



UTokyo  
**FSI**  
Symposium



# 3<sup>rd</sup> ETH Zürich-UTokyo Strategic Partnership Symposium on the UN Sustainable Development Goals and Innovation

January 21-22, 2019

Chemistry Auditorium, School of Science, UTokyo

[www.s.u-tokyo.ac.jp/UTokyo\\_ETHZ/](http://www.s.u-tokyo.ac.jp/UTokyo_ETHZ/)



東京大学  
THE UNIVERSITY OF TOKYO

**ETH** zürich

## Symposium Program

Monday January 21, 2019

Chemistry Auditorium  
Chemistry Main Building (5F), School of Science

09:00-09:30 Registration

### **Opening Session (Chair: Prof. Hiroaki Suga)**

09:30-09:35 *Welcome Address*

Prof. Hiroyuki Takeda

Dean of the School of Science, UTokyo

09:35-10:00 *Introduction to International Strategy of the University of Tokyo*

Prof. Naoto Sekimura

Vice President, UTokyo

### **Plenary Session: Entrepreneurship (Chair: Prof Hiroaki Suga)**

10:00-11:00 *The Technology Transfer Activities of TODAI TLO "University-Industry Collaborations in Japan"*

Takafumi Yamamoto

President and Representative Director, Todai TLO

11:00-11:05 *Group Photo*

11:05-11:15 *Break*

### **Session 1: Design/Digital Fabrication (Chair: Assoc. Prof. Yusuke Obuchi)**

11:15-11:50 *Digital Fabrication and the 2020 Tokyo Olympics*

Hannes Mayer

Department of Architecture, ETHZ

11:50-12:10 *Puff*

Priya Murugeswaran, Sher Lin Tan, Sofia Iino Cotado

Department of Architecture, UTokyo

12:10-12:45 *Digital Fabrication and the 2020 Tokyo Olympics*

Assoc. Prof. Yusuke Obuchi

Department of Architecture, UTokyo

12:45-14:00 Lunch

**Session 2: Particle Physics and Innovation (Chair: Prof. Toshinori Mori)**

14:00-14:30 *Particles and Other Useful Things*

Prof. Klaus Stefan Kirch  
Department of Physics, ETHZ

14:30-14:50 *High-precision Measurements for Testing CP and CPT Symmetry*

Dr. Hiroki Nagahama  
Center for Nuclear Study, School of Science, UTokyo

14:50-15:00 *My Tokyo Experience - ETH Exchange Student About Her Stay in Japan*

Rafaela Gsponer  
Department of Physics, ETHZ & UTokyo

15:00-15:10 *My PSI Experience - From Observing to Manipulating Muons*

Ryoto Iwai  
Department of Physics, ETHZ

15:10-15:20 *Magnetic Shielding for n2EDM*

Solange Emmenegger  
Department of Physics, ETHZ

15:20-15:30 *Application of Frontier Optical Technology in Particle Physics Experiment*

Satoru Kobayashi  
Department of Physics, UTokyo

**Poster Session with Coffee**

15:30-17:30 Chemistry Auditorium Foyer

**Symposium Reception (by invitation only)**

18:00-20:00 Kadoya Sanjo-tei, Sanjo Conference Hall (B1F)

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**Tuesday January 22, 2019**

Chemistry Auditorium  
Chemistry Main Building (5F), School of Science

**Session 3: Information Technology and Society (Chair: Dr. Ryohei Hisano)**

09:15-09:45 *Predicting News Events using a Heterogeneous Information Network*

Dr. Ryohei Hisano

Social ICT Research Center, UTokyo

09:45-10:15 *Unsustainable Growth (Bubbles) in the Bitcoin Market*

Dr. Spencer Wheatley

Department of Management, Technology, and Economics, ETHZ

10:15-10:45 *Promoting Digitalization of Public Transportation: Technology and Social Implementation*

Dr. Masaki Ito

Institute of Industrial Science, UTokyo

10:45-11:00 *Break*

**Session 4: Physical Chemistry (Chair: Prof. Kaoru Yamanouchi)**

11:00-11:40 *Attosecond Spectroscopy in the Liquid Phase*

Prof. Hans Jakob Wörner

Department of Chemistry and Applied Biosciences, ETHZ

11:40-12:05 *Nonlinear Fourier Transform Spectroscopy of O<sub>2</sub> Using Intense XUV Attosecond Pulse Trains*

Dr. Shinichi Fukahori

Department of Chemistry, UTokyo

12:05-12:30 *Strong-field High-resolution Fourier Transform Spectroscopy of D<sub>2</sub><sup>+</sup> and CH<sub>3</sub>OH<sup>+</sup>*

