

Foreword



Chair: Kikuo Kishimoto

Dean, School of Environment and Society, Tokyo Tech

It is my great pleasure and honor to welcome all of you to the current Japan-Taiwan International Engineering Forum. This year the forum is being held on March 9th and 10th, 2017, at Tokyo Institute of Technology. The forum consists of two parts. The first part is the Young Faculty Symposium. Its aim is to bring together young science and engineering researchers from Taiwan and Japan in order to discuss new developments in all fields of engineering, while promoting international cooperation between our two regions. The second part is the Engineering Education Symposium. The main emphasis of this symposium is to share our experiences of higher education in engineering and to explore new ideas for implementing global strategies between Taiwan and Japan in engineering education. We shall also discuss how to cultivate and encourage top-flight engineering researchers. We here at Tokyo Tech trust that this forum will promote inter-university cooperation and likewise contribute to advance the quality of engineering education in general as well as the overall research capacities and outcomes of each participant.

I deeply appreciate generous support from the National Taiwan University System, National Taiwan University of Science and Technology, the Taipei Economic and Cultural Office, and 6U-HAPPIER [Human Assets Promotion Program for Innovative Education and Research]. I am also grateful for assistance from our various colleagues and staff of the School of Engineering, the School of Materials and Chemical Technology, and the School of Environment and Society at Tokyo Tech.

Ki Kishimoto

Kikuo Kishimoto

March 9, 2017

Schedule

Thursday, 9th March

13:30	Registration @ Foyer, 4F Main Building		
14:00	Opening Ceremony @ 1 st Meeting Room, 4F Main Building		
14:15	Young Faculty Symposium 1A	Young Faculty Symposium 1B	Deans' Dialog
15:45	@ H117, 1F Main Building	@ H118, 1F Main Building	@ 1 st Meeting Room

16:15	Global Strategies in Engineering Education 1
17:15	@ H136, 3F Main Building

17:30	Welcome Reception @ 1 st Meeting Room, 4F Main Building
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Friday, 10th March

09:30	Global Strategies in Engineering Education 2
10:30	@ 1 st Meeting Room, 4F Main Building

Group photos in front of Main Bld.

10:50	Young Faculty Symposium 2A	Young Faculty Symposium 2B
12:00	@ H117, 1F Main Building	@ H118, 1F Main Building

12:00	Bento-Lunch @ 1 st Meeting Room, 4F Main Building Optional Visit to Tokyo Tech Museum
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13:30	Closing Ceremony
13:50	@ 1 st Meeting Room, 4F Main Building

14:00	Lab Tour
16:00	EEl, ME, CE, etc.

Program

Thursday, 9th March 2017

- 14:00-14:15 Opening Ceremony @ 1st Meeting Room, 4F Main Building

Chair: Prof. Atsushi Takahashi (6U-HAPPIER)

1. Opening Remarks

Prof. Kikuo Kishimoto (Dean, School of Environment and Society, Tokyo Tech)

2. Exchange of Gifts

3. Announcements

Prof. Akira Yamada (6U-Happier)

- 14:15-15:45 Deans' Dialog @ 1st Meeting Room, 4F Main Building

Chair: Prof. Kikuo Kishimoto (Dean, School of Environment and Society, Tokyo Tech)

1. "Taiwan League and International Collaboration of Taiwan Tech" (20 min)

Prof. Duu-Jong Lee (CEO, NTU System Office)

2. "International Cooperation at NTNU" (15 min)

Prof. Kwunmin Chen (Dean, College of Science, NTNU)

3. 6U-HAPPIER (15 min)

Prof. Akinori Nishihara (6U-Happier)

4. Brainstorming

- 14:15-15:45 Young Faculty Symposium 1

Session 1A (Mechanics & Electronics)

H117, 1F Main Building, 10-min presentation

Chair: Masayasu Shimura (Assoc. Prof., Tokyo Tech)

1	C.L. Kuo	NTUST	Novel Design and Methodology of Cutting Semi-conductive Material Using Wire Electrical Discharging Machining
2	Masayasu Shimura	Tokyo Tech	Control of Global and Local Structures of Turbulent Swirling Premixed Flame
3	Yao-Yang Tsai	NTU	Development of Combined Micro-EDM and Polishing Process

