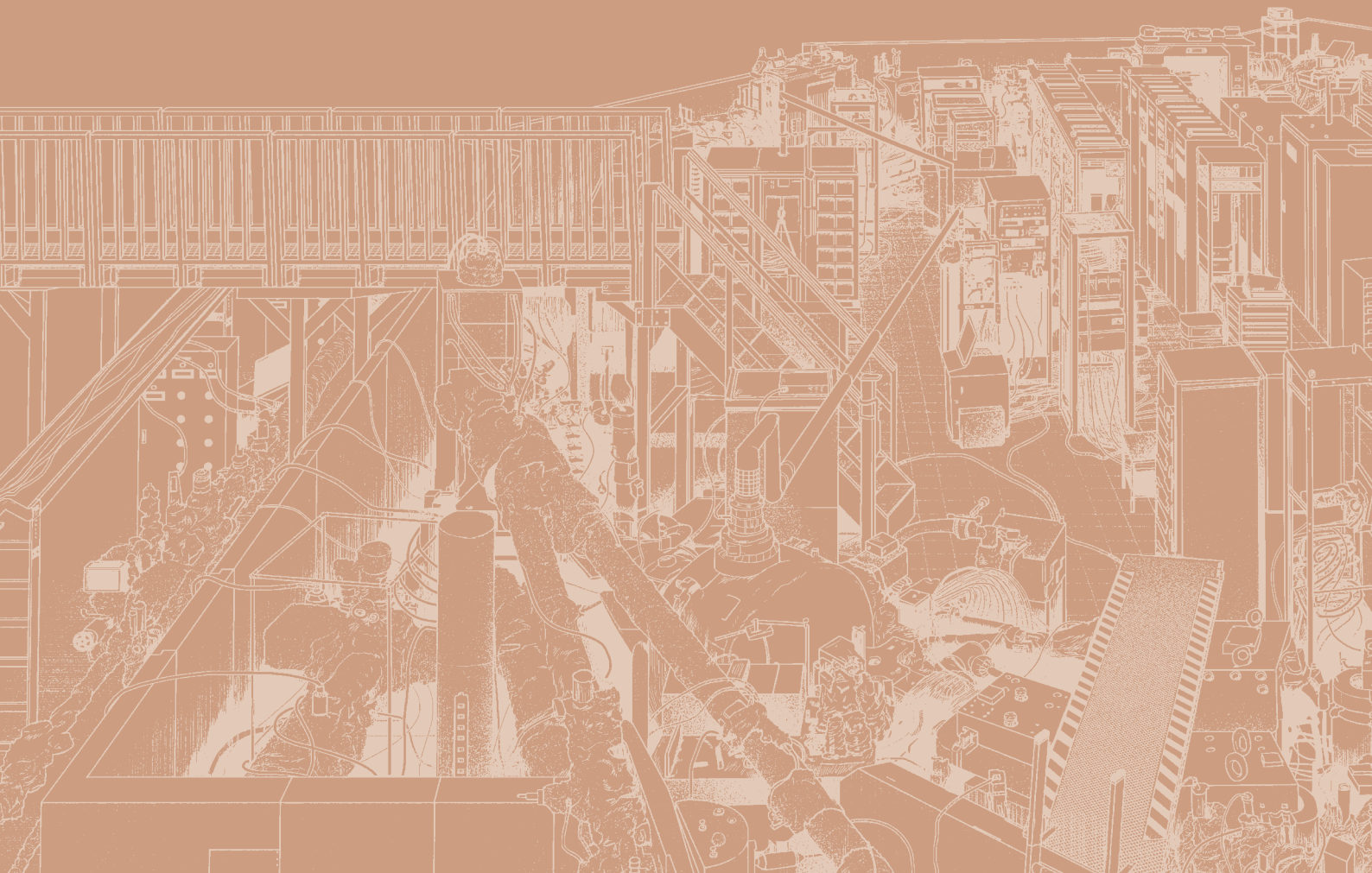
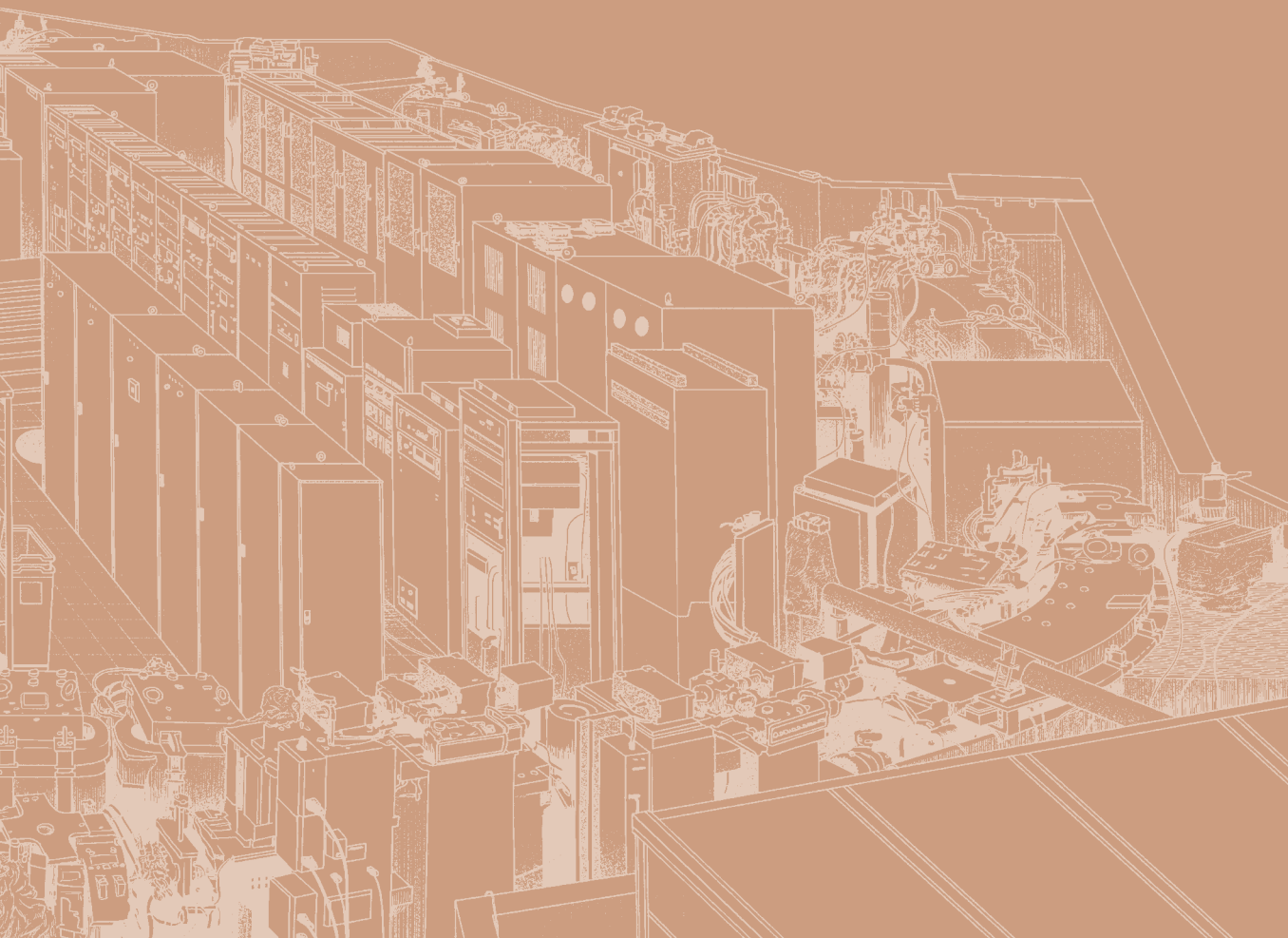




