

**International Conference on
X-ray Optics and Applications 2018**

XOPT2018

Room 313+314

Tuesday, April 24

8:55-9:00

Opening

Opening Remarks

Tetsuya Ishikawa
RIKEN SPring-8 Center, Japan

9:00-10:30

XOPT1: XFEL facilities

Chair: Aymeric Robert
SLAC National Accelerator Laboratory, USA

XOPT1-1 9:00

(Invited) Status and Developments in Crystal Optics at the Linac Coherent Light Source

Diling Zhu¹, Abdullah Ahmed¹, Roberto Alonso-Mori¹, Drew Barada¹, Sebastien Boutet¹, Matthieu Chollet¹, Daniele Cocco¹, Yiping Feng¹, Paul Fuoss¹, Jerome Hastings¹, Justin James¹, Tyler Johnson¹, Karl Gumerlock¹, Kazutaka Nakahara¹, Taito Osaka², Aymeric Robert¹, Takahiro Sato¹, Donald Schafer¹, Matthew Seaberg¹, Hongliang Shi¹, Sanghoon Song¹, Yanwen Sun¹, Mark Sutton³, Nan Wang¹, Makina Yabashi², Lin Zhang¹
¹SLAC National Accelerator Laboratory, USA, ²RIKEN SPring-8 Center, Japan, ³McGill University, Canada

XOPT1-2 9:30

(Invited) Hard X-ray focusing optics and applications at the PAL-XFEL

Jangwoo Kim
Pohang Accelerator Laboratory, Republic of Korea

XOPT1-3 10:00

(Invited) Recent Progress of SACLA

Taito Osaka
RIKEN SPring-8 Center, Japan

----- 10:30-11:00 Break-----

11:00-12:00

XOPT2: Optics I (refractive)

Chair: Lahsen Assoufid
APS, Argonne National Laboratory, USA

XOPT2-1 11:00

(Invited) X-ray refractive beam-conditioning and beam-shaping optics for coherent microscopy applications

Anatoly Snigirev
Immanuel Kant Baltic Federal University, Russia

XOPT2-2 11:30

2D focusing kinoform lenses produced by 3D direct printing

Thomas Roth¹, Frieder Koch², Sebastien Berujon¹, Rafael Celestre¹, Thomas Zinn¹, Christian David², Raymond Barrett¹
¹European Synchrotron Radiation Facility, France, ²Paul Scherrer Institut, Switzerland

XOPT2-3 11:45

Characterisation of refractive focusing lenses

Lucia Alianelli, Oliver Fox, Kawal Sawhney
Diamond Light Source Ltd, United Kingdom

----- 12:00-13:30 Lunch -----

13:30-15:00

XOPT3: Imaging I

Chair: Satoshi Matsuyama
Osaka University, Japan

XOPT3-1 13:30

(Invited) Coherent X-ray Diffractive Imaging of Topological Defects in Operando Energy Storage Materials

Oleg G. Shpyrko¹, Andrej Singer^{1,2}, Shirley Meng¹
¹University of California San Diego, USA, ²Cornell University, USA

XOPT3-2 14:00

(Invited) Multi-Scale 3D Imaging of Strains and Structures with Dark-Field X-Ray Microscopy

Hugh Simons
Technical University of Denmark, Denmark

XOPT3-3 14:30

Hard X-ray in-situ full-field microscopy for material science applications

Irina Snigireva¹, Kehn Vidar Falch², Daniele Casari², Marco Di Michiel¹, Carsten Detlefs¹, Ragnvald Mathiesen², Anatoly Snigirev³
¹European Synchrotron Radiation Facility, France, ²Norwegian University of Science and Technology, Norway, ³Immanuel Kant Baltic Federal University, Russia

XOPT3-4 14:45

Lensless imaging with a lens

Anders Filsoec Pedersen¹, Virginie Chamard², Hugh Simons¹, Carsten Detlefs³, Henning Poulsen¹
¹Technical University of Denmark, Denmark, ²Aix-Marseille Universite, France, ³European Synchrotron Radiation Facility, France

----- 15:00-15:30 Break-----

15:30-17:00

XOPT4: Optics II (high heat-load/high brilliance)

