Crijamaica O. Godoy, Jazth Manota, Chosel P. Lawagon

Oral Session 4

S4/ Polymer Chemistry and Polymer Physics

Tokyo Time	16:00-17:45, October 28, 2023	Onsite Room	Conference 3 (カンファレンス 3)
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Chair:

Time	ID	Presenter	Affiliation
16:00-16:15	C2053	Jinbo Liu	Southeast University
16:15-16:30	C2048-A	Tamonwan Chantaramanee	Chulalongkorn University
16:30-16:45	C2052	Xue Hu	Southeast University
16:45-17:00	C2049-A	Laksika Ongthip	Chulalongkorn University
17:00-17:15	C2009	Sherwin Leemark Abing	Mapua University
17:15-17:30	C2054	Pranithan Silprasert	chulalongkorn university
17:30-17:45	C2057-A	Chih-Lang Lin	Central Taiwan University of Science and Technology

Details

ID	Title and Authors
C2053	Tailoring Structure-dominated Mechanical Properties of Poly (L lactide acid) Monofilaments via Controllable Molecular Relaxation Jinbo Liu, Chen Zhang, Bin Wang, Xue Hu, Wentao Liu, Jie Cheng, Zhonghua Ni, Gutian Zhao.
C2048-A	Use of borax as a crosslinker in Epoxidized Natural Rubber Tamonwan Chantaramanee, Supachok Tanpichai, Anyaporn Boonmahitthisud
C2052	Mechanical Behavior of Polymer Braided Stent at Rapid Radial Loading Xue Hu, Chen Zhang, Bin Wang, Jinbo Liu, Wentao Liu, Jie Cheng, Gutian Zhao, Zhonghua Ni, Juekuan Yang
C2049-A	Effect of Epoxidized Castor Oil as a Chain Extender on The Properties of Recycled Polyethylene Terephthalate Laksika Ongthip, Anyaporn Boonmahitthisud, Phasawat Chaiwutthinan, Saowaroj Chauyuljit
C2009	Mechanical Behavior and Void Analysis of 3D Printed PEEK by Fused Deposition Modeling (FDM) with Varying Infill Patterns Sherwin Leemark Abing, Persia Ada de Yro, Shaun Angelo Aranez
C2054	Using Borax as a Cross-Linking Agent in Poly(Vinyl Alcohol)/Hemp-Extracted Cellulose Hydrogels Pranithan Silprasert, Anyaporn Boonmahitthisud, Supachok Tanpichai
C2057-A	Preliminary Study of Real-Time Visual P μ SL 3D Printing System for Improving Printing Performance Chow-Shing Shin, Ri-Chang Yang, Chih-Lang Lin

Oral Session 5

S5/ Preparation, Properties, and Applications of Advanced Materials

Tokyo Time	10:00-12:30, October 29, 2023	Online Only	Zoom ID: 856 0239 9965
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Chair:

Time	ID	Presenter	Affiliation
10:00-10:15	C2016	Sirada Leelapong,	Mahidol University
10:15-10:30	C2024	Istikamah Subuki	Universiti Teknologi MARA
10:30-10:45	C2032	Sara Kawaguchi	Konan University
10:45-11:00	C2038	Khadijah Ismail	Universiti Pertahanan Nasional Malaysia
11:00-11:15	C1007	Shih-Pang Tsai	Doshisha University
11:15-11:30	C1027	Maxine Swee-Li Yee	University of Nottingham Malaysia
11:30-11:45	C1038	Farah Ma'ashi	King Abdulaziz University
11:45-12:00	C1028	Maxine Swee-Li Yee	University of Nottingham Malaysia
12:00-12:15	C2006	Toshio Haga	Osaka Institute of Technology
12:15-12:30	C1037	Jeremiah Millare	Mapua University