Workshops





## UVSOR 40th Commemorative Lecture and Ceremony

Date: December 1st, 2023.

Venue: Okazaki Conference Center

14:00 – 14:10	Opening, Address by Distinguished Guests <b>Takashi Nishiyama</b> (Basic Research Promotion Division, Research Promotion Bureau, MEXT)
14:10 – 17:40	Commemorative Lecture <b>Satoshi Kera</b> (Director of UVSOR, IMS) The Current Status and Future of the UVSOR Facility <b>Tatsuo Kaneyasu</b> (SAGA Light Source) New Light and Its Applications <b>Hikaru Takaya</b> (Teikyo University of Science) Advanced Chemical Applications of Synchrotron Radiation Measurements: Materials Science with Soft X-rays
15:40 – 16:10	Break / Photo <b>Shin-ichi Adachi</b> (President of JSSRR, KEK) Current Status and Future Prospects of Synchrotron Radiation Science in Japan <b>Masaki Takata</b> (Photon Science Innovation Center) NanoTerasu: To be a must-have facility, not a nice-to-have one <b>Nobuhiro Kosugi</b> (Director of Institute of Materials Structure Science) Reflecting on UVSOR's Strategies: A Retrospective
17:40 – 17:50	Break
17:50 – 20:00	Commemorative Ceremony Congratulatory remarks by the honorable Shuhei Aoyama, Member of the House of Representatives

# UVSOR Symposium 2023

Date: December 2-3, 2023

Place: Okazaki Conference Center (face-to face), Zoom (online)