Chair: Harald Sinn
European XFEL, Germany

XOPT4-1 15:30

(Invited) Development of a hard X-ray non-invasive wavefront sensor using a single-grating interferometer combined with a thin diamond single-crystal beam splitter

Lahsen Assoufid¹, Xianbo Shi¹, Walan Grizolli¹, Tomas Kolodziej¹, Steven Kearney¹, Yuri Shvydko¹, Vladimir Blank², Sergey Terenteyev², Deming Shu¹, Antoine Wojdyla³, Kenneth A. Goldberg³, Mourad Idir⁴, Daniel Cocco⁵
¹APS, Argonne National Laboratory, USA, ²Technological Institute for Superhard and Novel Carbon Materials, Russia, ³ALS, Lawrence Berkeley National Laboratory, USA, ⁴NSLS-II, Brookhaven National Laboratory, USA, ⁵SLAC National Accelerator Laboratory, USA

XOPT4-2 16:00

Metrology of Resistive Element Adjustable Length (REAL) cooling for sub-nanometer figure preservation in high heat load FEL optics

Corey Hardin, May Ling Ng, Daniel Morton, Lance Lee, Lin Zhang, Daniele Cocco
SLAC National Accelerator Laboratory, USA

XOPT4-3 16:15

Accuracy of Estimating the X-ray FEL Pulse Energy from Electron Beam Energy Loss Measurement

Yiping Feng, Franz-Josef Decker
SLAC National Accelerator Laboratory, USA

XOPT4-4 16:30 【Program change】

Drilling ultra-high aspect ratio holes with an X-ray laser

Harald Sinn
European XFEL, Germany

XOPT4-5 16:45

Reflection self-seeding at SACLA

Ichiro Inoue¹, Taito Osaka¹, Takahiro Inagaki¹, Shunji Goto^{1,2}, Toru Hara¹, Yuichi Inubushi^{1,2}, Ryota Kinjo¹, Haruhiko Ohashi^{1,2}, Takashi Tanaka¹, Kazuaki Togawa¹, Kensuke Tono^{1,2}, Hitoshi Tanaka¹, Makina Yabashi^{1,2}
¹RIKEN SPring-8 Center, Japan, ²Japan Synchrotron Radiation Research Institute, Japan

17:00-17:15

XOPT5: Source

Chair: Harald Sinn
European XFEL, Germany

XOPT5-1 17:00

X-ray Source Technology for High Throughput in the Home-Laboratory and Tomography Applications

Emil Espes, Ulf Lundström, Julius Hällstedt, Mikael Otendal, Per Takman, Tomi Tuohimaa
Excillum AB, Sweden

----- 17:15-19:00 Break/Move -----

19:00-21:00

XOPT Banquet

The Japanese restaurant (“海宝” , Kaihou)

Wednesday, April 25

9:00-12:10

OPIC Plenary session

Room 501+502

----- 12:10-13:30 Lunch -----

13:30-15:00

Joint session (ALPS, HEDS, XOPT)

Room 303

Chairs: Ryosuke Kodama
Osaka University, Japan
Hitoki Yoneda

The University of Electro-Communications, Japan
Makina Yabashi
RIKEN SPring-8 Center, Japan

HEDSj-1 13:30

(Invited) Manipulating Electrons with Intense Laser Pulses

Victor Malka^{1,2}
¹Laboratoire d'Optique Appliquée, France, ²Weizmann Institute of Science, Israel

ALPSj-1 14:00

(Invited) Development and Commissioning of a 20 fs, 4 PW Laser

Junghun Shin¹, Hyung Taek Kim^{1,2}, Seong Ku Lee^{1,2}, Jae Hee Sung^{1,2}, Hwang Woon Lee¹, Jin Woo Yoon^{1,2}, Cheonha Jeon¹, Chang Hee Nam^{1,3}

¹Center for Relativistic Laser Science, Institute for Basic Science, South Korea, ²Advanced Photonics Research Institute, Gwangju Institute of Science and Technology, South Korea, ³Department of Physics and Photon Science, GIST, South Korea