Details

ID	Title and Authors
C2016	The Physical Properties of Vanillin-incorporated Irreversible Hydrocolloid Impression Material Sirada Leelapong, Sirilak Mateekusontan, Supissara Makkrajang, Pornkiat Churnjittapirom, Sroisiri Thaweboon
C2024	Effect of Glycerol Monostearate (GMS) as Compatibilizer on High Density Polyethylene-Palm Stearin Composite Properties Istikamah Subuki, Nur Azrini Ramlee, Ahmad Rafizan Mohamad Daud, Muhammad Hussain Ismail, Norazlen Rasid
C2032	Magneto-Conductive and Magnetic Properties in La _{1-x} Sr _x MnO ₃ Thin Films on α-SiO ₂ Substrates produced by Metal Organic Decomposition Method Sara Kawaguchi, Kohei Hamada, Hiromi Kobori, Toshifumi Taniguchi, Tetsuo Shimizu
C2038	Experimental Characterisation of BGBC OTFT for Indoor CO ₂ Gas Sensing Mohamad Nasyran Zailan, Khadijah Ismail, Murniati Syaripuddin and Mohd Salman Mohd Sabri
C1007	Investigation of Polylactic Acid Nanofibers as Enhanced Plant Growth Medium by Improved Melt-Blowing Method Shih-Pang Tsai
C1027	Revolutionizing Antibacterial Surfaces: 3D Printed Nanoscale and Microscale Topographies through Two-Photon Polymerization Maxine Swee-Li Yee
C1038	Flexible and Disposable Gas Sensors Based on Two-dimensional Materials Farah Ma'ashi

C1028	Optimisation Studies of Mesoporous Silica Nanoparticle as a Drug Carrier for Gemcitabine: Enhancing Therapeutic Effectiveness in Pancreatic Cancer Maxine Swee-Li Yee
C2006	Sheet Forming of Roll Cast Aluminum Alloy for Die Casting Toshio Haga
C1037	Halloysite Nano Tube (HNT) Dispersion Stability in Ethanol-Water Mixture and Water Aaron Zaeh Dilidili, Jhoneliza Habiling, Paul Eric Maglalang, Jeremiah Millare

Poster Session

P/ Nanomaterials and Material Chemistry

Tokyo Time

15:00-16:00, October 28, 2023

Venue

Conference 1 (カンファレンス 1)

Chair:

ID	Title and Authors	Presenter	Affiliation
C2047	Enhanced Performance of Epoxidized Natural Rubber Nanocomposites for Strain Sensor Application Sahatep Trimongkonkool, Kanoktip Boonkerd, Apinya Krainoi	Sahatep Trimongkonkool	Chulalongkorn University
C1014	Improving the Thermo-Physical Properties of Plam Oil with Zeolite Nanoparticles Pornsawan Assawasaengrat, Pongsert Sriprom, Thanasuta Limsakul, Penpichcha Bunprasert, Wasan Chokelarb	Pornsawan Assawasaengrat	King Mongkut's Institute of Technology Ladkrabang
C1019-A	Novel Stretchable Sensors in Human Motion Monitoring Wearables Ping-Yu Chung, Min-Shuan Chen, Chia-Jung Cho	Ping-Yu Chung	I-Shou University
C1022	Green Synthesis of Polysaccharide-Capped Silver Nanoparticles by Using the Aqueous Extract of Annona Atemoya Peel Waste and its Antibacterial Activities and Naked-Eye Hg ²⁺ Detection Yen-Yu Chen, Pei-Yu Chiang, Ching-I Hsu, Kwang-Ming Lee	Kwang-Ming Lee	National Kaohsiung Normal University
C1020-A	Healthcare Monitoring of Next-Generation Tactile Piezoresistive Devices Pin-Jui Lin, Ping-Yu Chung, Chia-Jung Cho	Pin-Jui Lin	I-Shou University
C2023-A	Organic-Inorganic Hybrid Zinc Phosphites with Photosensitizer Nanocomposite for Biomedical Applications Ying Li, M. C. Yin, H. L. Tu, C. M. Wang	Ying Li	National Taiwan Ocean University
C2008-A	Novel Vanadium-based Cathode Materials for High-Performance Aqueous Zinc-ion Batteries Saf MEndez	Saf Mendez	UCL - ASTAR
C2022	Antimicrobial Effect of Dental Adhesive on Cariogenic Multi-Species Biofilm Sroisiri Thaweboon, Takashi Saito, Sirilak Mateekusontan, Boonyanit Thaweboon	Sroisiri Thaweboon	Mahidol University
C2025-A	Construction of Coordinatively Unsaturated Zn ²⁺ Sites for Enhanced Photo-Fenton Activity Jian Sun, Juan Liu	Juan Liu	Dalian Maritime University
C2028	The Low-temperature Thermal Conductivity of Epoxy Resin Composites Enhanced by Graphene and Modified Alumina Hybrid Fillers Yue Xiang, Rongjin Huang, Zhengrong Zhou, Tao Wang, Li Shi, Wentao Sun, Chushu Fang, Laifeng Li	Yue Xiang	Technical Institute of Physics and Chemistry