## December 2 (Sat.)

- 09:00 – 09:05      Opening remarks  
**H. Iwayama** (UVSOR)
- < Session 1 >
- 09:05 – 09:15      Facility operation policy for FY2024  
**S. Kera** (UVSOR Director)
- 09:15 – 09:35      Observation of tandem undulator radiation by a single electron  
**Y. Asai** (Hiroshima Univ.)
- 09:35 – 10:05      [Invited Lecture] Linear and nonlinear X-ray spectroscopies utilizing microbeam  
**M. Horio** (Univ. of Tokyo)
- Break Time
- 10:25 – 10:55      [Invited Lecture] Exploring nano properties in deep-sea hydrothermal vents: clues to life's origins  
**H.E. Lee** (RIKEN)
- 10:55 – 11:15      Observation of nodal metal in the underdoped triple-layer cuprate Bi2223 by using high-resolution ARPES  
**S. Ideta** (Hiroshima Univ.)
- 11:15 – 11:35      Comprehensive photoelectron spectroscopy by SX-VUV dual beam momentum microscope  
**F. Matsui** (UVSOR)
- 11:35 – 12:10      Short Presentation for Poster Session
- < Special Session: Development of Photonics in Bioscience >
- 13:00 – 13:05      Aims of the session  
**S. Kera** (UVSOR Director)
- 13:05 – 13:20      Soft X-ray bio-imaging: current status and future perspective  
**T. Araki** (UVSOR)
- 13:20 – 13:50      Interdisciplinary research initiative “life-saving early diagnosis and prevention technologies” created by integrated photon science  
**K. Misawa** (Tokyo Univ. of Agriculture and Tech.)
- 13:50 – 14:20      Wavefront control of laser beams for advanced multiphoton microscopy  
**T. Nemoto** (ExCELLS)
- 14:20 – 14:50      An introduction of collaboration studies using light in Trans-Scale Biology Center  
**Y. Kamei** (NIBB)
- 14:50 – 15:20      New trend in life science research opened by the trans-scale scope  
**T. Nagai** (Osaka Univ.)

- Break Time
- 15:35 – 16:05 Development of soft X-ray microscopic techniques using synchrotron radiation light sources and its application to cellular imaging  
**T. Kimura** (Univ. of Tokyo)
- 16:05 – 16:20 Bioimaging using contact X-ray microscopy  
**H. Iwayama** (UVSOR)
- 16:20 – 16:35 Present and future of biological research using soft X-ray absorption spectroscopy  
**M. Nagasaka** (IMS)
- 16:35 – 17:05 Synchrotron radiation chiral spectroscopy and biomolecules in the vacuum-ultraviolet region  
**K. Matsuo** (Hiroshima Univ.)
- 17:05 – 17:35 Impact of interfacial water on the functionality of materials surface  
**Y. Harada** (Univ. of Tokyo)
- Break Time
- 17:40 – 18:10 Panel Discussion  
Chair: **T. Araki** (UVSOR)
- 18:20 –  
– 20:00 Poster Session  
Opinion exchange meeting

### **December 3 (Sun.)**

<Session 2>

- 09:00 – 09:30 [Invited Lecture] Time-resolved X-ray spectroscopic techniques for study of photochemical reaction dynamics  
**S. Nozawa** (IMSS)
- 09:30 – 09:50 Functional visualization of active tread rubber by STXM  
**F. Kaneko** (Sumitomo Rubber Industries, Ltd.)
- Break Time
- 10:10 – 10:30 Effect of particle size on the gamma-ray induced positron annihilation lifetime of CeO<sub>2</sub>  
**S. Dohshi** (ORIST)
- 10:30 – 10:50 Evaluation of impacts of intermolecular interaction on magnetic coupling at organic-inorganic hybrid interface  
**H. Ono** (Nagoya Univ.)
- 10:50 – 12:00 UVSOR USERS' UNION meeting

