

. Workshops & Meetings

ISSP workshop “Development to polarization-control experiments at SPring-8 BL07LSU: present and future”

Date: February 15, 2013

Place: Lecture Room (A632), 6th Floor, ISSP, the University of Tokyo

The soft X-ray beamline, SPring-8 BL07LSU, generates high-brilliant photon beams of $h\nu=250\sim 2000$ eV and it is designed for the advanced solid state spectroscopy. The beamline and the end-stations have recently shown high performances in optics and instruments that were beyond expectations in the original plan. New interesting results have been obtained from the four beamline endstations, the three-dimensional (3D) nano-ESCA, the soft X-ray emission spectroscopy (XES), the time-resolved photoemission spectroscopy (TR-PES), and the free-port. The aim of the workshop is to present the recent outputs, obtained at the beamline under the research proposals by construction teams and general users, and to discuss them with participants.

After a brief report on the present status of the beamline, results from the TR-PES, free-port, 3D nano-ESCA, and XES stations were presented. The new long-term proposals (S2 proposals), accepted for beamtime from October in 2012, were announced and the main proposers have explained details of their experiments. From the coming their beamtime, *in situ* observation of operations in devices and catalysts for modern technology will mainly be carried out at the 3D nano-ESCA, XES, and TR-PES stations. At the workshop, 44 researchers, including many young scientists and students, gathered. The participants were excited with the presentations and made constructive discussion for new science from the beamline.

Program

10:00- Introduction

Masaharu Oshima (Department of Applied Chemistry, the University of Tokyo, SRRO)

10:10-Status of the BL07LSU undulator beamline and a future plan for the polarization control

Iwao Matsuda (ISSP, the University of Tokyo)

10:35- Light source performances of the BL07LSU undulator

Takashi Tanaka (JASRI / SPring-8)

11:00- Application and Future Perspective of Magnetic Materials Studies Using a Polarization Switching Technique of Circularly Polarized Soft X-rays

Tetsuya Nakamura (JASRI / SPring-8)

11:25- Control of polarization state of hard X-rays using a diamond phase retarder

Motohiro Suzuki (JASRI / SPring-8)

11:50- lunch

13:00- Resonant X-ray Diffraction with Circularly Polarized Beam: Research and Development for the Handed Structures

Yoshikazu Tanaka (RIKEN / SPring-8)

13-25- Development and application of high-energy-resolution wide-angle two-dimensional photoelectron micro-spectrometer (DELMA)

Hiroshi Daimon(NAIST)

- 13:50- **Carrier dynamics on semiconductor surfaces studied by time-resolved photoelectron spectroscopy**
Susumu Yamamoto (ISSP, the University of Tokyo)
- 14:15- **Relaxation of Photoexcited Carriers on Single Crystal Anatase TiO₂ Surface**
Kenichi Ozawa (Tokyo Institute of Technology)
- 14:40- **Coffee Break**
- 15:00- **Present Status of 3D nano-ESCA Station**
Koji Horiba (KEK)
- 15:30- **Efforts for in-situ observation of graphene device by using 3D nanoESCA**
Hirokazu Hukidome (Tohoku University)
- 15:50- **Nano-spatial mapping of electronic states on metal-insulator phase separation in VO₈ thin films**
Teruo Kanki (Osaka University)
- 16:15- **Progress in soft X-ray emission: from ultrahighresolution to ambient spectroscopy**
Yoshihisa Harada (ISSP, the University of Tokyo)
- 16:40- **In situ soft x-ray emission spectroscopy for electrodematerials of Li-ion batteries**
Daisuke Asakura (ISSP, the University of Tokyo)
- 17:05- **Hydrogen isotope effect of inelastic soft X-ray scattering on Mg₂FeH₆**
Daiichiro Sekiba (Tsukuba University)
- 17:30- **Closing address**
Fumio Komori (ISSP, the University of Tokyo)