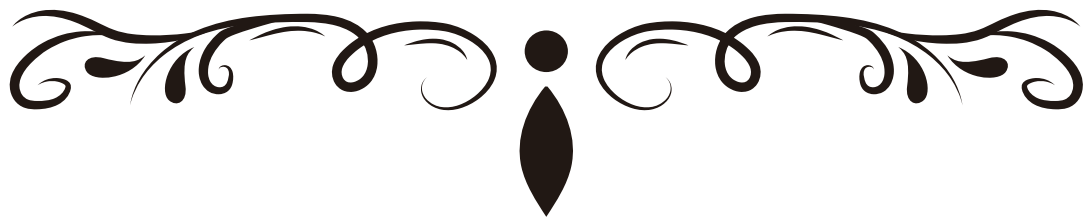




The 22nd SANKEN International Symposium
The 17th SANKEN Nanotechnology International Symposium
Next Generation Science and Technology
for Super Smart Society

January 15th -16th, 2019
Icho Kaikan, Osaka University, Osaka Japan



Preface

On behalf of SANKEN, the Institute of Scientific and Industrial Research of Osaka University, I am very pleased to welcome you to the 22nd SANKEN International Symposium. This year, we are joined with the 17th SANKEN Nanotechnology International Symposium.

SANKEN was founded in 1939 with the aim of promoting basic science for the development of industry. Since then, SANKEN has conducted interdisciplinary research in the field of materials, information, biological science and strengthened the Nanoscience and Nanotechnology field.

This year symposium will focus on cutting edge Science and Technology to contribute coming Super Smart Society (Society 5.0), in which a huge amount of information from sensors in physical space is accumulated in cyberspace, and the big data is analyzed by Artificial Intelligence (AI) in cyberspace. The symposium will share knowledge of development of IoT (Internet of Things), Big data processing, Robotic, AI, etc. and discuss active contribution of new concept IT device, excellent sensors, data science, new materials nanotechnology, bio/molecular technology toward Super Smart Society. With these keyword in mind, we look forward to interdisciplinary discussion unified theme of the symposium.

Finally, I would like to express my sincere thanks to all invited speakers, poster presenters, and participants.



Katsuaki Suganuma,
Director of SANKEN

Program

January 15th (Tuesday)

Registration 8:30-13:00

(9:00 – 11:40 2nd SANKEN JSPS Symposium for the Circulation of Talented Researchers)

11:40 13:00 Welcome Lunch

13:00 13:05 **Opening address**

Prof. Katsuaki Suganuma, Director of ISIR, Osaka University

13:05 13:10 **Welcome address**

Prof. Yasushi Yagi, Executive Vice President, Osaka University

Session 1 IoT for Society 5.0

Chair :Hidekazu Tanaka (ISIR, Osaka University)

13:10 13:50 Prof. Yasushi Yagi, Executive Vice President, Osaka University, Japan

New scientific paradigm through “Datability” and “Initiative for Life Design Innovation”

13:50 14:25 Dr. Hiroyuki Akinaga, AIST, Japan

Resistive Analog Neuromorphic Device: Materials Challenges for Edge AI Computing

14:25 15:00 Assoc. Prof. Yoshihiro Kawahara, The University of Tokyo, Japan

Design of Services and Systems for Society 5.0 Enabled by New Materials and Devices



Yasushi Yagi



Hiroyuki Akinaga



Yoshihiro Kawahara

15:00 15:20 **Coffee Break**

Session 2 Nano-materials & devices for Society 5.0

Chair :Takahiro Kozawa (ISIR, Osaka University)

15:20 16:00 Prof. Jan Vanfleteren, Imec & Ghent University, Belgium

Technology and Applications for 3D Electronics using Industry Compatible Manufacturing Processes

16:00 16:35 Prof. Ken Uchida, The University of Tokyo, Japan

Nanoscale Sensors for Accurate Detection of ppm Level Hydrogen in Air at High Humidity