## Poster Session

- P01 Generation of Flat-Laser Compton Scattering Gamma-ray Beam for Multi-Isotope Imaging in UVSOR-III  
**H. Zen** (Kyoto Univ.)
- P02 Q-scan measurement for the extraction beam from UVSOR booster synchrotron  
**E. Salehi** (IMS-UVSOR)
- P03 Photoelectron wave packet interference by double-pulsed XUV synchrotron radiation  
**T. Kaneyasu** (SAGA Light Source)
- P04 Development of time- and spin-resolved electron scattering measurement (TSR-rEELS and -RHEED)  
**K. Nishihara** (Osaka Univ.)
- P05 Study of optical properties of ternary compound crystal  $\text{CsAg}_2\text{I}_3$  containing  $\text{Ag}^+$  ions  
**S. Ibuki** (Osaka Metropolitan Univ.)
- P06 Operando XAFS measurement of Ni and Fe water splitting catalysts functioning in carbonate buffer solution  
**K. Hori** (Yamaguchi Univ.)
- P07 Angle-resolved photoemission study of layered MAX phase compound  $\text{Zr}_2\text{SnC}$   
**M. Mita** (Nagoya Univ.)
- P08 Angle-resolved photoemission spectroscopy of chiral molecular thin films on  $\text{WS}_2$  monolayer  
**F. Nishino** (IMS)
- P09 Development of a uniaxial pressure cell for infrared and ARPES measurements  
**H. Ishida** (Osaka Univ.)
- P10 Electronic structure analysis of 2D Metal-Phosphorus network on Au(111)  
**N. Maejima** (Rikkyo Univ., IMS)
- P11 Anisotropic vibrational states in dinaphtho[2,3-b:2',3'-f]thieno[3,2-b]thiophene single crystals  
**K. Yamauchi** (Tokyo University of Science)
- P12 Effect of Sb Doping on  $\text{Mg}_2\text{Sn}$  Crystals Studied by GiPALS Experiment  
**T. Sumi** (Yamagata Univ.)
- P13 A Novel Idea for Identifying Hydrated Water in Soft X-ray Absorption Spectra of Acetone Aqueous Solution  
**C. Sugahara** (Hiroshima Univ.)
- P14 Angle-resolved photoemission spectroscopy of lithium solid electrolytes  $\text{Li}_3\text{xLa}_{2/3}\text{xTiO}_3$  bulk single crystal  
**S. Koyama** (Nagoya Univ.)
- P15 Angle-resolved photoemission study of layered MAB phase compound  $\text{MoAlB}$   
**K. Kawano** (Nagoya Univ.)
- P16 Atomic resolution holography excited by electron beam  
**H. Daimon** (Toyota Physical and Chemical Research Institute, IMS)
- P17 Synchrotron-radiation infrared microscopy analysis of persistent biomaterials  
**T. Kawasaki** (KEK)
- P18 Electron structure of epitaxial  $\text{YbSb}(001)$  thin film revealed by ARPES  
**Y. Chen** (Osaka Univ.)
- P19 Towards the microscopic anatomy of an anhydrobiotic tardigrade  
**M. Yagi** (Nagoya City University)

- P20 Impact of weak interaction on electronic state of pentacene/graphite interface  
**Y. Hasegawa** (IMS)
- P21 Temperature-dependence of the electronic structure of organic single crystal rubrene  
**K. Fukutani** (IMS)
- P22 Gamma-ray-induced positron annihilation spectroscopy at UVSOR-III BL1U  
**Y. Taira** (IMS-UVSOR)
- P23 Extensive Potential of Spin and Momentum Resolved Photoelectron Microscopy (SP-3D-PMM)  
**S. Suga** (Osaka Univ.)
- P24 Heavy-fermion in a mono-atomic layer YbCu<sub>2</sub>/Cu(111)  
**H. Sugihara** (Osaka Univ.)
- P25 Soft X-ray Absorption Spectroscopy of Hemoprotein  
**Y. Sugimoto** (IMS)
- P26 Development of Resonant Soft X-ray Scattering  
**H. Iwayama** (IMS-UVSOR)
- P27 Effects of quantum charge fluctuations on the electron self-energy of high-T<sub>c</sub> cuprate superconductors using angle-resolved photoemission and inverse photoemission spectroscopy  
**Y. Onishi** (Hiroshima Univ.)
- P28 High-resolution angle-resolved photoemission spectroscopy of the heavily overdoped Bi2201 : Evaluation of the electronic state symmetry  
**Y. Miyai** (Hiroshima Univ.)
- P29 Re-examination of the phase diagram of the high-T<sub>c</sub> cuprate superconductor Bi<sub>2</sub>Sr<sub>2</sub>CaCu<sub>2</sub>O<sub>8+δ</sub> studied by ARPES  
**Y. Tsubota** (Hiroshima Univ.)
- P30 Atomic-orbital analysis of Au(111) by normal incidence photoelectron momentum microscopy  
**K. Hagiwra** (IMS-UVSOR)
- P31 Inferring orientation of single molecule magnets in C<sub>80</sub> fullerenes with temperature change  
**R. Sagehashi** (IMS)

## IMS workshop “Seeds and Needs for Tomorrow’s Synchrotron Radiation Photoelectron Spectroscopy Research”

Date: July 29-30, 2023

Place: Okazaki Conference Center

### **July 29<sup>th</sup> (Sat.)**

13:00 – 13:20 Reception

13:20 – 13:30 Opening

<Session 1: Deepening of condensed matter physics Chair: **K. Tanaka** (IMS-UVSOR)>