XOPTj-1 14:30

(Invited) European XFEL – New Opportunities for X-ray Science

Robert Krarup Feidenhansl
European XFEL, Germany

----- 15:00-15:30 Break-----

15:30-16:30

XOPT6: Imaging II

Chair: Hidekazu Mimura
The University of Tokyo, Japan

XOPT6-1 15:30

(Invited) Ptychographic X-ray computed tomography - An outlook for diffraction-limited sources

Manuel Guizar-Sicairos, Esther H. R. Tsai, Michal Odstrcil
Swiss Light Source, Switzerland

XOPT6-2 16:00

(Invited) X-ray nano-imaging and nano-analysis using multilayer coated Kirkpatrick-Baez optics

Peter Cloetens¹, Julio Cesar da Silva¹, Alexandra Pacureanu¹, Yang Yang¹, Sylvain Bohic^{1,2}, Murielle Salome¹, Lionel Andre¹, Raymond Barrett¹, Christian Morawe¹, Peter van der Linden¹, Francois Villar¹

¹European Synchrotron Radiation Facility, France, ²University of Grenoble Alpes, France

16:30-17:15

XOPT7: Optics III (reflective)

Chair: Hidekazu Mimura
The University of Tokyo, Japan

XOPT7-1 16:30

Compact and large-magnification full-field X-ray microscope using concave-convex imaging mirrors

Jumpei Yamada¹, Satoshi Matsuyama¹, Yasuhisa Sano¹, Yoshiki Kohmura², Makina Yabashi², Tetsuya Ishikawa², Kazuto Yamauchi¹

¹Osaka University, Japan, ²RIKEN SPring-8 Center, Japan

XOPT7-2 16:45

Design of 160-mm and 300-mm Long Elliptically Bent Hard X-ray Mirrors with Precision Compact Lamellar Flexure Bending Mechanism

Deming Shu¹, Aiguo Li², Steven P. Kearney¹, Chengwen Mao², Jayson Anton^{1,3}, Ross Harder¹, X. Shi¹, Tim Mooney¹, Lahsen Assoufid¹

¹APS, Argonne National Laboratory, USA, ²SSRF, Shanghai Institute of Applied Physics, China, ³University of Illinois at Chicago, USA

XOPT7-3 17:00

The commission of Montel Optics at Taiwan Photon Source

Gung-Chian Yin, Bo-Yi Chen, Chien-Yu Lee, Xiao-Yun Li, Bi-Hsuan Lin, Shao-Chin Tseng, Shih-Hung Chang, Mau-Tsu Tang

National Synchrotron Radiation Research Center, Taiwan

----- 17:15-18:00 Break/Move -----

18:00-20:00

OPIC Reception

Thursday, April 26

9:00-10:30

Room 313+314

XOPT8: Imaging III

Chair: Taito Osaka
RIKEN SPring-8 Center, Japan

XOPT8-1 9:00

(Invited) Recent Advance and Future Potential in X-ray Imaging with Gratings

Wataru Yashiro

Tohoku University, Japan

XOPT8-2 9:30

The interaction of infrared laser radiation with polypropylene studied by pink-beam 4D X-ray Phase CT

Karol Vegso¹, Yanlin Wu², Hidekazu Takano², Masato Hoshino¹, Atsushi Momose²

¹Japan Synchrotron Radiation Research Institute, Japan, ²Tohoku University, Japan

XOPT8-3 9:45

High-fluence x-ray focusing system for high-resolution coherent diffraction imaging at SACLA

Hirokatsu Yumoto^{1,2}, Takahisa Koyama^{1,2}, Takashi Kimura³, Akihiro Suzuki³, Takashi Kameshima^{1,2}, Yasumasa Joti^{1,2}, Kensuke Tono^{1,2}, Naoya Tani³, Tatsuro Tachibana³, Yusuke Konishi³, Yoshitaka Bessho⁴, Yoshinori Nishino³, Makina Yabashi^{1,2}, Haruhiko Ohashi^{1,2}

¹Japan Synchrotron Radiation Research Institute, Japan, ²RIKEN SPring-8 Center, Japan, ³Hokkaido University, Japan, ⁴Academia Sinica, Taiwan