16:35 17:10 Dr. Eiji Uenaka, Dr. Naoyuki Okamoto, Renatech Co., Ltd., Japan
Development and practical application of novel cancer risk screening system using serum trace elements: Metallo-Balance

17:10 17:30 Assoc. Prof. Toru Sugahara, ISIR, Osaka University, Japan
Gas Sensor Property of Oxide Nano-Structures synthesized by Metal Organic Decomposition Method



Jan Vanfleteren



Ken Uchida



Eiji Uenaka



Naoyuki Okamoto



Toru Sugahara

18:30 20:30 **Banquet at Senri Hanyu Hotel(Jurin-no-ma, East Hall)**

January 16th (Wednesday)

Session 3 Data Science & Technology for Society 5.0

Chair : Takashi Washio (ISIR, Osaka University)

9:10 9:30 Prof. Takashi Washio, ISIR, Osaka University, Japan
Measurement-oriented Machine Learning for Advanced Sensing

9:30 10:05 Prof. Genshiro Kitagawa, The University of Tokyo, Japan
Data Science and Transdisciplinary Research

10:05 10:45 Prof. Saso Dzeroski, Jozef Stefan Institute, Slovenia
Multi-target prediction and semi-supervised learning with predictive clustering

10:45 11:20 Prof. Tamiki Komatsuzaki, Hokkaido University, Japan
How can one bridge information science and measurement science to accelerate the measurements?



Takashi Washio



Genshiro Kitagawa



Saso Dzeroski



Tamiki Komatsuzaki

11:30 13:00 **Poster Session & Coffee Break**

12:00 13:00 **Lunch**

Session 4 Organic/Biology for Society 5.0

Chair : Kunihiko Nihsino (ISIR, Osaka University)

13:00 13:40 Prof. Bartosz, A, Grzybowski, UNIST, South Korea, Polish Academy of Sciences, Poland

Chematica: An “in silico” synthetic chemist for the XXI century.

13:40 14:15 Dr. Tomonobu Watanabe, RIKEN, Japan

Propose of cellular fingerprinting: a challenge to prediction of gene-expression from Raman scattering spectrum

14:15 14:50 Dr. Mikio Tanabe, KEK, Japan

Structural Insights into the conformational switching mechanism of a multidrug/proton efflux transporter

14:50 15:10 **Coffee Break**

15:10 15:30 Prof. Kunihiko Nishino, ISIR, Osaka University, Japan

Regulation of a bacterial multidrug efflux system involved in multidrug and bile resistance



Bartosz, A, Grzybowski



Tomonobu Watanabe



Mikio Tanabe



Kunihiko Nishino

Session 5 Society 5.0 for the Future

Chair : Kunihiko Nihsino (ISIR, Osaka University)

15:30 16:10 Director, Kip Stringfellow, Strategic Relations, Singularity University, USA
Smart Cities of the Future