13:30 –

**【Invited】** ARPES Studies and Its Developments at HiSOR: Towards HiSOR-II Projects  
**S. Ideta** (Hiroshima Univ.)

**【Invited】** Intercalation-driven Superconductivity in Graphene  
**S. Ichinokura** (Tokyo Inst Tech)

– 14:45

**【Invited】** Space-resolved ARPES on strongly correlated materials  
**M. Horio** (The Univ. of Tokyo)

14:45 – 15:05 Break Time

<Session 2: PEEM and Momentum Microscopes Chair: **K. Fukutani** (IMS) / **S. Suga** (Osaka Univ.) >

15:05 –

**【Invited】** Operando observation of organic transistors using femtosecond photoemission electron microscopy  
**K. Fukumoto** (KEK)

**【Invited】** Imaging in real and momentum space with ultrafast XUV light source  
**M. K. Man** (OIST)

**【Invited】** Momentum-Space Movies of Electrons at Surfaces and Interfaces  
**S. Ito** (Marburg Univ.)

**【Invited】** Active Sites of Te-hyperdoped Silicon  
**M. Hoesch** (DESY PETTRA-III)

**【Invited】** Transition of soft X-ray photoelectron microscopy from TLS to TPS  
**T. H. Chuang** (TPS)

– 17:55 Multimodal Valence Stereography for Cutting-edge Spin Materials Science  
**F. Matsui** (IMS-UVSOR)

18:00 – 21:00 Poster session



**July 30<sup>th</sup> (Sun.)**<Session 3: New Light Chair: **S. Kera** (IMS-UVSOR)>

9:00 – 9:25 –

**【Invited】** Spatio-temporal control of undulator radiation and its application  
**T. Kaneyasu** (Saga LS)

<Session 4: Soft materials Chair: **S. Kera** (IMS-UVSOR)>

9:25 –

**【Invited】** Inter-molecular electronic bands in crystalline organic semiconductors probed by synchrotron radiation photoelectron spectroscopy  
**Y. Nakayama** (Tokyo Univ. of Science)

– 10:15

**【Invited】** Photoelectron angular distribution (PAD) measurements of highly ordered organic films  
**Y. Yamada** (Univ. of Tsukuba)

<Session 5: Data science Chair: **H. Daimon** (IMS-UVSOR)>

10:35 –

**【Invited】** Observation of atomic arrangements of dopants and interfaces using photoelectron holography and sparse modeling  
**T. Matsushita** (NAIST)

**【Invited】** Establishment of analytical method for Wave-number Resolved Photoelectron Spectroscopy  
**K. Niki** (Chiba Univ.)

– 11:50

**【Invited】** Development of data analysis methods for multi-dimensional spectral imaging techniques  
**N. Nagamura** (NIMS)

<Session 6: Future Plans Chair: **F. Matsui** (IMS-UVSOR)>

12:10 –

**【Invited】** Photoelectron Spectroscopy in the 21st Century and Beyond  
**K. Ozawa** (KEK)

– 12:45

**【Invited】** Prospects required for future light-source facilities: Research Center for Autonomous Functions by Tailor-made Photon Science  
**S. Kera** (IMS-UVSOR)

12:45 – 13:00

Summary/Closing  
**F. Matsui** (IMS-UVSOR)

13:00 –

Lunch Break

14:00 – 16:00

UVSOR Tour

## Poster Session

01. Lattice Design of the UVSOR-IV Storage Ring  
**E. Salehi** (IMS-UVSOR)
02. Development of Display-type Analyzer CoDELMA  
**H. Daimon** (IMS-UVSOR)
03. Observation of electronic band dispersion in crystalline PTCDI-C8 thin film  
**Jaseela Palassery Ithikkal** (IMS)
04. 1) Elucidations of electronic structure and the many-body interactions of organic molecular materials  
**K. Fukutani** (IMS)
05. 2) Explorations for spontaneously formed excitons in narrow-gap semiconductors and semimetals  
**K. Fukutani** (IMS)
06. 1) Spin- and orbital-dependent band structure of unconventional topological semimetals  
**K. Hagiwara** (IMS-UVSOR)
07. 2) Development of Photoelectron Momentum Microscope with Soft X-ray & VUV Dual Beams at BL6U & BL7U  
**K. Hagiwara** (IMS-UVSOR)
08. Interfacial electronic states of F6TCNNQ molecular crystalline films on  $\text{TiSe}_2$   
**K. Kiyosawa** (Chiba Univ.)
09. On light-electron angular momentum transfer in Auger electron spectroscopy  
**Peter Krüger** (Chiba Univ.)
10. Observation of electronic and exciton states of semiconductor and insulator materials via high-sensitivity photoemission spectroscopy using deep ultraviolet-visible photons  
**R. Nakazawa** (Chiba Univ.)
11. SX-RIXS under external perturbations and extended spin resolved photoelectron momentum microscopy  
**S. Suga** (Osaka Univ.)
12. Photoemission spectroscopy of insulators using enhanced environmental charge compensation  
**S. Suzuki** (Univ. of Hyogo)