XOPT8-4 10:00

(Invited) Radiation-Damage-Free Imaging of Solid Electrolytes for Lithium-Ion Batteries by Single-Shot Coherent Diffraction Imaging

Takashi Kimura

Hokkaido University, Japan

----- 10:30 Move -----

10:30-12:00

Exhibition Hall A

XOPTp9 Poster Session

XOPTp9-1

Feasibility study of phase-contrast X-ray micro-CT using diffraction enhanced imaging

Akio Yoneyama^{1,2}, Rika Baba², Kazuyuki Hyodo³

¹Saga Light Source, Japan, ²Hitachi Ltd., Japan, ³High Energy Accelerator Research Organization, Japan

XOPTp9-2

X-ray stroboscopic phase tomography with Talbot interferometer and white synchrotron radiation

Yanlin Wu, Hidekazu Takano, Atsushi Momose

Tohoku University, Japan

XOPTp9-3

Development of X-ray phase laminography microscope based on grating interferometry

Hidekazu Takano¹, Karol Vegso², Masato Hoshino², Yanlin Wu¹, Atsushi Momose^{1,2}

¹Tohoku University, Japan,

²Japan Synchrotron Radiation Research Institute, Japan

XOPTp9-4

Imaging thermoresponsive gold nanoparticles in solution by X-ray laser diffraction

Akihiro Suzuki¹, Takashi Kimura¹, Ryo Iida², Hideyuki Mitomo^{1,5}, Yasumasa Joti³, Yoshitaka Bessho⁴, Ken-ichi Niikura⁶, Kuniharu Ijro^{1,5}, Yoshinori Nishino¹

¹Research Institute for Electronic Science, Hokkaido University, Japan, ²Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan, ³Japan Synchrotron Radiation Research Institute, Japan, ⁴Academia Sinica, Taiwan, ⁵Global Institution for Collaborative Research and Education, Hokkaido University, Japan, ⁶Nippon Institute of Technology, Japan

XOPTp9-5

Parametric-Down Conversion of X-rays into the Optical Regime

Aviad Schori¹, Christina Bomer², Denis Borodin¹, Steve Collins³, Bllanka Detlefs⁴, Marco Moretti Sala⁴, Shimon Yudovich¹, Sharon Shwartz¹

¹Bar-Ilan University, Israel, ²European XFEL, Germany, ³Diamond Light Source, United Kingdom, ⁴European Synchrotron Radiation Facility, France

XOPTp9-6

Study of silicon microstructures by x-ray high resolution diffractometry based on refractive optics

Petr Ershov¹, Alexander Barannikov¹, Ivan Lyatun¹, Dmitriy Zverev¹, Sergey Kuznetsov², Vyacheslav Yunkin², Irina Snigireva³, Anatoly Snigirev¹

¹Immanuel Kant Baltic Federal University, Russia, ²Institute of Microelectronics Technology and High-Purity Materials, Russia, ³European Synchrotron Radiation Facility, France

XOPTp9-7

SwissFEL photon diagnostics for soft, tender and hard X-rays

Christopher A. Arrell, Jens Rehanek, Pavle Juranic, and the SwissFEL team

Paul Scherrer Institut, Switzerland

XOPTp9-8

Synchrotron radiation-based anomalous dispersion X-ray powder diffraction studies of Pb/Bi distributions in ferroelectric oxides

Kun Lin¹, Yili Cao¹, Kenichi Kato², Xianran Xing¹

¹University of Science and Technology Beijing, China, ²RIKEN SPring-8 Center, Japan

XOPTp9-9

Canceled

XOPTp9-10

Theory and fabrication feasibility of ultra short focal length refractive lenses for hard X-Rays

Lucia Alianelli, John Sutter, Kawal Sawhney
Diamond Light Source Ltd, United Kingdom

XOPTp9-11

X-ray refractive parabolic axicon lens

Dmitrii Zverev¹, Alexandr Barannikov¹, Irina Snigireva², Anatoly Snigirev¹

¹Immanuel Kant Baltic Federal University, Russia, ²European Synchrotron Radiation Facility, France

XOPTp9-12

Phase-contrast imaging using X-ray nanointerferometer based on Si refractive bilenses