Kip Stringfellow

16:10 16:15 **Poster Award Ceremony and Closing Remarks**

Poster Presentation

- P1: Mutational analysis of the inhibitor-binding pit of the efflux transporter MexB**
Naoki Koga^a, Seiji Yamasaki^{b, c}, Keisuke Sakurai^d, Ryosuke Nakashima^d, Akihito Yamaguchi^d, Kunihiro Nishino^{b, c}
a: Sch. Pharm. Sci., Osaka University, Japan
b: Grad. Sch. Pharm. Sci., Osaka University, Japan
c: Dept. Biomolecular Science & Regeneration, Osaka University, Japan
d: Lab. Cell Membrane Structural Biology, ISIR, Osaka University, Japan
- P2: Catalytic Asymmetric Synthesis of Cedarmycins Using Chiral Iridium Complex**
Takeyuki SUZUKI^a, Ismiyanto^a, Naoki KISHI^b, Yuki ADACHI^a, Da-yang ZHOU^a, Kaori ASANO^a, Yasushi OBORA^b, Hiroaki SASAI^a
a: The Institute of Scientific and Industrial Research (ISIR), Osaka University, Japan
b: Faculty of Chemistry, Materials and Bioengineering, Kansai University, Japan
- P3: The characterization and application of nanopaper capacitor**
Takaaki KASUGA^a, Kojiro UETANI^b, Hirotaka KOGA^b, Masaya NOGI^b
a: Graduate School of Engineering, Osaka University, Japan
b: The Institute of Scientific and Industrial Research, Osaka University, Japan
- P4: The OU-ISIR Gait Database Comprising the Large Population Dataset with Age and Performance Evaluation of Age Estimation**
Chi Xu^{a, b}, Yasushi Makihara^b, Gakuto Ogi^b, Xiang Li^{a, b}, Yasushi Yagi^b, and Jianfeng Lu^a
a: Nanjing University of Science and Technology, China
b: Institute of Scientific and Industrial Research, Osaka University, Japan
- P5: Electrical conductivity and optical bandgap of carbonized cellulose nanofiber papers**
Daiki FUKUSHIMA^a, Kazuki NAGASHIMA^b, Tsunaki TAKAHASHI^b, Takeshi YANAGIDA^b, Yuta NISHINA^c, Kojiro UETANI^d, Masaya NOGI^d, Hirotaka KOGA^d
a: Graduate School of Engineering, Osaka University, Japan
b: Institute for Materials Chemistry and Engineering, Kyushu University, Fukuoka, Japan
c: Research Core for Interdisciplinary Science, Okayama University, Okayama, Japan
d: The Institute of Scientific and Industrial Research, Osaka University, Japan
- P6: Analysis of Band-Structure of Nanocrystalline Si Layer for High Efficiency Si Solar Cells**
Yuya Onitsuka^{a, b, c}, Kentaro Imamura^{a, b}, Hikaru Kobayashi^{a, b}
a: Institute of Scientific and Industrial Research, Osaka University, Japan
b: JST-CREST, Japan Science and Technology Agency, Japan
c: JSPS Research Fellow, Japan Society for the Promotion of Science, Japan
- P7: Surface structure chemical transfer method to fabricate low reflectance and low interface state density multi-Si with fixed abrasive machining**
Shogo KUNIEDA^a, Kentaro IMAMURA^a, Hikaru KOBAYASHI^a
a: ISIR, Osaka University, Japan
- P8: Toward spatiotemporally-scalable Ca²⁺ imaging with a bimodal indicator**
Israt FARHANA^a, Kazushi SUZUKI^a, Tomoki MATSUDA^{a, b}, and Takeharu NAGAI^{a, b}
a: Department of Biotechnology, Graduate School of Engineering, Osaka University, Japan
b: Department of Biomolecular Science and Engineering, The Institute of Scientific and Industrial Research (ISIR), Osaka University, Japan
- P9: Light-mediated direct heating of gold nanoparticles anchored within cellulose paper for catalytic applications**
Yintong HUANG^a, Kojiro UETANI^b, Masaya NOGI^b, Hirotaka KOGA^b
a: Graduate School of Engineering, Osaka University, Japan
b: The Institute of Scientific and Industrial Research, Osaka University, Japan

