# The 12th Symposium on X-ray Imaging Optics

**November 18 (Mon) - 20 (wed), 2013**

**Osaka University Nakanoshima Center, Osaka, Japan**

## Program (Oral Session)

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<td>18th Nov. (Mon) 10F (Saji-Keizo Hall)</td>
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| 12:50 | Mihiro Yanagihara  
Tohoku University | Opening Remark |
| **Session I: Astrophysics I** | Chair : Koujun YAMASHITA (Nagoya Univ.) |
| O-1 | 13:00 | Takashi Okajima, Peter Serlemitsos, and Yang Soong  
*NASA's Goddard Space Flight Center* | Low-cost Light-weight X-ray Imaging Telescope |
| O-2 | 13:30 | Anthony Beaucamp and Yoshiharu Namba  
*Chubu University* | Manufacturing of Aspherical Molds for Next Generation X-Ray Telescopes |
| O-3 | 13:55 | Takuya Miyazawa  
*Nagoya University Graduate School of Science, Division of Particle and Astrophysical Science* | Development of the Hard X-ray Telescope onboard ASTRO-H satellite |
| O-4 | 14:15 | Goro Sato and the ASTRO-H HXI/SGD team  
*RIKEN, ISAS/JAXA* | CdTe Imagers for Hard X-ray Astronomy |
| O-5 | 14:40 | Hisanori Suzuki  
*Solid State Division, Hamamatsu Photonics K.K.* | X-ray CCD image sensors by Hamamatsu |
| | | | **Coffee Break** |
| O-6 | 15:35 | Takaki Hatsui  
*RIKEN SPring-8 Center* | X-ray 2D detectors for SACLA: Current Status and Future Perspective |
| O-7 | 16:00 | Lothar W.J. Strueder  
*PNSensor GmbH, Research and Development of Advanced Radiation Detectors* | High speed X-ray imaging and spectroscopy with large dynamic range and high spatial resolution |
| O-8 | 16:30 | Richard L Kelley  
*NASA/Goddard Space Flight Center* | The Thermal Detection of Energy Quanta |
| O-9 | 17:00 | John P. Doty¹, and Keith C. Gendreau², Gregory Y. Prigozhin³, Joel S. Villasenor⁴, Zaven Arzoumanian⁵  
¹ *Noqsi Aerospace Ltd.*, ² *NASA/Goddard Space Flight Center*, ³ *Massachusetts Institute of Technology* | Nanosecond Timing with a Silicon Drift Detector |
| O-10 | 17:25 | Tatsuhiro Naka  
*Nagoya University, Institute for Advanced Research/KMI • Center for Experimental Studies* | Combined analysis between the hard X-ray microscope and optical microscope for the directional dark matter search with high resolution nuclear emulsion |
| | | | **Welcome buffet** (10F (Saji-Keizo Hall)) |

| 19th Nov. (Tue) 10F (Saji-Keizo Hall) | |
| **Session II: X-ray microscopy I** | Chair : Sadao AOKI (Tsukuba Univ.) |
| O-11 | 8:45 | Taihei Mukaidê¹, Masatoshi Watanabe¹, Kazuhiro Takada¹, Atsuo Iida², Kazunori Fukuda¹ and Takashi Noma  
¹ *Canon Inc.*, ² *Photon Factory* | Effective atomic number imaging by measuring x-ray absorption and phase shift |
| O-12 | 9:10 | Akira Saito¹², Hiromutsu Miki¹, Yudai Furudate¹, Yuta Kusui¹, Megumi Akai-Kasaya¹, Yoshihito Tanaka², Yoshiki Kohmura², Tetsuya Ishikawa², Yuji Kuwahara¹² and Masakazu Aono³  
¹ *Osaka University*, ² *RIKEN/SPring-8*, ³ *NIMS* | Pico-imaging of Element Contrast & X-ray-Induced Atomic Motion using SR-STM |
| O-13 | 9:35 | Akihisa Takeuchi, Yoshio Suzuki, and Kentaro Uesugi  
*JASRI/SPring-8* | Simultaneous measurement of phase and absorption contrast three-dimensional imaging by using scanning-imaging x-ray microscope |
| | | | **Coffee Break** |
## X-ray microscopy II

**Chair:** Yasushi KAGOSHIMA (Hyogo Univ.)

**O-14** 10:30 Masato Hoshino, Kentaro Uesugi, Akihisa Takeuchi, Yoshio Suzuki and Naoto Yagi  
*JASRI/SPRING-8*
Development of X-ray laminography microscope for observing laterally extended object