4	Kosuke Takahashi	Hokkaido U.	Tack Strength of Pressure-Sensitive Adhesives
5	C.H. Kuo	NTUST	Interactive Mechanisms: Theories, Design, and Applications
6	Akihiro Maruta	Osaka U.	Double Degree Program with European Universities for Master's Course on Photonic Network Engineering
7	Chien-Hao Liu	NTU	Mechanically Tunable Large-area Periodic Structures
8	Tomohisa Tanaka	Nagoya U.	Development of Laser Multi-coloring Systems
9	Chang-Hong Lin	NTUST	A Virtual Interactive Manipulation System Based on Augmented Reality

Session 1B (Materials)

H118, Main Building, 10-min presentation

Chair: Chiu-Yen Wang (Assoc. Prof., NTUST)

10	Chin-Yang Yu	NTUST	Conjugated Polymers for Optoelectronics
11	Yaw Wang CHAI	Tokyo Tech	Development of Half-Heusler Thermoelectric Materials for Vehicles
12	Chiu-Yen Wang	NTUST	In-situ TEM Study: Thermal Properties and Solid Reactions of Nanomaterials
13	Tomohiro Hayashi	Tokyo Tech	Interfaces between Artificial Materials and Living Cells: Physical Origin of Biocompatibility
14	Shyh-Chyang Luo	NTU	Conducting Polymers for Multifunctional Bio-interfaces: Methods and Applications
15	Takumi Sannomiya	Tokyo Tech	Watching Light in Nanoscales by Electron Beam
16	Fang-Yuh Lo	NTNU	Rare Earth Element Doped ZnO Thin Films
17	Terai Tomoyuki	Osaka U.	Career Development Course for Foreign Students from Asia in Minor Programs of Osaka University
18	Yi-Hsuan Hung	NTNU	Innovative Energy Control and Thermal Management for Green Vehicles

- 16:15-17:15 Global Strategies in Engineering Education 1 @ H136, 3F Main Building

Chair: Prof. David Stewart (6U-HAPPIER)

1. "A Journey on Building the International Engineering Program at NTU"
Prof. Wen-Chang Chen (Vice Dean, College of Engineering, National Taiwan University)
2. "Engineering Education: Past, Present and Future"
Prof. Kikuo Kishimoto (Dean, School of Environment and Society, Tokyo Tech)

- 17:30-18:30 Welcome Reception @ 1st Meeting Room, 4F Main Building

MC: Prof. Akinori Nishihara (6U-HAPPIER)

1. Welcome Remarks (Tokyo Tech)
Prof. Yuji Wada (Dean of School of Materials and Chemical Technology, Tokyo Tech)
2. Welcome Remarks from the Ebara Corporation
Dr. Manabu Tsujimura (CTO)
3. Toast
Prof. Bohr-Ran Huang (Dean, Electrical Engineering and Computer Science, Taiwan Tech)

Friday, 10th March 2017

- 09:30-10:30 Global Strategies in Engineering Education 1 @ 1st Meeting Room, 4F Main Building

Chair: Prof. Yuji Kagohashi (6U-HAPPIER)

1. "Globalization of Engineering Education – Role of Funding Agencies and International Cooperation"
Dr. Lu-Sheng Hong (Director, Science and Technology Division, Taipei Economic and Cultural Representative Office in Japan)
2. "Globalization of Engineering Education at the School of Engineering, Tohoku University"
Prof. Hirokazu Moriya (Division of International Education and Exchange, School of Engineering, Tohoku University)
3. "International Programs of Engineering Education in Nagoya University"
Prof. Norihiko Nishizawa (Department of Quantum Engineering, Nagoya University)
4. "Various International Programs for Engineering Students - How Do They Work?"

Prof. Kiyoshi Fuji-ta (Graduate School of Engineering, Center for International Affairs, Osaka University)

● 10:50-12:00 Young Faculty Symposium 2

Session 2A (Mechanics & Electronics)

H117, 1F Main Building, 10-min presentation

Chair: Che-Chou Shen (Assoc. Prof., NTUST)