- P10: Synthesis and photoluminescence properties of polymer dots doped with iridium complexes**
Zuoyue Liu^a, Yasuko Osakada^{a, b}
a: Institute of Scientific and Industrial Research, Osaka University, Japan
b: Institute for Advanced Co-Creation Studies, Osaka University, Japan
- P11: Direct detection of the electron-phonon matrix element in graphite via High-resolution electron energy loss spectroscopy**
Shin-ichiro TANAKA^a, F.C. BOCQUET^b, F. S. TAUTZ^b
a: ISIR, Osaka Univ, Japan
b: PGI-3 Forschungszentrum Jülich, Germany
- P12: Ultrafine Structure on Si Induced by THz-FEL**
Akinori IRIZAWA^a, Shigemasa SUGA^a, Takeshi NAGASHIMA^b, Atsushi HIGASHIYA^b, Masaki HASHIDA^c, Shuji SAKABE^c
a: Institute of Science and Industrial Research, Osaka University, Japan
b: Faculty of Science and Engineering, Setsunan University, Japan
c: Advanced Research Center for Beam Science, Institute for Chemical Research, Kyoto
- P13: 2D porphyrin covalent organic nanosheets for photocatalytic hydrogen evolution**
Zeyu Fan^a, Kota Nomura^a, Yasuko Osakada^{a, b}
a: Institute of Scientific and Industrial Research, Osaka University, Japan
b: Institute for Advanced Co-Creation Studies, Osaka University, Japan
- P14: Relativistic-pulse Electron Microscopy**
Jinfeng YANG^a, Yoichi YOSHIDA^a, Hidehiro YASUDA^b
a: The Institute of Scientific and Industrial Research, Osaka University, Japan
b: Research Center for Ultra-high Voltage Electron Microscopy, Osaka University, Japan
- P15: Construction and Performance Evaluation of the OU-ISIR Large Population Gait Database with Real-life Carried Object**
Md. Zasim Uddin^a, Thanh Trung Ngo^a, Yasushi Makihara^a, Noriko Takemura^b, Xiang Li^{a, c}, Daigo Muramatsu^a, Yasushi Yagi^a
a: ISIR, Osaka University, Japan
b: IDS, Osaka University, Japan
c: Nanjing University of Science and Technology, China
- P16: Pulse radiolysis and gamma radiolysis studies on formation process of nanoparticles in organics-free platinum colloidal solution**
Miou Kariya^a, Yusa Muroya^a, Kazushige Ishida^b, Yoichi Wada^b, Tsuyoshi Ito^b, Nobuyuki Ota^c, Takahiro Kozawa^a
a: ISIR, Osaka Univ., Japan
b: Res. Develop. Gr, Hitachi Ltd., Japan
c: Hitachi-GE Nucl. Energy, Ltd., Japan
- P17: Ps and ns pulse radiolysis studies on radiation-induced primary process of ligands of metal resists**
Teppei Yamada^a, Satoshi Ishihara^a, Hiroki Yamamoto^b, Yusa Muroya^a, Yoshitaka Komuro^c, Daisuke Kawana^c, Akiyoshi Yamazaki^c, Shinichi Yamashita^d, Takahiro Kozawa^a
a: ISIR, Osaka Univ., Japan
b: QST, Japan
c: Tokyo Ohka Kogyo Co., Ltd., Japan
d: School of eng., Univ. Tokyo. Japan
- P18: Learning to Recover High-resolution Signals**
Satoshi Hara^a
a: Institute of Scientific and Industrial Research, Osaka University, Japan

P19: Learning Graph Representation via Formal Concept Analysis

Yuka Yoneda^a, Mahito Sugiyama^b, Takashi Washio^a

a: The Institute of Scientific and Industrial Research, Osaka University, Japan

b: National Institute of Informatics

P20: Growth and characterization of VO₂ thin films on hexagonal boron nitride

Shingo GENCHI^a, Koji SHIGEMATSU^b, Shodai ARITOMI^b, Mahito YAMAMOTO^a, Teruo KANKI^a, Kenji WATANABE^c, Takashi TANIGUCHI^c, Yasukazu MURAKAMI^b, Hidekazu Tanaka^a

a: The Institute of Scientific and Industrial Research, Osaka University, Japan

b: Department of Applied Quantum Physics and Nuclear Engineering, Graduate School of Engineering, Kyusyu University, Japan

c: Advanced Materials Laboratory, National Institute for Materials Science, Japan

P21: Creation of VO₂ resistance modulation device dependent on crystal orientation using strain effect by electrostatic force