**O-15** 10:55 Wataru Yashiro, Katsunori Minami, and Atsushi Momose
1. Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University, Japan,  
2. X-ray R&D Department, MARS TOHKEN SOLUTION Co. Ltd., Japan
X-ray projection and imaging microscopes with a phase grating

**O-16** 11:20 Tetsuo Harada, Yutaka Nagata, Takeo Watanabe, Hiroo Kinoshita
1. University of Hyogo,  
2. RIKEN,  
3. CREST/JST
Development of Coherent EUV Scatterometry Microscope with High-Order-Harmonic EUV source

### Session III: XFEL & related topics

**Chair:** Atsushi MOMOSE (Tohoku Univ.)

**O-17** 13:00 Sébastien Boutet  
*SLAC National Accelerator Laboratory*
Status and future challenges of LCLS

**O-18** 13:30 Makina Yabashi  
*RKE SPRING-8 Center*
Status and future of SACLA

**O-19** 13:55 Kenji Tamasaku  
*RKE SPRING-8 Center*
Nonlinear response induced by focused X-ray laser

**14:20 Coffee Break**

### Session IV: Coherent Diffraction Imaging

**Chair:** Yoshio SUZUKI (JASRI/SPRING-8)

**O-20** 14:50 Yoshinori Nishino, Takashi Kimura, Yasumasa Jobi, Yoshitaka Bessho
1. RIES, Hokkaido University,  
2. JASRI/SPRING-8,  
3. RIKEN SPING-8 Center
Coherent imaging using X-ray free-electron lasers

**O-21** 15:15 Patrik Vagovič, Angelica Cecilia, Elias Hamann, Konstantin Pavlov, Markus Zuber, Atsushi Momose, Wataru Yashiro, Margie Olbinado, Thomas Koenig
1. Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University, Japan,  
2. ANKA-Institute for Synchrotron radiation, Germany,
Coherent X-ray imaging with the in-line Bragg Magnifier

**O-22** 15:40 Yukio Takahashi
(16:05) *Graduate School of Engineering, Osaka University*
High-resolution ptychography using focused hard x-ray beam

### Poster Session (7F, Room 703)

### 18:30 Banquet  
*Osaka Science Museum (web site is linked here)*

### 20th Nov. (Wed) 10F (Saji-Keizo Hall)

**Session V: X-ray microscopy & element technologies I**

**Chair:** Hiroo KINOSHITA (Hyogo Univ.)

**O-23** 9:00 Masataka Kado  
*Japan Atomic Energy Agency*
Structural study of cellular organelles with a laser-plasma soft x-ray microscope

**O-24** 9:25 Takeshi Higashiguchi  
*CORE, Utsunomiya University*
Feasibility study of efficient high-Z plasma soft x-ray sources

**O-25** 9:50 Mitsunori Toyoda  
*Institute of Multidisciplinary Research for Advanced Materials, Tohoku University*
Design, fabrication, and test of a novel wide field microscope objective for EUV multiscale imaging

**10:15 Coffee Break**

**X-ray microscopy & element technologies II**

**Chair:** Mihiro YANAGIHARA (Tohoku Univ.)

**O-26** 10:35 Takashi Imazono, Masato Koike, Tetsuya Kawachi, Noboru Hasegawa, Masaru Koeda, Tetsuya Nagano, Hirohiko Sasa, Yuki Oue, Zeno Yonezawa, Satoshi Kuramoto, Masami Terauchi, Hideyuki Takahashi, Nobuo Handa, and Takenori Murano
1. Quantum Beam Science Directorate, Japan Atomic Energy Agency  
2. Device Department, Shimadzu Corp.  
3. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University  
4. EO Peripheral Components Business Unit, JEOL Ltd.
Wide band soft x-ray grating spectrographs in the 50-400 eV range and their application to electron microscopes
O-27 11:00 Hidekazu TAKANO  
Graduate School of Material Science, University of Hyogo  
Development of total reflection zone plate for hard x-ray focusing

O-28 11:25 Hidekazu Mimura  
The University of Tokyo  
Development of ellipsoidal mirror for soft X-ray focusing

O-29 11:50 Satoshi Matsuyama  
Osaka University  
Development of achromatic full-field hard X-ray microscopy using four total-reflection mirrors

12:15 Hiroshi Tsunemi  
Osaka University  
Closing Remark