V

Workshops

UVSOR Symposium 2015

Date: November 6 - 7, 2015
Place: Okazaki Conference Center, Okazaki, Japan

November 6th (Fri.)

13:00 - 13:05 Opening remarks
H. Iwayama (UVSOR)

<Session 1, Chair: **S. Kimura**>

13:05 - 13:25 UVSOR and World Trends of Middle and Low Energy Synchrotron Radiation Facilities
N. Kosugi (UVSOR)

13:25 - 13:45 Valence-Band Dispersion in Organic Thin Films and Interfaces: Systematic Approach and Discovery of New Dispersion Mechanism
H. Yamane (IMS)

13:45 - 14:05 Development of the Photoelectron Spectroscopy Beamline Suited for Organic Molecular Solids: BL2B Reconstruction III
S. Kera (IMS)

14:05 - 14:25 Current Status and Future Plans of BL5U and BL7U
K. Tanaka (UVSOR)

14:25 -14:45 Low-Energy, Polarization-Dependent ARPES Study on the Bulk Fermi Level of Ultrathin Bi Films
T. Hirahara (Tokyo Tec.)

14:45 - 15:25 Short Presentation

15:25 - 16:00 Coffee Break

<Session 2, Chair: **T. Yokoyama**>

16:00 - 17:00 [Invited] The Mystery of Water, X-Rays Provide Unique Insights
Anders Nilsson (Stockholm Univ.)

<Poster Sesstion & Banquet>

17:30 - 18:30 Poster Sesstion

18:30 - 20:00 Banquet

November 7th (Sat.)

<Session 3, Chair: **E. Shigemasa**>

9:00 - 9:20 Current Status of Light Source Developments at BL1U
M. Katoh (UVSOR)

9:20 - 9:40 Development of Application Technology of Coherent Light Source and Solid-State Spectroscopy
S. Kimura (Osaka Univ.)

9:40 - 10:00 Comprehensive Study of Photoexcited States of Solids by VUV Emission Spectroscopy
M. Kitaura (Yamagata Univ.)

10:00 - 10:20 Report of the Launch of the Sounding Rocket CLASP (Chromospheric Lyman-Alpha Spectro Polarimeter)
N. Narukage (NAOJ)

10:20 – 10:50 Coffee Break

<Session 4, Chair: **K. Tanaka**>

10:50 - 11:10 Operando Observation of Efficient Cobalt Oxide Catalysts by Soft X-Ray Absorption Spectroscopy
M. Yoshida (Keio Univ.)

11:10 - 11:30 Environmental Chemistry based on the Observation of Fine Particles in Environment using STXM
Y. Takahashi (Tokyo Univ.)

11:30 - 12:00 UUU Meeting

< Poster Presentation >

P01 Generation of 5-MeV Gamma-Ray Beam at BL1U and its Application
H. Zen (Kyoto Univ.)

P02 Modification of Electronic State of DNTT Monolayer on Au(111) Surface by Controlling the Molecular Arrangement
Y. Hasegawa (Tsukuba Univ.)

P03 Optimization of Liquid Thickness for Soft X-Ray Absorption Spectroscopy in Transmission Mode
M. Nagasaka (IMS)

P04 O K-Edge XAFS Measurement of MnOx Oxygen Evolution Catalyst
F. Yamamoto (Keio Univ.)

P05 Observation of Nickel-Glycine Water Oxidation Catalyst by Soft X-Ray XAFS
S. Onishi (Keio Univ.)

P06 Electrochemical O K-Edge XAFS Spectroscopy for Nickel and Cobalt Borate Catalysts
Y. Mitsutomi (Keio Univ.)

P07 Local Structure Observation of Aqueous KSCN Solution by Soft X-Ray Absorption Spectroscopy
H. Yuzawa (IMS)

P08 Energy Transfer from I^- to In^+ in NaCl: I^-, In^+ Crystals
A. Iguchi (Osaka Prefecture Univ.)

P09 PL and PLE Spectra of Laser Irradiated *a*-CN_x Thin Films
K. Ikeda (Fukui Univ.)

P10 Current Status of a Scanning Transmission X-Ray Microscopy Beamline BL4U
T. Ohigashi (UVSOR)

P11 Application of Multi-Electron Coincidence Method to Condensed Molecules
R. Mashiko (Niigata Univ.)

P12 Photoinduced Change of Vacuum Ultra-Violet Absorption Spectra of Amorphous Chalcogenide Thin Films
K. Hayashi (Gifu Univ.)

