

# The 28th SANKEN International Symposium

# Trans-scale Science and Technology

for Future Society

2025

**January 8 (Wed) -10 (Fri),**  
**Awaji Yumebutai, JAPAN (Hybrid)**



## Program / Time table

### January 8 (Wednesday)

15:00 (For SANKEN members) Depart from SANKEN by bus  
18:00 Registration & Welcome Reception

### January 9 (Thursday)

8:30 Registration

9:00-9:15 Greeting

Professor Shunichi Kuroda  
Director of SANKEN, Osaka University

9:20-10:00 **Exploiting Multiscale Surface Heterogeneity in Nano-Biomembrane Interactions for Antibacterial Innovation**

Professor Yan Yu

Department of Chemistry, Indiana University Bloomington, USA

10:00-10:30 **Molecular Architecture and Dynamics of Multidrug Efflux Transporters: A Structural Biology Perspective**

Associate Professor Mikio Tanabe

SBRC, IMSS, High Energy Accelerator Research Organization(KEK)

10:30-10:50 **Development of Novel Therapeutic Strategies to Overcome Bacterial Multidrug Resistance**

Professor Kunihiko Nishino  
SANKEN, Osaka University

10:50-11:10 Break

11:10-11:40 **Design and application of simple acyclic nucleic acids**

Associate Professor Hiromu Kashida

Graduate School of Engineering, Nagoya University

11:40-12:10 **Development of Functional  $\pi$ -Conjugated Molecules: From Nanometer-Scale Single-Molecule Devices to Meter-scale Module**

Professor Yutaka Ie  
SANKEN, Osaka University

12:10-13:30 Lunch

13:30-14:10 **Fundamental and application of subsurface imaging**

Professor Kenjiro Kimura  
Kobe University

14:10-14:40 **Hydrogen control of magnetic properties in magnetic thin films ~toward fusion of spintronics and chemistry~**

Associate Professor Tomohiro Koyama  
SANKEN, Osaka University

14:40-15:00 Break

<b>15:00-15:30</b>	<b>Synchronization in frog choruses examined by audio recordings and mathematical modeling</b>	Associate Professor Ikkyu Aihara Institute of Systems and Information Engineering, University of Tsukuba Associate Professor Ryu Takeda SANKEN, Osaka University
<b>15:30-16:10</b>	<b>Nonverbal synchrony: An application to human-avatar interactions</b>	Associate Professor Ken Fujiwara Department of Psychology, National Chung-Cheng University, Taiwan
16:10-16:30	Group photo & Break	
16:30-18:30	Poster Session	
19:00-21:00	Symposium Banquet	
<b>January 10 (Friday)</b>		
<b>8:45</b>	<b>Registration</b>	
<b>9:00-10:00</b>	<b>Energy transition through small molecule activation</b>	Dr. Thomas Fischer Institute of Inorganic and Materials Chemistry, University of Cologne, Germany
<b>10:00-10:30</b>	<b>Infrared light to energy conversion</b>	Professor Masanori Sakamoto SANKEN, Osaka University
10:30-10:50	Break	
<b>10:50-11:20</b>	<b>Trans-scale structure control of nanofibers by electrodeposition</b>	Assistant Professor Takaaki Kasuga SANKEN, Osaka University
<b>11:20-12:00</b>	<b>Computer simulation study on powder compaction and sintering process of hard materials</b>	Dr. Sota Terasaka Japan Fine Ceramics Center (JFCC)
12:00-13:30	Lunch	
<b>13:30-14:10</b>	<b>How can STM help next-generation semiconductor industry?</b>	Associate Professor Chun-Liang Lin Department of Electrophysics, National Yang Ming Chiao Tung University, Taiwan
<b>14:10-14:40</b>	<b>Construction of Filamentous Virus-Based Functional Materials through Genetic Engineering and Machine Learning</b>	Associate Professor Toshiki Sawada Department of Chemical Science and Engineering, Institute of Science Tokyo
<b>14:40-15:10</b>	<b>Designing heterogeneity in glasses for outstanding properties</b>	Associate Professor Kenji Shinozaki Nanomaterials Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)
<b>15:10-15:30</b>	Award Ceremony and Closing Remarks	
<b>15:30</b>	(For SANKEN members) <b>Depart from Yumebutai by bus</b>	