C2029	Design of Electrical Sheet Resistance of Thin Film Measurement System based on GM Cryocooler in Cryogenic Temperature Zhen Geng, Yemao Han, Zhengrong Zhou, Haoying Qi, Yuchen Zhao, Haojian Su, Rongjin Huang, Laifeng Li	Zhen Geng	Technical Institute of Physics and Chemistry, Chinese Academy of Sciences
C2041-A	A new MOF for Heavy Metal Removal in Aqueous Solution Jia-Yi Jian, Ying Li and Chih-Min Wang	Jia-Yi Jian	National Taiwan Ocean University
C2031	Analysis of the Curing Behavior of Cyanate/Epoxy Resins for Fusion Magnets Baoleer, Yue Xiang, Li Shi, Wentao Sun, Zhixiong Wu, Rongjin Huang, Laifeng Li	Baoleer	Institute of Physical and Chemical Technology, Chinese Academy of Sciences
C2046	Effect of Rubber Formula on Performance of Natural Rubber Based Foam for Insulating Ceiling Board Application Natyada Jantawong, Kanoktip Boonkerd, Kanokon Hancharoen	Natyada Jantawong	Chulalongkorn University
C2056	Experiments of Failure and Damage in ITO-coated PC / FPC with ACF Bonding due to Bending Fatigue Chao-Ming Lin, Chun-Yi Chu	Chao-Ming Lin	National Chiayi University

Must-see Attractions in Fukuoka

Fukuoka Castle



Sometimes also known as Maizuru Castle and Seki Castle, Fukuoka Castle (Fukuoka-jō) is a fine example of the type of lavish 17th-century hilltop home once preferred by the country's ruling elite.

While the large remaining structure is only a small fraction of the original castle's once massive complex - it's believed to have covered an area of some 47,000 square meters - it remains an impressive site, perched high atop a tall stone foundation overlooking the Naka River.

Ukiha Inari Shrine



Retreat from the urban hustle and bustle of Fukuoka City by taking a trip to the "Kingdom of Fruits," where you'll find an inari shrine (Shinto shrine dedicated to the god Inari) with nearly one hundred torii gates standing solemnly on a mountain.

About an hour away from the central area of Hakata lies the peaceful town of Ukiha in southeastern Fukuoka. A fruit lovers dream, Ukiha produces tons of varieties of grapes, peaches, persimmon, and it's an instant hit for those looking to do some strawberry picking (in the winter months). But while here, it's hard not to gaze at a long red snake winding along the Mino Mountain range.

Fukuoka Tower



Rising 234 metres above the city of Fukuoka, the Fukuoka Tower cuts an imposing figure in the cityscape. It boasts the greatest height of any seaside tower in Japan and offers a spectacular view of the city below.

It's designed to withstand magnitude seven earthquakes and wind speeds of up to 65 miles per second. But this isn't the tower's only physics-defying feat. Fukuoka Tower features a triangular cross-section that is covered with 8000 half-mirrors, earning it the nickname "The Mirror Sail".

Kushida-jinja Shrine



One of the oldest Shinto shrines in Japan that hosts a two-week-long festival every year.

One of Japan's best known (and Fukuoka's oldest) Shinto shrines, Kushida-jinja was founded in AD 757 and contains many unique features, including exquisite carvings of the Chinese zodiac and a ginkgo tree said to be more than 1,000 years old.

The shrine is also famous for hosting the Hakata Gion Yamakasa each July. This spectacular two-week-long festival focuses on prayers for good health and prosperity and includes an elaborate race involving teams carrying heavy wooden floats from the temple to various locations around the city.

Ōhori Park



A beautiful park with a historic lake that was once the moat of Fukuoka Castle

Fukuoka boasts a number of large public parks worth exploring. One of the most popular is Ōhori Park (Ōhori-kōen), a designated place of scenic beauty just a few minutes' walk from the city center.

Taking its name from the large man-made lake around which it's centered - once the moat of Fukuoka Castle - this magnificent water park was established in 1929 and is a delight to explore.

