

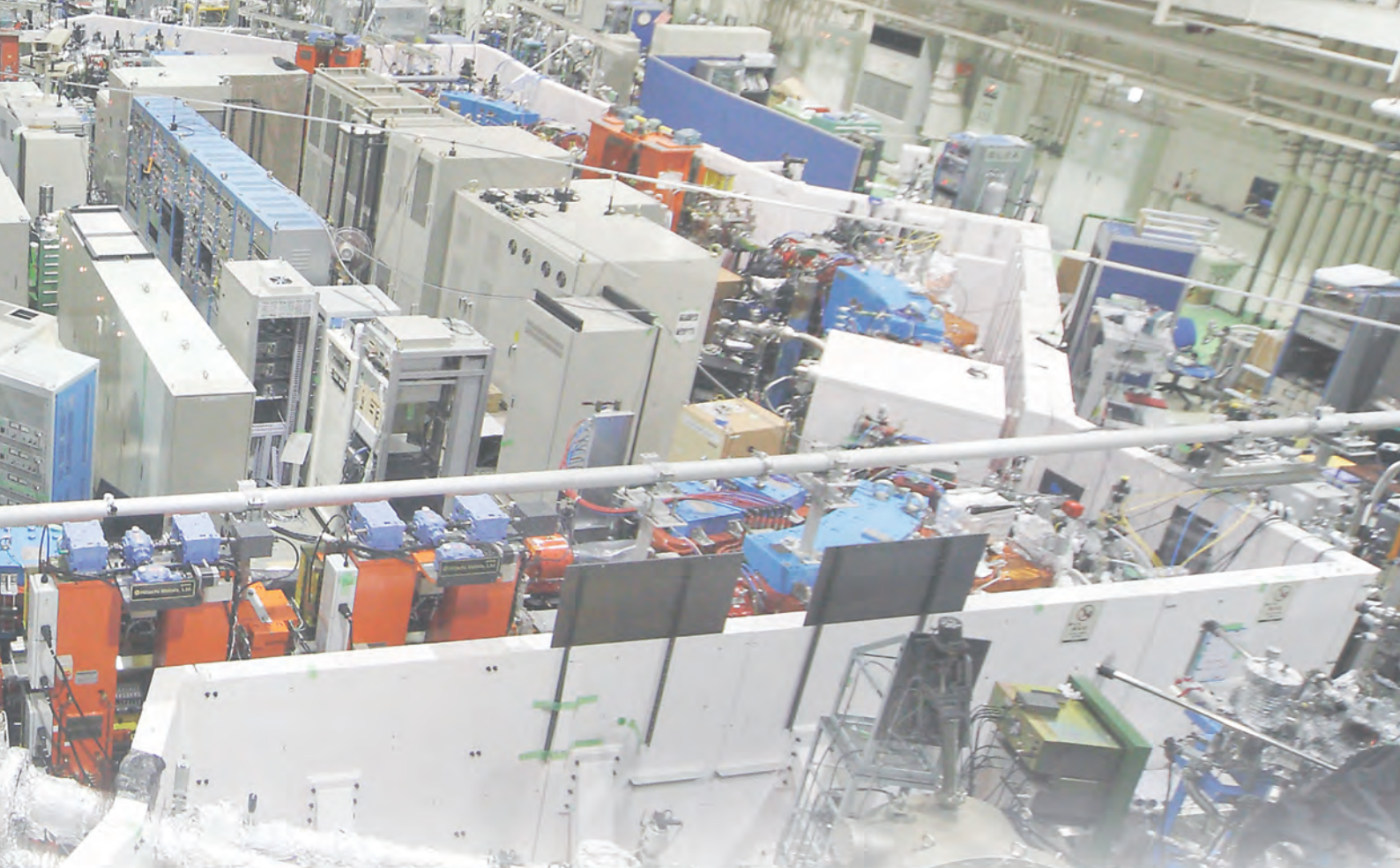


Preface

This Activity Report covers the research activities carried out at the UVSOR-III Synchrotron Research Facility in FY2014 (April 2014-March 2015). This is the second volume in the blue series for the fourth decade of UVSOR, corresponding to the second year of the use of the UVSOR-III storage ring. The UVSOR-III ring has been a stable diffraction-limit light source in the VUV region in top-up operation with the beam current of 300 mA for more than two years.