## Poster Session, January 9, 16:30-18:30

Poster ID	Name	Title
01	Shun Katada	Personalized sentiment estimation using frontal EEG in human-agent interaction
02-S	Kosuke Yamazaki	Prediction of physical properties of amorphous graphene using persistent homology
03-S	Yuto Yashima	First-Principles Calculations of Spin Hall Conductivity of Transition Metal Dichalcogenides
04-S	Sakura Moriyama	Divergent Effects of Olfactory Receptor-Mediated TRPV1 Phosphorylation on Activation by Vanilloid Analogs
05-S	Ryo Tanida	Global analysis of genes regulated by Rof in Salmonella enterica serovar Typhimurium
06	Shinya Yamahira	Cell patterning technology using photo-activatable PEG-lipid for high-throughput analysis of cell-cell interaction
07	Tomonao Hosokai	Drug discovery with ultra-relativistic electron beams in the deep body
08	Jinfeng Yang	Ultrafast diffraction and microscopy with relativistic femtosecond electron pulses
09-S	Kenta Nakanishi	Concept of high-speed proton-driven device materials using perovskite rare-earth nickel oxides
10-S	Hanaka Murakami	Analysis of the activation mechanism of S1P receptors by S1P supply from S1P transporters
11	Yeongjun Seo	Densification of bulk zeolite Li-ABW via cold sintering process and ion removal performance
12	Yoshio Mizuta	Improving residual stresses of additive manufactured Al-Mg-Sc alloy by laser peening
13-S	Hiroya Yasunari	Effect of metal addition on photocatalytic property of peroxo-modified titanate nanotube
14-S	Yuma Amemiya	Effects of Hydrothermal Synthetic Conditions on Characteristic and Lead Removal Property of Hydroxyapatite
15-S	Rubal Sharma	Electrochemical synthesis of single and double hetero[7] dehydrohelicenes
16	Muthu Karuppasamy	Deprotection of acetals with trialkylsilyl chloride ( $R_3SiCl$ )
17	Do Hyung Han	Effect of Sodium Ion Exchange on the Photocatalytic Activity of Layered Peroxo-Titanate
18	Yusuke Fujiwara	Functional transformation of RNA foci induced by photoswitchable RNA-binding molecules
19-S	Shingo Sato	High temporal-spatial resolution Schlieren measurement for LWFA
20	Takayuki Iseki	Simple Estimation of Deflection Angle for Moving-Magnet Type Large Diameter 2D-MEMS Mirror
21-S	Haruka Zaizen	Deposition of $LaNiO_3$ thin film on Si substrate
22-S	Pongpisit Thanasutives	Uncertainty-penalized Bayesian information criterion for parametric partial differential equation discovery

23	Takahito Ohshiro	SingleMolecule Electrical Detection: Insights into Epigenetic Variations through Nano-Gap Tunneling Conductance
24	Chikara Dohno	Synthetic RNA binding ligands for photocontrol of RNA structure and function
25-S	Haruna Nakajima	The descriptor in the negative electrode reaction behaviors of lithium-ion batteries
26	Yoshifumi Kondo	Piezocatalytic hydrogen production over morphology-controlled barium titanates
27-S	Kou Hiraoka	Influence of electrolyte anions on electrode reaction kinetics in lithium-ion batteries
28-S	Hiroki Yoshimura	Ethylene-selective Carbon Dioxide Electrolysis via Cation-induced Intermediates Stabilization
29	Yuri Takada	Development of CBX7-inhibitory peptides through the construction and screening of a peptide library
30-S	Hiroataka Urai	Electric double-layer capacitance on carbon electrodes in concentrated aqueous electrolytes of alkali metal salts
31	Taketoshi Matsumoto	Addressing environmental issues in primary industries such as agriculture, forestry, livestock farming, and fishery.
32-S	Lu Haoyu	Enhancing sound-based sleep quality assessment by multimodal knowledge distillation
33	Shun Ishioka	Thermoforming Nanocellulose Aggregates Through Introducing Ionic Liquid Cations
34-S	Gen Nakagawa	Design and fabrication of middle-range shuttling devices using Si substrates
35-S	Hosumi Sato	Fabrication of gate-defined QD in a Bull's Eye optical cavity towards efficient Photon-Spin conversion
36-S	Taiki Kurose	Research on undoped electron/hole quantum dot light-emitting devices
37-S	Runze Zhao	Total synthesis of Cincassin A1 using Ir-catalyzed asymmetric Tishchenko reaction of acyclic meso-1,4-dialdehyde
38	Xiang Li	The OU-ISIR continuous authentication database comprising face and speech biometrics
39	Chi Xu	The OU-ISIR Multimodal Biometric Database and Its Performance Evaluation
40	Jianhang Zhou	Device-based Cybernetic Avatar Authentication with Graph-based Synthetic Talking-head Video Analysis

**Wi-Fi Access for Participants (Inside Event Hall)**  
**Network : apnn-event**  
**Password : ybt21pev**