19	Motoki Sakaguchi	Tokyo Tech	Fracture Mechanics in Ni-base Superalloys for Jet Engine Applications
20	Che-Chou Shen	NTUST	Ultrasound Harmonic Imaging using Pulse-width Modulation Transmit Waveform
21	Kazuyoshi Nakada	Tokyo Tech	High Efficiency Crystalline Silicon Heterojunction Solar Cells
22	Syuan-Yi Chen	NTNU	Intelligent Control of Servo Motor Drives
23	Shimpei Sato	Tokyo Tech	A Design Method for High-speed Digital Circuits with Speculative Execution
24	Wei-Chun Teng	NTUST	Entropy-based Clock Skew Measurement over Networks
25	Masamichi Kohno	Kyushu U.	Enhanced Thermal conductivity of Phase Change Nanocomposite with Various Carbon Nanomaterials

Session 2B (Materials)

H118, 1F Main Building, 10-min presentation

Chair: Chun-Han Lin (Asst. Prof., NTNU)

26	Tinh Q. Bui	Tokyo Tech	Numerical Approaches for Failure Modeling of Concrete
27	Chun-Han Lin	NTNU	Power-Saving Techniques with High Visual-Quality for Mobile Displays
28	Takanori Tamaki	Tokyo Tech	Systematic Material Design Using Biomolecules: Enzymatic Biofuel Cells and DNA-Conjugated Stimuli-Responsive Membranes

29	Dun-Yen Kang	NTU	Wet Deposition of Inorganic Nanoporous Thin Films
30	Yusuke Shimoyama	Tokyo Tech	Separation and Material Process Using Supercritical CO ₂
31	Chia-Ying Chiang	NTUST	New Materials for Renewable Hydrogen Energy Production
32	Naoki Kimura	Kyushu U.	Fault Detection in Chemical Plant Using Negative Selection Algorithm

● 13:30-13:50 Closing Ceremony @ 1st Meeting Room, 4F Main Building

Chair: Prof. Ri-ichi Murakami (6U-HAPPIER)

Closing Remarks

1. Prof. Nobuyuki Iwatsuki (Dean, School of Engineering, Tokyo Tech)
2. Prof. Jhy-Chern Liu (Dean of Engineering, NTUST)

● 14:00-16:00 Laboratory Tour

- “Facilities of Design and Manufacturing for Education and Research,”
Asst. Prof. Daisuke Matsuura (Department of Mechanical Engineering, Tokyo Tech):
Ishikawadai Bldg. #3 - 2F Workshop
- “Chemical Engineering and Industrial Chemistry” and “Advanced Materials and Related Technologies,”
Prof. J. Shi (Department of Materials Science and Engineering, Tokyo Tech):
East Bldg. #2 Front Lobby
- “Energy Conversion Chemistry in Advanced Energy Building, EEI Bldg.,”
Prof. M. Ihara (Department of Chemical Science and Engineering, Tokyo Tech):
North Bldg. #3, 6F Refresh Room

Lab Tours: Grouping and Tour Routes

Time: 30-min viewing and 10-min walking per site: Total approx. 120 min

Group A (10 people): **Tour Guide**, Prof. A. Nishihara (6U-HAPPIER)

Route: Main Bldg. → Mechanical Eng. → Chemical Eng. → EEI Bldg. → Main Bldg.

Members:

Prof. Duu Jong Lee, Prof. Jhy-Chern Liu, Prof. Bohr-Ran Huang, Prof. Chao-Chang Chen, Prof. Yee-wen Yen, Prof. Sheau Pyng Ju, Prof. Wen-Chang Chen, Prof. Chin-Pao Cheng, Prof. Kwunmin Chen, and Prof. Ri-ichi Murakami

Group B (8 people): **Tour Guide**, Prof. A. Yamada (6U-Happier)

Route: Main Bldg. → Chemical Eng. → EEI Bldg. → Mechanical Eng. → Main Bldg.

Members:

Assist. Prof. C.L. Kuo, Assoc. Prof. C.H. Kuo, Assoc. Prof. Chin-Yang Yu, Asst. Prof. Chang-Hong Lin, Prof. Che-Chou Shen, Assoc. Prof. Wei-Chun Teng, and *Asst. Prof. Chia-Ying Chiang, *Asst. Prof. Chiu-Yen Wang,

*Leave earlier to catch flight at 17:55 at Haneda Airport (HND)

Group C (9 people): **Tour Guide**, Prof. A. Takahashi (6U-HAPPIER)

Route: Main Bldg. → EEI Bldg. → Mechanical Eng. → Chemical Eng. → Main Bldg.