Dr. Toshiaki Ando

Department of Chemistry, UTokyo

12:30-14:00 *Lunch*

**Lunch Meeting on Future Activities (by invitation only)**

12:45-13:45 Room 201, Chemistry East Building (2F), School of Science

**Session 5: Organic Chemistry and Pharmaceutical Processes (Chair: Prof. Hiroaki Suga)**

- 14:00-14:30      *New Chemistry from Strange Microbes*  
Prof. Jörn Piel  
Department of Biology, ETHZ
- 14:30-14:50      *At the Interface of Primary and Secondary Metabolism – A Terpene Cyclase with Novel Domain Architecture*  
Dr. Philipp Moosmann  
Department of Aquatic Bioscience, UTokyo
- 14:50-15:20      *Development of Tunable and Selective Protein Modifiers Based on Macrocyclic Peptides*  
Assoc. Prof. Yuki Goto  
Department of Chemistry, UTokyo
- 15:20-15:50      *Pharmaceutical Process Systems Engineering*  
Assoc. Prof. Hirokazu Sugiyama  
Department of Chemical System Engineering, UTokyo

**Closing Session**

- 15:50-16:00      *Closing Remarks*  
Prof. Hiroaki Suga  
Department of Chemistry, UTokyo
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**Poster Session**  
**Monday January 21, 15:30-17:30**

Chemistry Auditorium Foyer  
Chemistry Main Building (5F), School of Science

**Session 1: Design/Digital Fabrication**

1. **Priya Murugeswaran, Sher Lin Tan, and Sofia Iino Cotado**  
*Puff*

**Session 2: Particle Physics and Innovation**

2. **Manuel Zeyen**  
*Measurement of the Hyperfine Splitting in Muonic Hydrogen*
3. **Ryoto Iwai**  
*Manipulating Muons to Produce a High Brightness Beam*
4. **Solange Emmenegger**  
*Magnetic Shielding for n<sup>2</sup>EDM*
5. **Linghui Liu**  
*Exploration into Beginning of Universe with Future Linear Collider*
6. **Naoki Tsuji**  
*Detector Challenge for International Linear Collider*
7. **Rina Onda**  
*Search for Lepton Flavor Violation with Ultimate Sensitivity: MEG II Experiment*
8. **Atsushi Oya**  
*Development of Ultra-low Material Fast RPC for Background Suppression in MEG II Experiment*
9. **Naoya Ozawa**  
*Test of the Cs Magnetometer for Near-zero Magnetic Fields at the Paul Scherrer Institute (PSI)*

**Session 3: Information Technology and Society**

10. **Masaharu Matsumoto**  
*Preliminary Study on the Application of Deep-learning Technique to Solving Partial Differential Equations*
11. **Farley Oliveira and Hidefumi Hiraishi**  
*Graph Orientations and Their Use in Modelling the Physical Sciences*



**Session 4: Physical Chemistry**

12. **Qiqi Zhang**  
*CEP Dependence of the Dissociative Ionization of Methanol in the Intense Few-cycle Laser Fields*
13. **Takuya Matsubara**  
*Nonlinear Fourier Transform Spectroscopy of Acetylene in Extreme Ultraviolet Region*
14. **Takanori Nishi**  
*Entanglement and Coherence in Photoionization of H<sub>2</sub> by an Ultrashort XUV Laser Pulse*
15. **Erik Lötstedt**  
*Laser-driven Dynamics of H<sub>2</sub><sup>+</sup> by a Time-dependent Multiconfiguration Method*
16. **Youyuan Zhang**  
*Mechanism of Population Inversion in Laser-driven N<sub>2</sub><sup>+</sup>*
17. **Sho Koh**  
*Momentum Distribution of Protons Ejected from H<sub>2</sub>O<sup>2+</sup> in Ultrashort Intense Laser Fields Obtained by Time-dependent Adiabatic-state Method*

**Session 5: Organic Chemistry and Pharmaceutical Processes**

18. **Sumika Inoue**  
*In Vitro Selection of Prenylated Macrocyclic Peptides*
19. **Koki Shinbara**  
*Development of a Methodology for Displaying Head-to-Tail Macrocyclic Peptides by Means of mRNA Display*
20. **Yizhen Yin**  
*Chemical and Ribosomal Synthesis of Topologically Defined Multicyclic Peptides Primed by Selenoether Formation*
21. **Kenya Tajima**  
*Comprehensive Elucidation of Effect of Nascent Peptide Sequences and EF-G Concentration on Incorporation of Prolines in Translation*
22. **Masanobu Nagano**  
*Facile Synthesis of Cyclic Depsipeptides via De Novo Acyl-Transfer Motif*
23. **Sara Badr and Hirokazu Sugiyama**  
*Academic and Industrial Collaboration Between UTokyo and ETH Zurich/Roche*
24. **Kate Harris, Satoru Nogami, and Yoshiko Baba**  
*Managing a Strategic Partnership between UTokyo and ETH Zürich*