Fumiya Endo^a, Teruo Kanki^{a, b}, Luca Pellegrino^c, Nicola Manca^d, Daniele Marré^{c, d}, Hidekazu Tanaka^{a, b}

a: ISIR, Osaka Univ. Japan

b: CSRN, Osaka Univ., Japan

c: CNR-SPIN, Italy

d: University of Genova, Italy

P22: In-plane strain analysis of β-FeSi₂(100) nano-film on a Si(001) substrate using by X-ray diffraction mapping

Shohei TAKEMOTO^a, Masaaki SOMETA^b, Ken HATTORI^b, Azusa N. HATTORI^a, Hidekazu TANAKA^a and Hiroshi DAIMON^b

a: The Institute of Scientific and Industrial Research, Osaka University, Japan

b: Graduate School of Materials Science, Nara Institute of Science and Technology, Japan

P23: Introduction about Nanotechnology Open Facilities, Osaka University

Akira Kitajima^a, Kimihiro Norizawa^a

a: Nanotechnology Open Facilities, Osaka University, Japan

P24: Color thickness identification of hexagonal boron nitride supported on a transfer polymer

Yuto ANZAI^a, Mahito YAMAMOTO^a, Teruo KANKI^a, Kenji WATANABE^b, Takashi TANIGUCHI^b, Hidekazu TANAKA^a

a: ISIR, Osaka Univ., Japan

b: NIMS, Japan

P25: Optical control of structural transformation to form nano-scaled order phases including sp³-like interlayer bonds in graphite

Eiichi Inami^a, Keita Nishioka^b, Jun'ichi Kanasaki^a, Katsumi Tanimura^a

a: The Institute of Scientific and Industrial Research, Osaka University, Japan

b: Department of Physics, Chuo University, Japan

P26: Characterization of CH₃NH₃PbI_{3-x}Cl_x Films Added with Ammonium Halides for Photoelectric Device Application

