

UVSOR
ACTIVITY REPORT
2004

edited by

Y. Hikosaka, H. Hagiwara, T. Ito

Preface

This Activity Report covers the research activities done at the UVSOR facility in the Institute for Molecular Science (IMS) in FY2004 (April 2004-March 2005). This is the second volume in the new series for the third decade of UVSOR, corresponding to the second year of the use of the UVSOR-II storage ring. Through FY2004, the UVSOR-II ring has been stable in operation at the initial beam current of 350 mA for every injection and the beam emittance of 60 nm-rad. We have now installed a high-power main RF accelerating cavity (see the front cover of this report) to reduce the emittance to 27 nm-rad under the same or better condition of the beam current and lifetime. One of the next upgrade plans is to replace the power supply of the magnet system of the booster synchrotron for the full energy injection to the storage ring next year. A new long undulator beamline BL3U to make possible high-resolution soft X-ray photoelectron and fluorescence spectroscopy (see the front cover) has been stable in operation for FY2004. We have now started a next beamline project using another new long undulator BL7U to make possible high-resolution VUV photoelectron spectroscopy next year. The upgrade of the world-class IR/FIR(THz) beamline BL6B has been successful. We have now started a coherent THz source project by using a seed laser of 90MHz repetition rate.

IMS started an original international collaboration program last year. UVSOR could accept several foreign scientists working in the fields of accelerator science and molecular science. I have asked some of them to review the status and activities of the UVSOR facility. It is a pleasure to include here a letter from Professor Marie-Emmanuelle Couprie, who came to UVSOR three times in FY2004 to work for the storage-ring FEL.

It is another pleasure to report two awards regarding outstanding activities carried out in UVSOR. Last summer Professor Hiroyuki Hama, Tohoku University, received "The FEL Prize in 2004" for his pioneering work in the field of the storage-ring FEL. This spring Mr. Toshio Horigome, Chief of the UVSOR technical division, received "The CSJ Award for Technical Achievements" from the Chemical Society of Japan for his distinguished and long-standing achievements in high-precision and compact instrumentation (see this back page).

We look forward to more exciting activities in the coming year.

April, 2005

Nobuhiro Kosugi
Director of UVSOR