13. Momentum-resolved resonant photoelectron spectroscopy of  $\text{TiSe}_2$ : Interatomic interaction and negative  $q$  in Fano resonance  
**S. Tanaka** (Osaka Univ.)
14. Current Status of Imaging-type Photoemission Microscopy with nano-ESCA in NIMS  
**S. Tsuda** (NIMS)
15. Development of time-resolved ambient pressure X-ray photoelectron spectroscopy system at SPring-8 BL07LSU  
**S. Yamamoto** (SRIS, Tohoku Univ.)
16. Angle-resolved Photoemission Study of Solid Electrolytes  $\text{Li}_{1-x}\text{La}_{\frac{2}{3}-x}\text{TiO}_3$  Bulk Single Crystal  
**T. Ito** (Nagoya Univ.)
17. Two-dimensional heavy fermion in a monoatomic-layer Kondo lattice  $\text{YbCu}_2$   
**T. Nakamura** (Osaka Univ.)
18. Development of Measurement Techniques at the Hard X-ray Photoelectron Spectroscopy in BL46XU at SPring-8  
**K. Takagi** (JASRI)

## UVSOR/SPring-8 Infrared Beamline Joint Users Meeting

Date: September 29<sup>th</sup>, 2023.

Venue: Room 201, Main Office Bldg., Institute for Molecular Science (IMS)

### September 29<sup>th</sup> (Fri)

- 9:00 – Reception
- 9:30 – 9:45 **Kiyohisa Tanaka** (UVSOR)  
Opening remarks and introduction of infrared beamlines at UVSOR
- 9:45 – 10:00 **Yuka Ikemoto** (JASRI)  
Prospects for the Use of Infrared Light at SPring-8
- 10:00 – 10:20 **Jun Nishida** (IMS)  
Current status of infrared nano-spectroscopy and ultrafast spectroscopy and potentials of synchrotron light source
- 10:20 – 10:40 **Yasuko Obata** (Hoshi University)  
Development of transdermal formulation based on analysis of infrared characteristics of stratum corneum
- 10:40 – 10:55 Coffee Break
- 10:55 – 11:15 **Yasuo Seto** (RIKEN SPring-8 Center)  
Discrimination of drug powder by micro Fourier transform infra-red imaging
- 11:15 – 11:35 **Makoto Uyama** (Shiseido Co. Ltd.)  
Visualization of Glyoxylic Acid in Human Hair by Using BL43IR
- 11:35 – 11:50 **Aina Reich** (neaspec/attocube)  
The neaSCOPE as a tool for near-field imaging and spectroscopy at the synchrotron
- 11:50 – 13:00 Lunch Break
- 13:00 – 13:20 **Len Ito** (Milbon Co. Ltd.)  
Analysis of Hair Using Synchrotron Radiation Infrared Microscopy and its Application to Products
- 13:20 – 13:40 **Go Matsuba** (Yamagata University)  
Evaluation of Adsorption of Water Molecules on the Surface of Polylactide Spherulite
- 13:40 – 14:00 **Chie Kojima** (Osaka Metropolitan University)  
Hydration analysis of PEG and PEGylated dendrimers by FT-IR spectroscopy
- 14:00 – 14:20 **Takayasu Kawasaki** (KEK)  
Chemical conversion of biomolecules by infrared-wavelength specific vibrational excitation
- 14:20 – 14:55 Coffee Break
- 14:55 – 15:15 **Hiroshi Matsui** (Tohoku University)  
Proton-Transfer Mechanisms Associated with Phonons
- 15:15 – 15:35 **Satoshi Iguchi** (Tohoku University)  
Measurement of infrared magneto-optical spectra in BL43IR: circular dichroism and optical

- activity
- 15:35 – 15:55 **Hidekazu Okamura** (Tokushima University)  
Infrared spectroscopic studies under high pressure using BL43IR at SPring-8
- 15:55 – 16:15 **Shin-ichi Kimura** (Osaka University)  
Advanced infrared spectroscopy at UVSOR and perspective
- 16:25 – UVSOR Tour

## 60 years of Synchrotron Radiation in Japan (JPSR60)

Date: October 24<sup>th</sup> - 25<sup>th</sup>, 2023.

Venue: Okazaki Conference Center

### October 24<sup>th</sup> (Tue)

12:30 – 13:00 Reception

Chair: **Hitoshi Abe** (KEK)

13:00 – 13:05 **Shin-ichi Adachi** (KEK, President of JSSRR)

Opening remarks

13:05 – 13:10 **Koji Yanagisawa** (MEXT)

Guest speech

13:10 – 13:40 **Keith Hodgson** (Stanford Univ.)