Yasuhiro Shirahata^a

a: Center for Energy and Environmental Science, Shinshu University, Japan

P27: Development of a photoswitchable fluorescent protein for nanoscopy

Shusaku Uto^a, Tetsuich Wazawa^b, Takeharu Nagai^{a, b}

a: Graduate School of Engineering, Osaka University, Japan

b: The Institute of Scientific and Industrial Research, Osaka University, Japan

- P28: Fabrication of NdNiO₃ film with controlled Ni/Nd ratio by PLD technique**
Takashi Yamanaka^a, A. N. Hattori^a, H. Tanaka^a
a: ISIR, Osaka University, Japan
- P29: Detection of photo-excited Spins in a (110)-GaAs/AlGaAs QW by using inverse Spin Hall Effect**
Tomoki Chatani^a, Tomohiro Nakagawa^a, Julian Ritzmann^b, Arne Ludwig^b, Andreas Wieck^b, Yuji Sakai^a, and Akira Oiwa^a
a: ISIR, Osaka University, Osaka, Japan
b: Angewandte Festkörperphysik, Ruhr-Universität Bochum, Germany
- P30: Generation of inventive genetically modified chemiluminescent plants by using a potent new generation luciferase**
Quang Tran^a, Kenji Osabe^a, Takeharu Nagai^a
a: The Institute of Scientific and Industrial Research, Osaka University, Japan
- P31: Measurement of Thermal Diffusivity Response to External Forces for Bulk Materials**
Shogo IZAKURA^a, Kojiro UETANI^b, Hirotaka KOGA^b, Masaya NOGI^b
a: Graduate School of Engineering, Osaka University, Japan
b: The Institute of Scientific and Industrial Research, Osaka University, Japan
- P32: Drying Mechanism of Cellulose Nanopapers under Evaporation-Condensation Process**
Kojiro UETANI^a, Shogo IZAKURA^b, Takaaki KASUGA^b, Hirotaka KOGA^a, Masaya NOGI^a
a: The Institute of Scientific and Industrial Research, Osaka University, Japan
b: Graduate School of Engineering, Osaka University, Japan
- P33: Structural and Magneto-optical characterizations of GaN/TbN superlattice structures grown by PA-MBE**
Sanshiro FUJIMORI^a and Shigehiko HASEGAWA^a
a: The Institute of Scientific and Industrial Research, Osaka University, Japan
- P34: Electronic resistivity modulation by proton control using an electric field effect in HVO₂-FET structures**
Keita Muraoka^a, Teruo Kanki^{a, b}, Takafumi Uemura^a, Tsuyoshi Sekitani^a, Hidekazu Tanaka^{a, b}
a: ISIR, Osaka Univ. Japan
b: CSRN, Osaka Univ., Japan
- P35: A reversibly photoconvertible chemiluminescent protein for bioimaging with high depth resolution**
Yuhei Ogami^{a, b}, Mitsuru Hattori^{a, b}, Takeharu Nagai^{a, b}
a: The Institute of Scientific and Industrial Research, Osaka University, Japan
b: Graduate School of Engineering, Osaka University, Japan
- P36: Toward photoacoustic bioimaging with a chromoprotein**
Yoshimasa IKE^a, Tetusichi WAZAWA^b, Tomoki MATSUDA^{a, b}, Takeshi NAMITA^c, Tsuyoshi SHINA^c, Takeharu NAGAI^{a, b}
a: Graduate School of Engineering, Osaka University, Japan
b: The Institute of Scientific and Industrial Research, Osaka University
c: Graduate school of Medicine, Kyoto University, Japan
- P37: Wrapping Si nanopowder in Graphite Sheets and Improvement of Cyclability of Si Anode in Li Ion Batteries**
Taketoshi MATSUMOTO^a, Taichi OSATO^a, Jaeyoung CHOI^a, Hikaru KOBAYASHI^a
a: ISIR, Osaka University, Japan

- P38: PU classification learning method and its extension for measurement noise reduction**
Takeshi Yoshida, Takashi Washio, Takahito Ohshiro, Masateru Taniguchi
a: The Institute of Scientific and Industrial Research, Osaka University, Japan
- P39: Enhancement of resistive modulation in nano-convex VO₂ FET**
Yoshihide Tsuji^a, Teruo Kanki^{a, b}, Takafumi Uemura^a, Tsuyoshi Sekitani^a, Hidekazu Tanaka^{a, b}
a: ISIR, Osaka Univ. Japan
b: CSRN, Osaka Univ., Japan
- P40: The ABC-Type Efflux Pump MacAB Influence Virulence in Salmonella enterica serovar Typhimurium**
Sohei Nakano^{a, b}, Ami Yamagishi^{a, c}, Seiji Yamasaki^{a, b, c}, Kunihiko Nishino^{a, b, c}
a: Institute of Scientific and Industrial Research, Osaka University, Japan
b: School of Pharmaceutical Sciences, Osaka University, Japan
c: Graduate School of Pharmaceutical Sciences, Osaka University, Japan
- P41: Functional analysis of serine proteinase involved in biosynthesis of active-site subunit of quinoxinoprotein amine dehydrogenase**
Toshinori Oozeki^a, Tadashi Nakai^b, Katsuyuki Tanizawa^a, Toshihide Okajima^a
a: Institute of Scientific and Industrial Research, Osaka University, Japan
b: Department of Food Sciences and Biotechnology, Faculty of Life Sciences, Hiroshima
- P42: 1,3-Di(quinolin-2-yl)guanidine binding to C9orf72 GGCCCC repeat DNA in ALS/FTD**
Eitaro Murakami, Tomonori Shibata, Kazuhiko Nakatani
a: The Institute of Scientific and Industrial Research, Osaka University, Japan
- P43: Magnetic and magneto-optical properties of GaN/GdN superlattice structures grown by PA-MBE**
Okamoto Akifumi^a, Sugeta Yoshihito^a, Hasegawa Shigehiko^a
a: The Institute of Scientific and Industrial Research, Osaka University, Japan
- P44: Study of Binding Small Molecular for DNA mismatching site with Molecular Dynamics Simulation approach**
Koichi Miyagawa, Mitsuo Shoji, Kazuhiko Nakatani, Yasuteru Shigeta, Kizashi Yamaguchi
a: The Institute of Scientific and Industrial Research, Osaka University, Japan
- P45: A contact resistance and noise amount evaluation method for wearable EEG sensors**
Misaki Inaoka^{a, b}, Shintaro Izumi^a, Shunsuke Yoshimoto^{a, c}, Toshikazu Nezu^a, Yuki Noda^a, Teppei Araki^a, Takafumi Uemura^{a, b}, and Tsuyoshi Sekitani^{a, b}
a: The Institute of Scientific and Industrial Research, Osaka University, Osaka, Japan
b: AIST-Osaka University Advanced Photonics and Biosensing Open Innovation Laboratory, AIST, Photonics Center, Osaka University, Osaka, Japan
c: PGV Inc., Tokyo, Japan.
- P46: TV commercial and emotion recognition using physiological data**
Taweesak EMSAWAS^a, Ken-ichi FUKUI^b, Masayuki NUMAO^b
a: Graduate School of Information Science and Technology, Osaka University, Japan
b: The Institute of Scientific and Industrial Research (ISIR), Osaka University, Japan