Dmitrii Zverev¹, Victor Kohn², Irina Snigireva³, Anatoly Snigirev¹

¹Immanuel Kant Baltic Federal University, Russia, ²Russian Research Center Kurchatov Institute, Russia, ³European Synchrotron Radiation Facility, France

XOPTp9-13

Beryllium X-ray optical properties: from refractive lens to diffuser

Ivan Lyatun¹, Peter Ershov¹, Svetlana Medvedeva¹, Elena Kozlova², Maxim Sheverdyayev², Vladimir Volkov³, Alexandr Semenov², Vladimir Gorlevsky², Valery Savin¹, Irina Snigireva⁴, Anatoly Snigirev¹

¹Immanuel Kant Baltic Federal University, Russia, ²A. A. Bochar High-Technology Scientific Research Institute for Inorganic Materials, Russia, ³Russian Academy of Sciences, Russia, ⁴European Synchrotron Radiation Facility, France

XOPTp9-14

2D polymer refractive microlenses fabricated by additive technology

Aleksandr Barannikov¹, Ksenya Abrashitova^{1, 2}, Vladimir Bessonov², Alexander Petrov^{1, 2}, Natalya Kokareva², Kirill Safronov², Petr Ershov¹, Nataliya Klimova¹, Ivan Lyatun¹, Vyacheslav Yunkin³, Maxim Polikarpov¹, Irina Snigireva⁴, Andrey Fedyanin², Anatoly Snigirev¹

¹Immanuel Kant Baltic Federal University, Russia, ²Lomonosov Moscow State University, Russia, ³Russian Academy of Science, Russia, ⁴European Synchrotron Radiation Facility, France

XOPTp9-15

Mini-Trasfocator for X-ray Microscopy

Aleksandr Barannikov, Petr Ershov, Anatoly Lushnikov, Ivan Lyatun, Anton Narikovich, Igor Panormov, Maxim Polikarpov, Aleksandr Sinitsyn, Dmitry Zverev, Anatoly Snigirev

Immanuel Kant Baltic Federal University, Russia

XOPTp9-16

High-aspect-ratio X-ray optical devices fabricated from Pt-based metallic glass

Wataru Yashiro¹, Masanari Datekyu², Masashi Nakao³, Yoshiki Kohmura⁴, Hidemi Kato²

¹Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan, ²Institute of Materials Research, Tohoku University, Japan, ³Micro System Integration Center, Tohoku University, Japan, ⁴RIKEN SPring-8 Center, Japan

XOPTp9-17

Two-dimensional VLS gratings from Berlin (NOB GmbH)

Heike Loechel
Neutron Optics Berlin, Germany

XOPTp9-18

Development of Channel-cut Crystal X-ray Monochromators for Low-emittance X-ray Sources Using High-precision Plasma Etching

Yuki Morioka¹, Takashi Hirano¹, Yasuhisa Sano¹, Satoshi Matsuyama¹, Taito Osaka², Tetsuo Katayama³, Makina Yabashi², Kazuto Yamauchi¹

¹Osaka University, Japan, ²RIKEN SPring-8 Center, Japan, ³Japan Synchrotron Radiation Research Institute, Japan

XOPTp9-19

Development of Fabrication Method of Speckle-free Channel-cut Crystal X-ray Monochromators with Sub-mm Channel Width

Takashi Hirano¹, Yuki Morioka¹, Yasuhisa Sano¹, Taito Osaka^{1,2}, Satoshi Matsuyama¹, Makina Yabashi², Kazuto Yamauchi¹
¹Osaka University, Japan, ²RIKEN SPring-8 Center, Japan

XOPTp9-20

Interface engineering of periodic multilayer EUV and x-ray mirrors

JiaoLing Zhao, Meiping Zhu, Kui Yi, Hongji Qi, Hongbo He, Jianda Shao
Chinese Academy of Sciences, China