Innovation and Discovery in Structural Biology Enabled by Synchrotron Radiation – Japan and an International Perspective

13:40 – 14:10 **Robert Lamb** (The Univ. of Melbourne)

The Japanese Light Source Experience – an international user perspective

14:10 – 14:40 Coffee Break

Chair: **Toshihiro Okajima** (Aichi Synchrotron)

14:40 – 15:10 **Jianwei (John) Miao** (UCLA)

A Personal Journey on Coherent Diffractive Imaging with Synchrotron Radiation in Japan

15:10 – 15:40 **Marie-Emmanuelle Couprie** (SOLEIL)

Fruitful French-Japanese collaborations on synchrotron radiation and Free Electron Laser

15:40 – 16:10 **Han Woong Yeom** (Institute for Basic Science, Pohang Institute of Science and Technology)

Past, present and future of VUV synchrotron-radiation based ARPES activity in Japan and Korea

16:10 – 16:40 Coffee Break

Chair: **Toyohiko Kinoshita** (JASRI)

16:40 – 17:10 **Hideo Kitamura** (RIKEN)

From “Kamikaze” to Synchrotron Radiation

17:10 – 17:40 **Toshiaki Ohta** (Ritsumeikan Univ.)

Personal remarks on the synchrotron radiation facilities in Japan

17:40 – 18:10 **Shigemasa Suga** (Osaka Univ.)

Deeper materials sciences with use of synchrotron radiation in the last 47 years with international collaboration

18:10 – 18:25 **Christof Kunz** (ex-ESRF Director)

From parasitic to dedicated use of Synchrotron Radiation (Video message)

18:25 – 18:30 Conference photo

18:30 – 20:45 Poster Session

18:45 – 20:45 Banquet

**October 25<sup>th</sup> (Wed)****Chair: Hiroki Wadati** (University of Hyogo)

- 09:00 – 09:25      **Makina Yabashi** (RIKEN)  
Evolution of synchrotron light sources in Japan – SACLA and beyond –
- 09:25 – 09:50      **Junko Yano** (LBNL)  
From Natural to Artificial Photosynthesis
- 09:50 – 10:15      **Yoshihisa Harada** (The Univ. of Tokyo)  
Synchrotron soft X-ray emission spectroscopy in the past 30 years and the next 10 years
- 10:15 – 10:45      Coffee Break
- Chair: **Yusuke Wakabayashi** (Tohoku University)
- 10:45 – 11:10      **Yukio Takahashi** (Tohoku Univ.)  
Toward Next-Generation Coherent Diffraction Imaging
- 11:10 – 11:35      **Wataru Utsumi** (QST)  
NanoTerasu, a new 3GeV SR facility in Japan
- 11:35 – 12:00      **Yasutaka Nagai** (Toyota Central R&D Labs Inc.)  
SPring-8 Running Toward Future “MIRAI”
- 12:00 – 12:10      **Tetsuya Ishikawa** (RIKEN)  
Closing remarks

## Facility Posters

01. **Wataru Utsumi** (NanoTerasu)  
NanoTerasu, a new 3GeV SR facility in Japan
02. **Noriko Usami** (Photon Factory, KEK)  
Photon Factory, history and future
03. **Iwao Matsuda** (ISSP)  
13 years History of the Soft X-ray Spectroscopy at the University of Tokyo Synchrotron Radiation Outstation
04. **Satoshi Kera** (UVSOR, IMS)  
Present Status and Perspectives of UVSOR
05. **Toshihiro Okajima** (AichiSR)  
AichiSR: A Decade of Advancing Research and Innovation in Industry and Academia
06. **Akinori Irizawa** (SR Center Ritsumeikan University)  
Current Status of Ritsumeikan University SR Center
07. **Makina Yabashi** (SPring-8, SACLA)  
Two large facilities for observing small objects with X- rays: SPring-8 and SACLA
08. **Satoru Suzuki** (NewSUBARU)  
Industrial support and academic research at NewSUBARU
09. **Hirofumi Namatame** (HiSOR)  
Current Status of Hiroshima Synchrotron Radiation Center, Hiroshima University (HiSOR)
10. **Yoshiki Seno** (SAGA Light Source)  
Activities as the local government facility

## Poster Program

01. **Makoto Watanabe** (Tohoku University)  
Early SR Research in Japan using 1.3GeV ES
02. **Kazutoshi Takahashi** (Synchrotron Light Application Center, Saga University)  
Status of Saga University Beamline
03. **Osamu Yushiro** (ScandiNova Systems KK)  
ScandiNova pulsed klystron modulator for accelerator facilities around the world
04. **Hiroshi Daimon** (Institute for Molecular Science)  
Atom-Holography Microscope Realized by New Display Analyzer CoDELMA
05. **Tappei Nishihara** (JASRI)  
Development of Measurement of Techniques at the Hard X-ray Photoelectron Spectroscopy in BL46XU at SPring-8
06. **Yasutaka Sawata** (Tokyo University of Science)  
Angle-resolved photoemission study on  $\text{LaSr}_2\text{Mn}_2\text{O}_7$  in the CE-type antiferromagnetic state
07. **Syoyou Yoshida** (Keio University)  
Protocol to steer phase-retrieval calculation in X-ray diffraction imaging



