

## Status of UVSOR-III Light Source

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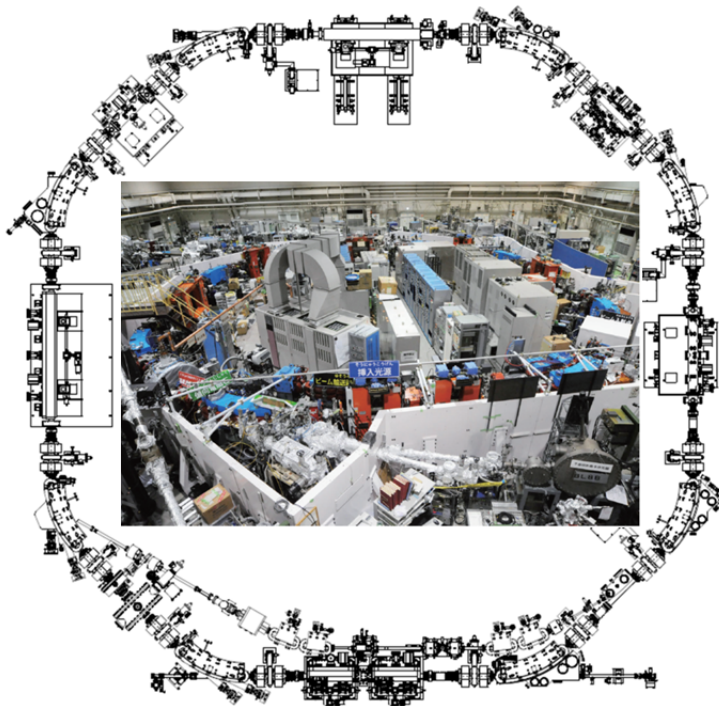
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UVSOR-III is a low energy and compact synchrotron light source. The electron energy is 750 MeV and its circumference is 53.2 m. Its relatively low electron energy is suitable to produce synchrotron radiation in longer wavelength region, from terahertz wave to soft X-rays. Fourteen beamlines are operational [1]. UVSOR-III is an inter-university research facility and about 800 visiting researchers carry out investigations related to molecular/material science every year.

The first light was generated in 1983. To meet the increasing demands for brighter light, we made major upgrade twice in 2003 and 2012 and renamed the accelerator UVSOR-II and UVSOR-III, respectively. Now UVSOR-III is routinely operated in the top-up injection mode with the beam current of 300 mA. It is equipped with six undulators. The emittance is about 17 nm-rad. The high beam current, the low emittance and many undulators make this machine one of the brightest among the low energy light sources below 1 GeV.

At UVSOR, resonator free electron laser has been intensively studied from 1980's. Other new light source technologies such as coherent harmonic radiation, coherent synchrotron radiation, laser Compton gamma-rays, are being developed.

In the conference, status of the accelerator and the coherent light source development are presented.



**Figure 1.** Storage ring of UVSOR-III.

Storage Ring parameter	
Operation Energy	750 MeV
Injection Energy	750 MeV
Beam Current	300 mA
Circumference	53.2 m
No. of Superperiods	4
Straight Sections for I.D.	4 m × 4 1.5 m × 2
Emittance	16.9 nm-rad
Energy Spread	$5.4 \times 10^{-4}$
Betatron Tunes	(3.60, 3.20)

**Table 1.** Parameters of UVSOR-III storage ring.

[1] F. Teshima, this conference.