XOPTp9-21

The Commission of Mirror Holder for X-ray Nanoprobe

BoYi Chen¹, Gung-Chian Yin¹, Chien-Yu Lee¹, Ming-Ying Hsu¹, Bi-Hsuan Lin², Shao-Chin Tseng², Xiao-Yun Li², Huang-Yeh Chen², Jian-Xing Wu², Shih-Hung Chang³, Mau-Tsu Tang²
¹Experimental Technique Group, National Synchrotron Radiation Research Center, Taiwan, ²X-ray and IR imaging Group, National Synchrotron Radiation Research Center, Taiwan, ³Beamline Group, National Synchrotron Radiation Research Center, Taiwan

XOPTp9-22

New figuring model based on surface slope profiles for X-ray optics

Lin Zhou¹, Hao Hu¹, Ci Song¹, Shanyong Chen¹, Guipeng Tie¹, Mourad Idir²
¹National University of Defense Technology, China, ²NSLS II, Brookhaven National Laboratory, USA

XOPTp9-23

Measurement of a spherical mirror with sub-50 pm repeatability by three-dimensional nanoprofiler using normal vector tracing method

Yui Toyoshi, Ryo Kizaki, Hiroki Shiraji, Takao Kitayama, Jungmin Kang, Kazuya Yamamura, Katsuyoshi Endo
Osaka University, Japan

XOPTp9-24

Development of nanofocusing system for X-ray free electron Laser (Study of nanobeam characterization)

Takato Inoue¹, Satoshi Matsuyama¹, Shogo Kawai¹, Hirokatsu Yumoto², Yuichi Inubushi², Takahisa Koyama², Kensuke Tono², Taito Osaka³, Haruhiko Ohashi², Makina Yabashi³, Tetsuya Ishikawa³, Kazuto Yamauchi¹
¹Osaka University, Japan, ²Japan Synchrotron Radiation Research Institute, Japan, ³RIKEN SPring-8 Center, Japan

XOPTp9-25

Development of high-resolution X-ray imaging optical system using multilayer imaging mirrors

Kentaro Hata¹, Jumpei Yamada¹, Satoshi Matsuyama¹, Yasuhisa Sano¹, Yoshiki Kohmura², Makina Yabashi², Tetsuya Ishikawa², Kazuto Yamauchi^{1,3}
¹Department of Precision Science and Technology, Graduate School of Engineering, Osaka University, Japan, ²RIKEN SPring-8 Center, Japan, ³Center for Ultra-Precision Science and Technology, Graduate School of Engineering, Osaka University, Japan

XOPTp9-26

Development of adaptive X-ray focusing system based on a combination of a piezoelectric bimorph mirror and a mechanical mirror bender

Hiroyuki Yamaguchi¹, Takumi Goto¹, Hiroki Hayashi¹, Satoshi Matsuyama¹, Junki Sonoyama², Kazuki Akiyama², Hiroki Nakamori³, Yasuhisa Sano¹, Yoshiki Kohmura⁴, Makina Yabashi⁴, Tetsuya Ishikawa⁴, Kazuto Yamauchi¹
¹Osaka University, Japan, ²TOYAMA, Japan, ³JTEC Corporation, Japan, ⁴RIKEN SPring-8 Center, Japan

XOPTp9-27

Thermal Analysis for Ion Beam Processing of the Unimorph Deformable Mirror

Zhanbin Fan^{1,2}, Chaoliang Guan^{1,2}, Guipeng Tie^{1,2}, Shanyong Chen^{1,2}
¹National University of Defense Technology, China, ²Hunan Key Laboratory of Ultra-precision Machining Technology, China

XOPTp9-28

Figure correction of ellipsoidal x-ray mirrors by ion beam sputtering deposition

Shunya Yokomae, Hiroto Motoyama, Hidekazu Mimura
The University of Tokyo, Japan

XOPTp9-29

Development of a high precision processing for master mandrel of soft X-ray ellipsoidal mirror

Yuusuke Matsuzawa, Shinji Okawa, Hidekazu Mimura
The University of Tokyo, Japan

XOPTp9-30

Imaging Quality of HHG Achromatic Microscope Using Wolter Mirrors

Satoru Egawa¹, Hiroto Motoyama¹, Atsushi Iwasaki², Kaoru Yamanouchi², Hidekazu Mimura¹
¹Department of Precision Engineering, School of Engineering, the University of Tokyo, Japan, ²Department of Chemistry, School of Science, the University of Tokyo, Japan

