

UVSOR
ACTIVITY REPORT
2005

edited by

M.Hosaka, H.Hagiwara, Y.Hikosaka

Preface

This Activity Report covers the research activities carried out at the UVSOR facility in FY2005 (April 2005-March 2006). This is the third volume in the new series for the third decade of UVSOR, corresponding to the third year of the use of the low-emittance UVSOR-II storage ring. Through FY2005, the UVSOR-II ring has been stable in operation at the initial beam current of 350 mA for every 6-hour injection and the beam emittance of 27 nm-rad. One of the next upgrade plans is to increase the beam energy of the booster synchrotron from 0.6 GeV to 0.75 GeV, to realize the full energy injection in this year and the topping-up operation in the coming year. We have improved and enhanced radiation shields (walls) surrounding the storage ring; the users will be able to stay in the storage ring hall during the injection soon. The number of beamlines has been reduced from 21 to 13 for these four years. At present we have two injections (12-hour beamtime) per day from Tuesday to Friday; decrease of the total number of beamlines will be possibly compensated by the topping-up operation and the increase of beamtime per day and/or per week. Our final goal is to have 8 dipole lines for the 8 bending magnets and 6 undulator/free-electron laser (FEL) lines on the UVSOR-II ring, where ca. 40 % of the circumference is available for insertion devices.

The Ministry of Education, Culture, Sports, Science and Technology (MEXT) has been supporting SPring-8, Photon Factory, and UVSOR as three major facilities in Japan. To fill in the gap between Photon Factory and UVSOR and to enhance advanced study using high-brilliant VUV and soft X-rays, the synchrotron radiation community in Japan was eager to have the fourth major facility with a third generation VUV and soft X-ray storage ring, and finally decided to concentrate on the SuperSOR project of the University of Tokyo as the most promising proposal. Unfortunately, last year the University of Tokyo decided to withdraw the project. This means that UVSOR has been still exclusively responsible for the high-brilliant VUV light source in Japan. To enhance advanced VUV study, we will soon install the fourth undulator of 3m long at one of the 4 long straight sections BL7U and make possible high-resolution VUV photoemission study. The short in-vacuum undulator previously installed at BL7U will be moved to one of the 4 short straight sections BL6U for a new project covering surface chemistry and physics.

We look forward to more exciting activities in the coming years of UVSOR-II.

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Nobuhiro Kosugi
Director of UVSOR