The UVSOR-III Synchrotron is one of the most advanced low-energy synchrotron radiation (SR) facilities in the world and belongs to the Institute for Molecular Science (IMS), an inter-university research institute of the National Institutes of Natural Sciences (NINS). The inter-university research institutes are supported by MEXT (the Ministry of Education, Culture, Sports, Science and Technology in Japan) to provide opportunities for academic researchers to engage together in activities aimed at exploring future sciences and to utilize large-scale facilities such as SR facilities. They also serve as an international core base to promote cooperation and exchange with overseas research institutes and researchers.

The UVSOR-III Synchrotron has an electron storage ring of approximately 50 m-circumference and roughly a dozen experimental stations on 6 undulator beamlines (3 VUV and 3 in-vacuum soft X-ray undulators) and 8 dipole beamlines. The UVSOR-I ring emitted the first light in 1983, when there were not so many SR facilities in the world and the UVSOR-I Synchrotron had to construct too many branch experimental stations for increasing different kinds of users and experiments in the IR/FIR, VUV, and soft X-ray regions in Japan. Now molecular science based on chemistry is growing up as an interdisciplinary science covering not only chemical and physical sciences but also biosciences and not only molecular scale but also nano and meso scale. Since there are now 8 SR facilities in Japan, UVSOR-III can afford to focus on unique applications in advanced molecular science based on chemistry, through continuous upgrade of the light source and beamlines, as already done from UVSOR-I to UVSOR-II in 2003 and from UVSOR-II to UVSOR-III in 2012.



Professor Masahiro Katoh in Accelerator Physics Division led the UVSOR-III upgrade project to success as 6th Director of UVSOR. I appreciate his great efforts during the directorship from June 2010 to March 2014.

I have to report here two sad news. In March 2014 after we celebrated the 30th anniversary of the first light of the UVSOR-I ring in December 2013, we lost Prof. Emeritus Hiroo Inokuchi, not only one of the key founders and 3rd Director General of IMS, but also the founder and 1st Director of UVSOR. The UVSOR-III Synchrotron is in the direction of Prof. Inokuchi's idea of more than 30 years ago of making UVSOR a unique chemical machine in the world. In November 2014, we lost Mr. Kusuo Sakai who was heading the UVSOR engineer group from the very beginning and then the whole IMS Technical Division before his retirement of March 2003. I would like to express our deepest thanks and sympathies to them.

One of the missions of IMS is to cultivate younger professors and then send them to universities and research institutes. This mission is applied even to the professors who dedicate to UVSOR. In Accelerator Physics Division, Assistant Professor Taro Konomi moved to KEK in March 2015. In Photophysics Division, Associate Professor Kiyohisa Tanaka joined from Osaka University in April 2014, Assistant Professor Shinichiro Ideta joined from Tokyo University of Science in April 2015, and Assistant Professor Masaharu Matsunami will be promoted as Associate Professor of Toyota Technological Institute in June 2015.

In Technical Division, in March 2015, Chief Engineer Mr. Toshio Horigome reached the official retirement age, but is still working for UVSOR-III as a specially appointed engineer. In April 2015, Mr. Eiken Nakamura came back to succeed to the Chief Engineer position after three-year leave for Aichi Synchrotron Research Center to make full use of his rich and deep experiences at UVSOR from the very beginning.

I hope many users will perform excellent work by fully utilizing UVSOR-III Synchrotron as a unique international hub for the SR research in advanced molecular science.

April 2015
Nobuhiro Kosugi
Director of UVSOR-III Synchrotron