- P47: Efficient Optimization of Enantioselective Domino Reaction Based on Bayesian Optimization**
H. D. P. Wathsala^a, Masaru Kondo^a, Makoto Sako^a, Satoshi Hara^a, Kazunori Ishikawa^a, Takayuki Takaai^a, Shinobu Takizawa^a, Takashi Washio^a, and Hiroaki Sasai^a
a: The Institute of Scientific and Industrial Research (ISIR), Osaka University
- P48: Re-investigation of radiation induced reaction of carbon tetrachloride**
Masao GOHDO^a, Takafumi KONDOH^a, Kazuki ARAKI^a, Koichi KAN^a, Jinfeng YANG^a, Yoichi YOSHIDA^a
a: The Institute of Scientific and Industrial Research, Osaka University, Japan
- P49: Single-electron charge sensing in self-assembled quantum dots**
Haruki Kiyama^a, Alexander Korsch^b, Naomi Nagai^c, Yasushi Kanai^a, Kazuhiko Matsumoto^a, Kazuhiko Hirakawa^c, and Akira Oiwa^a
a: The Institute of Scientific and Industrial Research, Osaka University, Japan
b: Lehrstuhl für Angewandte Festkörperphysik, Ruhr-Universität Bochum, Germany
c: Institute of Industrial Science, The University of Tokyo, Japan
- P50: Establishment of the cell line expressing signal transduction proteins for olfactory receptors: toward a comprehensive sensing of odorants**
Kenji Tatematsu^a, Miyo Nakamura^a, Tomoko Yamazaki^{a, b}, Shun'ichi Kuroda^a
a: Institute of Scientific and Industrial Research, Japan
b: Komi-hakko Corp., Japan
- P51: Antiaromatic character of cycloheptatriene-bis-annelated indenofluorene**
Keitaro YAMAMOTO^a, Yoshio ASO^a, Yutaka IE^a
a: ISIR, Osaka University, Japan
- P52: Electronic structures of alkali metals (Li, Na, K and Rb)-incorporated formamidinium lead halide perovskite compounds**
Atsushi SUZUKI and Takeo OKU
a: Department of Materials Science, The University of Shiga Prefecture, Japan
- P53: Effects of decaphenylcyclopentasilane addition on photovoltaic properties of perovskite solar cells**
Masaya Taguchi^a, Atsushi Suzuki^a, Takeo Oku^a, Sakiko Fukunishi^b, Satoshi Minami^b, and Masanobu Okita^b
a: Department of Materials Science, The University of Shiga Prefecture, Japan
b: Frontier Materials Laboratories, Osaka Gas Chemicals Co., Ltd., Japan
- P54: A novel micron-sized Ag paste for realizing pressurless Ag sinter joining on different surface finishes**
Zheng Zhang, Chuantong Chen and Katsuaki Suganuma
a: ISIR, Osaka University, Japan
- P55: Stability Characterization of Pbl₂-Added CH₃NH₃Pbl_{3-x}Cl_x Photovoltaic Devices**
Naoki Ueoka and Takeo Oku
a: Department of Materials Science, The University of Shiga Prefecture, Japan
- P56: Electrically Assisted Room-Temperature Crack Healing of Ceramic-Based Composites**
Shengfang SHI^a, Tomoyo GOTO^a, Sunghun CHO^a, Tohru SEKINO^a
a: The Institute of Scientific and Industrial Research, Osaka University, Japan