XOPTp9-31

Current X-ray mirrors and metrology of JTEC Corporation

Hiroki Nakamori^{1,2}, Hiromi Okada¹, Shinya Aono¹, Kazuto Yamauchi², Takashi Tsumura¹
¹JTEC Corporation, Japan, ²Osaka University, Japan

----- 12:00-13:30 Lunch -----

13:30-15:00

Room 313+314

XOPT10: Optics IV (ML/diffractive)

Chair: Wataru Yashiro
Tohoku University, Japan

XOPT10-1 13:30

(Invited) Multilayer Laue Lens Fabrication and Measurement Results

Raymond P. Conley^{1,2}, Nathalie Bouet², Albert T. Macrander¹, Jörg Maser¹, Deming Shu¹, Yong S. Chu², Juan Zhou², Evgeny Nazaretski², Hanfei Yan², Xiaojing Huang²
¹APS, Argonne National Laboratory, USA, ²NSLS-II, Brookhaven National Laboratory, USA

XOPT10-2 14:00

A tender X-ray PGM for tuning the photon energy interval 0.6 – 6 keV with a single plane grating

Werner Jark

Elettra - Sincrotrone Trieste, Italy

XOPT10-3 14:15

Soft X-Ray and EUV diffraction gratings design for space and synchrotron applications

Arnaud COTEL

HORIBA Scientific, France

XOPT10-4 14:30

Fabrication of novel gratings to improve spatial resolution in X-ray phase imaging

Talgat Mamyrbayev¹, Katsumasa Ikematsu^{1, 2}, Pascal Meyer¹, Marcus Zuber³, Angelica Cecilia³, Atsushi Momose², Juergen Mohr¹

¹*Institute of Microstructure Technology, Karlsruhe Institute of Technology, Germany*, ²*Tohoku University, Japan*, ³*Institute for Photon Science and Synchrotron Radiation, Karlsruhe Institute of Technology, Germany*

XOPT10-5 14:45

Multilayer Optics and Scatterless Apertures for High-Brilliance X-ray Sources

Joerg Wiesmann, Frank Hertlein, Jürgen Graf, Carsten Michaelsen

Incoatec GmbH, Germany

----- 15:00-15:30 Break-----

15:30-15:45

XOPT11: Methods

Chair: Diling Zhu

SLAC National Accelerator Laboratory, USA

XOPT11-1 15:30

Machine and Deep Learning Exploration for Spectral X-ray Computed Tomography Materials Classification Applications

Edward Steven Jimenez¹, April Suknot², Kyle Thompson³, Ryan Goodner³, Srivathsan Koundinyan¹

¹*Sandia National Laboratories - Mission Algorithms R&S, USA*, ²*Sandia National Laboratories - R&D Systems Architecture, USA*, ³*Sandia National Laboratories - Non-Destructive Diagnostics, USA*

15:45-16:30

XOPT12: Optics V (reflective/nonlinear)

Chair: Diling Zhu

SLAC National Accelerator Laboratory, USA

XOPT12-1 15:45

X-ray Ring-Focusing Mirror

Hidekazu Mimura¹, Yoko Takeo¹, Hiroto Motoyama¹, Yasunori Senba², Hikaru Kishimoto², Haruhiko Ohashi²

¹*The University of Tokyo, Japan*, ²*Japan Synchrotron Radiation Research Institute, Japan*

XOPT12-2 16:00

Ghost Imaging with Paired X-ray Photons

Aviad Schori^{1, 2}, Denis Borodin^{1, 2}, Kenji Tamasaku², Sharon Shwartz^{1,2}

¹*Bar-Ilan University, Israel*, ²*RIKEN SPring-8 Center, Japan*

XOPT12-3 16:15

Evidence for collective nonlinear interactions in x ray into ultraviolet parametric down conversion

Denis Borodin¹, Aviad Schori¹, Jean-Pascal Rueff², James Ablett², Sharon Shwartz¹

¹*Bar Ilan University, Israel*, ²*Synchrotron SOLEIL, France*

16:30-16:35

Closing

Closing Remarks

Kazuto Yamauchi

Osaka University, Japan