P13 Observation of the Optical Isomerization of Amino Acid by Infrared Micro-Spectroscopic Imaging
S. Kamei (Osaka Univ.)

P14 Stability Evaluation for Improving Accuracy of BL6B, an Infrared-THz Beamline
T. Iizuka (UVSOR)

P15 Absorption Spectroscopy of Photo-Induced Defects in Ce:GAGG Crystals
R. Inaba (Yamagata Univ.)

P16 Dissociation Dynamics of Methanol Dication Studied by an Electron-Ion Coincidence Method
M. Higuchi (Niigata Univ.)

P17 New Findings in Xe Photoelectron Recapture Study of Auger Electron Spectroscopy
S. Kosugi (Sophia Univ.)

P18 Variation in the Spectator Shifts of Resonant Auger Peaks Measured for Fluorohydrocarbon Molecules
T. Kaneda (Hiroshima Univ.)

P19 Orbital Energy Rearrangement upon Intermolecular Interaction of Perfluoropentacene Thin Films
T. Ueba (IMS)

P20 Variation in the Adsorbate Molecular Structure by Surface Chemical Reaction
T. Tago (Chiba Univ.)

P21 Local Electron-Phonon Coupling in HOMO-Band Dispersion of Rubrene Single Crystals: an Angle-Resolved Ultraviolet Photoelectron Spectroscopy Study
F. Bussolotti (IMS)

P22 Surface Tomonaga-Luttinger Liquid State on the Bi/InSb(001) surface
Y. Ohtsubo (Osaka Univ.)

P23 Electronic Structure of Trilayer Cuprate Superconductor Bi2223 Revealed by ARPES Using Low Photon Energy
S. Ideta (UVSOR)

P24 Angle-Resolved Photoelectron Spectroscopy of a Kondo Insulator YbB_{12}(001)Surface
K. Hagiwara (Osaka Univ.)

P25 Angle Resolved Photoemission Spectroscopy in $NdFeP_{1-x}As_x(O,F)$ Single Crystals
S. Miyasaka (Osaka Univ.)

P26 Scattering of Electrons from Graphite Substrate by Organic Molecular Monolayer
T. Yamaguchi (Chiba Univ.)

P27 Filterless Vacuum Ultraviolet Photoconductive Detector Based on SrF_2 Thin Film Fabricated by Pulsed Laser Deposition
Y. Otani (Nagoya Institute Tech.)

P28 Statistical Analysis of Photoluminescence Decay in AlGaN Alloys
Y. Itakura (Fukui Univ.)

P29 Development and Improvement of Spectroscopic Ellipsometry for VUV Region and Complex Refractive Index of AlN Wafer
M. Miyashita (Fukui Univ.)

P30 Optical Properties of Infrared Emission Garnet Scintillator Crystals
A. Yamaji (Tohoku Univ.)

P31 Luminescent Study on Gadolinium Pyrosilicate Crystals Using VUV Photons in UVSOR
S. Kurosawa (Tohoku Univ.)

Future Perspectives of Soft X-Ray Imaging

Date: Sep. 7-8, 2015
Venue: Talk; 201, Main Office Building
Poster; 408 & 409, Main Laboratory Building

Sep 7th, Mon.

<Session #1 Chair: **Mitsunori Toyoda** (Tohoku University)>

13:30 - 13:40 Introduction
Takuji Ohigashi (Institute for Molecular Science)

13:40 - 14:10 Status of a Scanning Transmission X-Ray Microscopy Beamline, BL4U, and Development of Applied Observation Methods
Takuji Ohigashi (Institute for Molecular Science)

14:10 - 14:40 Structural Observation of Rubber Compositeusing Scanning Transmission X-Ray Microscope
Fusae Kaneko (SUMITOMO RUBBER INDUSTRIES, LTD)

14:40 - 15:10 Development of EUV Microscopes for EUV Mask Observation at New SUBARU
Tetsuo Harada (University of Hyogo)

15:10 - 15:40 Defect Observation on Mask Blanks Using EUV Illumination
Hiroki Miyai (Lasertec Corporation)

15:40 - 16:00 Coffee Brake

<Session #2 Chair: **Takuji Ohigashi** (Institute for Molecular Science)>

16:00 - 16:30 Current Status and Future Prospects of the Transmission Soft X-Ray Microscope at The SR Center of Ritsumeikan University
Kuniko Takemoto (Kansai Med. Univ.)