**2nd SANKEN JSPS Symposium for the Circulation of Talented Researchers
“Global Networking on Molecular Technology Research”
Poster Session**

**BC-1: First-principles study of topological interface states in the natural heterostructure
(PbSe)₅(Bi₂Se₃)₆**

Hiroyoshi Momida (ISIR, Osaka University)

BC-2: Emergent photovoltaic effect in low-dimensional transition-metal dichalcogenides

Yijin Zhang (ISIR, Osaka University)

**BC-3: Fluorinated naphtho[1,2-c:5,6-c']bis[1,2,5]thiadiazole: New electron-accepting
units for organic semiconductors**

Yutaka Ie (ISIR, Osaka University)

BC-4: High-power terahertz source using small accelerator

Koichi Kan (ISIR, Osaka University)

BC-5: Word Segmentation from Phneme Sequences Exploiting Subword Information

Ryu Takeda (ISIR, Osaka University)

**BC-6: In-situ ETEM study of iron oxide during redox processes in atmospheric
pressure gas environments**

Ryotaro Aso (ISIR, Osaka University)

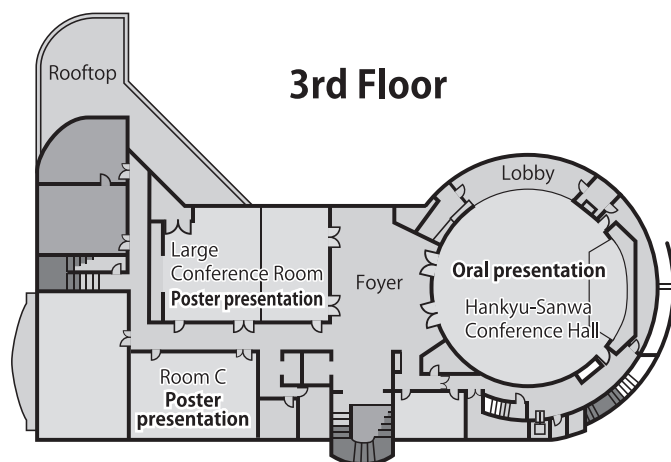
Information for Participants

General Information for participants

• Rooms

Oral presentation: Hankyu-Sanwa Conference Hall (3F Icho kaikan)

Poster Presentation: Large Conference Room and Room C (3F Icho kaikan)



• Banquet : Senri Hankyu Hotel (East Hall, Jurin-no-ma)

A shuttle bus for the Banquet place is available.

The bus will depart at 17:30 from the entrance of the Icho-kaikan

• The symposium web site

<https://www.netroom.sanken.osaka-u.ac.jp/SYMPO2018/#>

Instruction for Poster presenters

1. Size and Set-up/Removal

Size: 900mm width X 2100mm height

Set up: Jan. 15th, before Coffee break (15:00)

Removal: Jan. 16th, at the end of poster session.

2. Poster Presentations

Jan 16th 11:30 to 13:00

You are required to be in front of your poster during the time assigned above.

The best poster prizes will be awarded to several (the first 10% of the total candidates) poster presentations. The awards will be presented at the end of the symposium.