Members:

Assoc. Prof. Yao-Yang Tsai, Assist. Prof. Chien-Hao Liu, Assist. Prof. Shyh-Chyang Luo, Asst. Prof. Dun-Yen Kang, Assoc. Prof. Fang-Yuh Lo, Prof. Yi-Hsuan Hung, Asst. Prof. Syuan-Yi Chen, Asst. Prof. Chun-Han Lin, and Assoc. Prof. Yaw Wang CHAI

Wireless Internet Connection

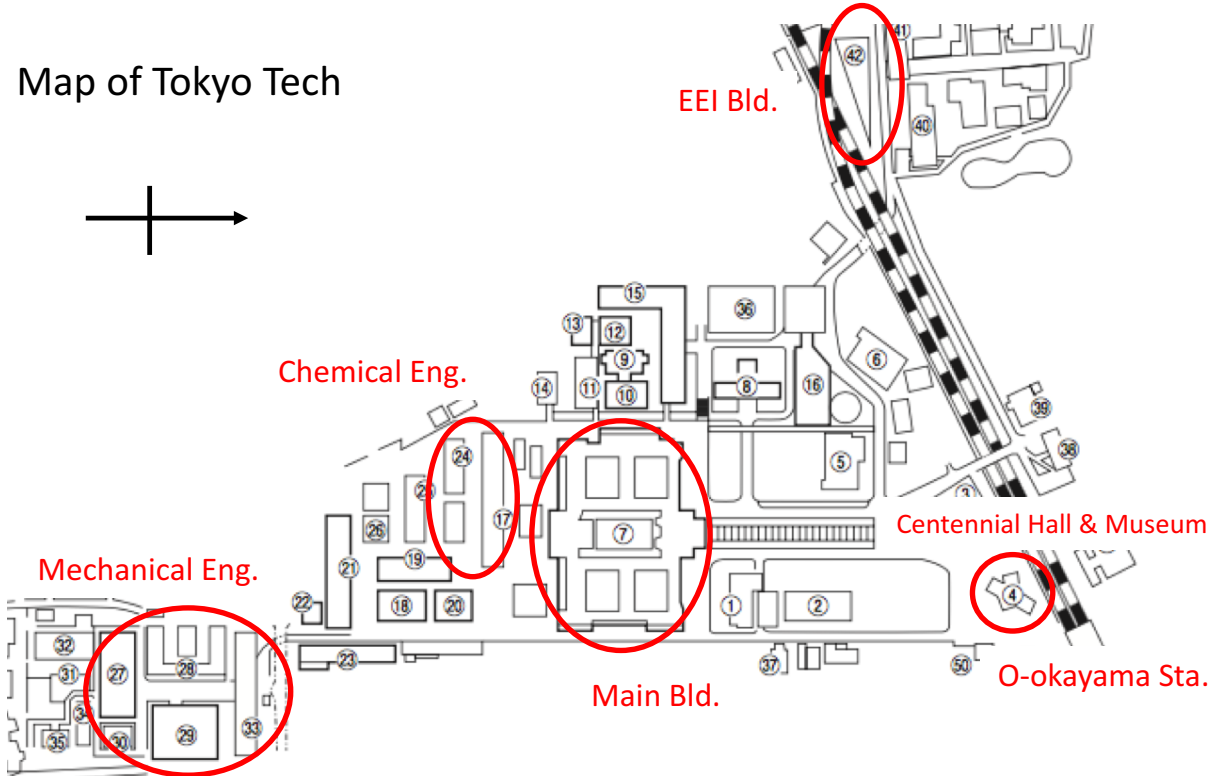
Connection Settings	ESSID: JapanTaiwanIEF2017 Encryption: WPA2-PSK/AES Passphrase: BeautifullIsland
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(Eduroam can also be used if you have an account.)

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1. Use **ONLY** your own account.
(Do not use others' accounts OR permit anyone to use your account.)
2. Verify that there is no security problem before connecting your computer to the **Tokyo Tech Information Infrastructure**.
3. Do not violate Intellectual Property Rights.
4. Do not contravene public order or violate safe practices.
5. Do not perform any fraudulent act, such as building a pyramid scheme.
6. Do not engage in defamation or harassment.
7. Do not initiate or deliver an intentional attack.
8. **Do NOT use P2P software:** (If detected, the entire event net will shut down automatically.)

Map of Tokyo Tech



Main Bld. Floor Plan