16:30 - 17:00 Potential Connectmics Driven by Soft X-Ray Microscopy
Haruo Mizutani (Harvard University)

17:00 - 17:50 **Invited talk** "Expectation and Prospects of Soft X-Ray Imaging"
Sadao Aoki (Comprehensive Research Organization for Science and Society)

18:00 - 20:00 Poster Session & Banquet

Sep. 8th, Tue.

<Session #3 Chair: **Tetsuo Harada** (University of Hyogo)>

9:00 - 9:50 **Invited talk** "Soft X-Ray Spectromicroscopy: Current Status and the Future Perspective"
Tohru Araki (Diamond Light Source)

9:50 - 10:20 Wide-Field EUV Microscope Based on Multilayer-Mirror Imaging Objective
Mitsunori Toyoda (Tohoku University)

10:20 - 10:40 Coffee Brake

10:40 - 11:10 In Situ Soft X-Ray Absorption Spectroscopy of Solid-Liquid Heterogeneous Catalytic Reaction
Hayato Yuzawa (Institute for Molecular Science)

11:10 - 11:40 Development and Application of Compact STXM
Yasuo Takeichi (KEK-PF)

11:40 - 12:10 Analysis of Organic Materials in Primitive Bodies of Solar System by Soft X-Ray Microscopy
Masayuki Uesugi (JAXA)
12:10 - 13:40 Lunch
(13:00 - 13:40) UVSOR Visiting Tour

<Session #4 Chair: **Takeshi Higashiguchi** (Utsunomiya University)>
13:40 - 14:10 Soft X-Ray Nanospectroscopy and Magnetic Dynamics Analysis by Means of Photoemission Electron Microscopy
Takuo Ohkochi (Japan Synchrotron Radiation Research Institute /SPring-8)
14:10 - 14:40 Current Status and Prospects of Neutron Imaging
Takenao Shinohara (J-PARC Center, Japan Atomic Energy Agency)
14:40 - 15:10 Scanning Transmission X-Ray Microscope Study on Degradation of Positive Electrode Materials
Hisao Yamashige (Toyota Motor Corp)
15:10 - 15:30 Coffee Brake

<Session #5 Chair: **Takuo Ohkochi** (Japan Synchrotron Radiation Research Institute /SPring-8)>
15:30 - 16:00 Recent Developments in the Fabrication of X-Ray Imaging Optics
Anthony Baucamp (Kyoto University)
16:00 - 16:30 High Spatial Resolution Imaging of Laser Microscopy by Vector Beams
Yuichi Kozawa (Tohoku University)
16:30 - 17:00 Laser-Produced Highly Ion Charge Plasma Water Window Soft X-Ray Sources
Takeshi Higashiguchi (Utsunomiya University)
17:00 Closing Remark

<Poster Session>
P01 The Study of Organic Component Mapping by Carbon 1s NEXAFS of STXM
Noriyuki Iwata[1], **Mikiko Abe**[1], **Yuichi Inagaki**[2] and **Takuji Ohigashi**[2]
([1]Ricoh Co Ltd., [2]UVSOR Facility, Institute for Molecular Science)
P02 Large-Scale CCD Camera for Wide-Field EUV Microscopy
Toshiyuki Kakudate, **Ryoichi Hirose** and **Mitsunori Toyoda**
(Institute of Multidisciplinary Research for Advanced Materials, Tohoku University)
P03 Development of New Liquid Flow Cell for Scanning Transmission X-Ray Microscope
Masanari Nagasaka, **Takuji Ohigashi**, **Hayato Yuzawa** and **Nobuhiro Kosugi**
(Institute for Molecular Science)
P04 EUV Mask Observations Using a Coherent EUV Scatterometry Microscope with a High-Harmonic-Generation Source
Takahiro Fujino[1], **Yusuke Tanaka**[1], **Tetsuo Harada**[1], **Yutaka Nagata**[2], **Takeo Watanabe**[1] and **Hiroo Kinoshita**[1]
([1]Univ. of Hyogo, [2]RIKEN)
P05 Development of Fabrication Process of Precise Wotler Mirror for Soft X-Ray Imaging
Satoru Egawa, **Takehiro Kume**, **Yoko Takeo**, **Takahiro Saito**, **Yoshinori Takei** and **Hidekazu Mimura**

(Graduate School of Engineering, The University of Tokyo)

P06 Development of Focusing System for High-order Harmonic Generation with Ellipsoidal Mirror
Hiroto Motoyama[1], **Takahiro Sato**[2], **Atushi Iwasaki**[2], **Satoru Egawa**[1], **Kaoru Yamanouchi**[2] and **Hidekazu Mimura**[1]
([1]School of Engineering, The University of Tokyo, [2]School of Science, The University of Tokyo)