08. **Wolfgang Voegeli** (Tokyo Gakugei University)  
Multi-beam X-ray optical system using a  $\sigma$ -polarization diffraction geometry for high-speed X-ray tomography
09. **Wataru Yashiro** (Tohoku University)  
Synchrotron X-ray Tomography with Sub-Millisecond Temporal Resolution
10. **Takeshi Hara** (Nagoya University)  
Advancements in valence electron density analysis by high-precision X-ray diffraction for molecular crystals
11. **Chihaya Koyama** (Nagoya University)  
Orbital State Observation of  $\text{Nd}_2\text{Fe}_{14}\text{B}$  using CDFS Method
12. **Shunsuke Kitou** (University of Tokyo)  
Observation of the real-space valence electron density distribution in strongly correlated electron systems

# NINS Frontier Photonic Science Project Workshop

## Exploring innovative metrologies based on quantum/coherence nature of synchrotron radiation

Date: November 17-18, 2023

Place: Okazaki Conference Center (face-to face)

### November 17<sup>th</sup> (Fri.)

14:00 – 14:30      Opening Remarks  
**M. Katoh** (Hiroshima Univ. / UVSOR)

#### < Session 1, Ultrafast/Ultrashort Pulses >

14:30 – 15:00      Control of molecular ionization and dissociation using phase-locked two-color laser pulses  
**T. Endo** (QST)

15:00 – 15:30      Ultrafast spectroscopy using high harmonic generation in the range of VUV and soft X-ray  
**T. Mizuno** (The Univ. of Tokyo)

15:30 – 16:00      Experimental demonstration of single-cycle free electron lasers  
**T. Tanaka** (RIKEN SPring-8 Center)

16:00 – 16:15      Break Time

#### < Session 2, Quantum Metrology/Temporally-structured Light >

16:15 – 16:45      New dimension of quantum measurements - Potentiality of qualitative application in quantum measurement -  
**M. Iinuma** (Hiroshima University, AdSE)

16:45 – 17:15      Basics of an optical frequency comb and its application to standards and spectroscopy  
**M. Wada** (AIST)

17:15 – 17:45      Generation of XUV double pulse by a tandem undulator and its applications  
**T. Kaneyasu** (SAGA Light Source)

17:45 – 18:15      Measurement of the wave form of synchrotron light with SPIDER  
**T. Fuji** (Toyota Technological Institute)

18:45 –              Networking Event

### November 18<sup>th</sup> (Sat.)

#### < Session 3, Quantum Metrology/Ultrafast Spectroscopy >

9:00 – 9:30          Utilization of Optical Frequency Combs  
**T. Yasui** (Institute of Post-LED Photonics (pLED), Tokushima University)

9:30 – 10:00      Ultrafast spectroscopy of complex molecular systems using few-cycle pulses  
**H. Kuramochi** (IMS)

10:00 – 10:30      Ultrafast electron relaxation processes probed by static core-electron spectroscopy  
**S. Wada** (Graduate School of Advanced Science and Engineering, Hiroshima University)

10:30 – 10:45 Break Time

<Session 4, Microscopy/Imaging>

10:45 – 11:15 Local carrier and exciton dynamics probed by infrared near-field spectroscopy

**J. Nishida** (IMS)

11:15 – 11:45 High resolution, non-destructive internal structure measurement using optical coherence tomography (OCT)

**N. Nishizawa** (Department of Electronics, Nagoya University)

11:45 – 12:15 Development of Hollow Fiber Optics for X-ray Beams and Prospects for Application to Synchrotron Radiation Experiments

**Y. Tanaka** (Univ. of Hyogo)

12:15 – 13:15 Lunch Break

< Session 5, Polarization/Spatially-structured Light>

13:15 – 13:45 Soft X-ray excited STED and its microscopic application

**T. Ejima** (SRIS & IMRAM, Tohoku University)

13:45 – 14:15 Vortex electron generation by intense laser irradiation and its applications

**T. Morishita** (U. of Electro-Comm.)

14:15 – 14:45 Potential of spectroscopic imaging with high-speed modulation of circular polarization

**T. Narushima** (Ministry of Education, Culture, Sports, Science and Technology (MEXT))

14:45 – 15:15 Versatile polarization tuned by segmented undulator for soft x-ray spectroscopy

**Y. Ohtsubo** (QST)

15:15 – 15:30 Summary and Perspective

**M. Katoh** (Hiroshima Univ. / UVSOR)

15:45 – Laboratory tour

# UVSOR User 11