P07 EUV Multilayer Mirrors for Diffraction-Limited Focusing of Isolated Attosecond Pulse
Yuki Tamaru[1, 2], **Satoshi Mori**[2], **Kazuhiro Sawada**[1, 4], **Yuxi Fu**[1], **Eiji. J. Takahashi**[1], **Akira Suda**[2], **Fumihiko Kannari**[4], **Katsumi Midorikawa**[1] and **Mitsunori Toyoda**[3]
([1]RIKEN, [2]Tokyo Univ. of Sci., [3]Tohoku Univ. , [4]Keio Univ)

P08 Investigation of Bacteria in the Bacteriogenic Iron Oxides Using Scanning Transmission X-Ray Microscopy
Hiroki Suga[1], **Sakiko Kikuchi**[2], **Yasuo Takeichi**[3,4], **Chihiro Miyamoto**[5], **Nobuhito Inami**[3], **Kazuhiko Mase**[3, 4], **Kanta Ono**[3, 4], **Masaaki Miyahara**[1] and **Yoshio Takahashi**[3, 5]
([1]Hiroshima Univ., [2]JAMSTEC, [3]KEK-PF, [4]SOKENDAI, [5]The Univ. of Tokyo)

P09 Development of Micro Coherent EUV Scatterometry Microscope for Phase Defect Characterization
Hiraku Hashimoto[1], **Tetsuo Harada**[1], **Tsuyoshi Amano**[2], **Takeo Watanabe**[1] and **Hiroo Kinoshita**[1]
([1]Univ. of Hyogo, [2]EIDEC)

P10 Soft X-Ray Emission Spectroscopy of Electrochemically Li Inserted Si Substrate
Tshihiro Kondo[1], **Nana Aoki**[1] and **Kohei Uosaki**[2]
([1]Ochanomizu Univ., [2]NIMS)

<Posters from Speakers (No abstract)>

S11 Soft X-Ray Nanospectroscopy and Magnetic Dynamics Analysis by Means of Photoemission Electron Microscopy
Takuo Ohkochi (SPring-8)

S12 The Effects of Irradiation on Growth and Microstructure of *Pseudanabaena Foetida*

S13 Current Status and Future Prospects of the Transmission Soft X-Ray Microscope at The SR Center of Ritsumeikan University
Kuniko Takemoto (Kansai Med. Univ.)

S14 High Spatial Resolution Imaging of Laser Microscopy by Vector Beams
Yuichi Kozawa (Tohoku Univ.)

S15 Current Status of Scanning Transmission X-Ray Microscopy Beamline at UVSOR-III
Takuji Ohigashi (Institute for Molecular Science)

S16 Development of EUV Microscopes for EUV Mask Observation at New SUBARU
Tetsuo Harada (University of Hyogo)

S17 Wide-Field EUV Microscope Based on Multilayer-Mirror Imaging Objective
Mitsunori Toyoda (Tohoku University)

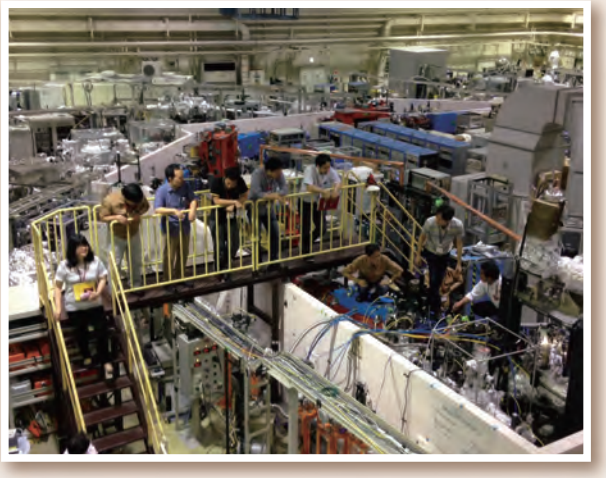
S18 Spectral Analysis of EUV Emission from Highly Charged Zr Ions

S19 Laser-Produced Highly Ion Charge Plasma Water Window Soft X-Ray Sources

S20 Development of High Power, Short Pulse CO_2 Laser System for Efficient EUV Sources
Takeshi Higashiguchi (Utsunomiya University)

S21 Development and Application of Compact STXM
Yasuo Takeichi (KEK-PF)

One year at UVSOR



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