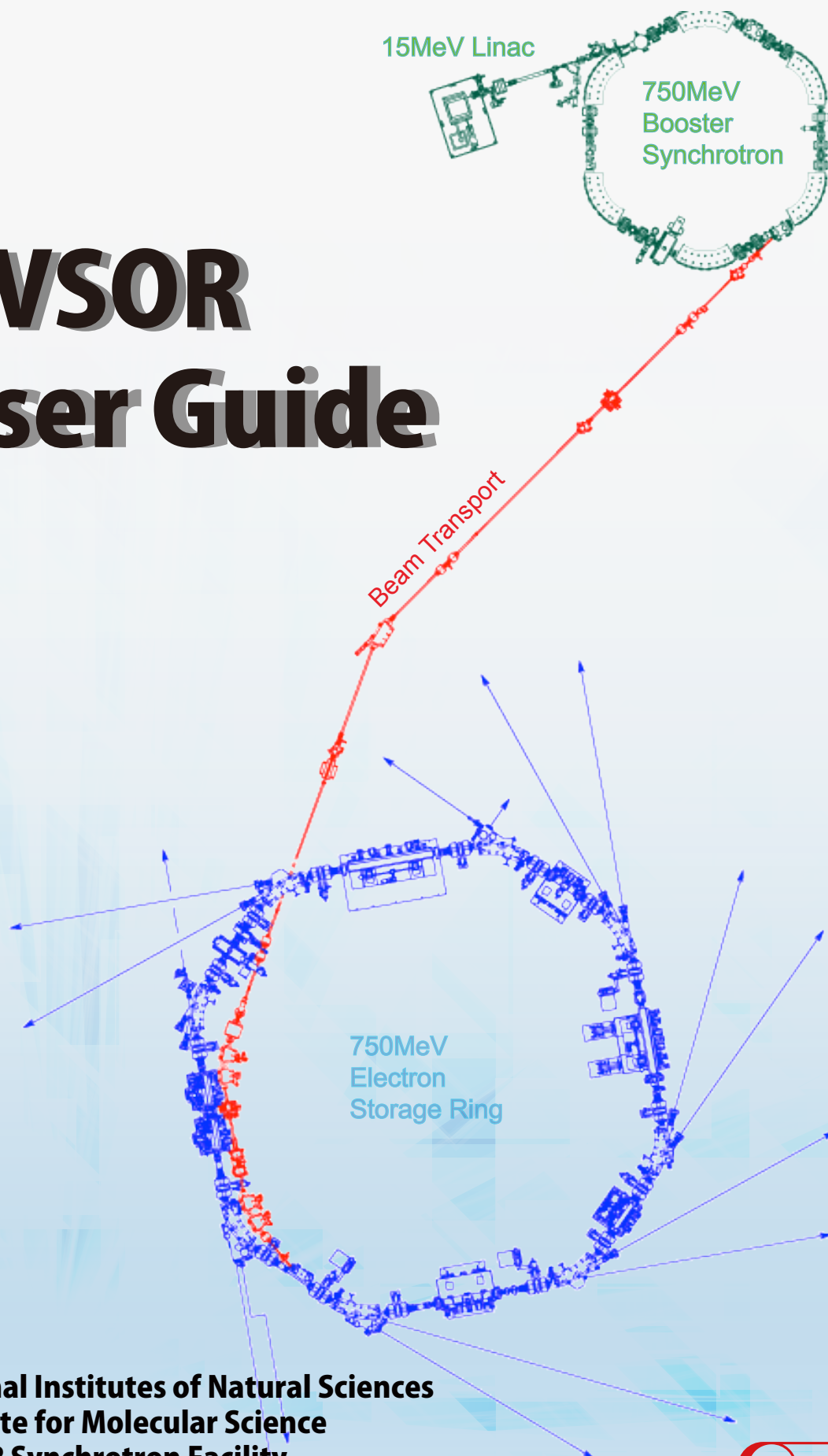


UVSOR User Guide

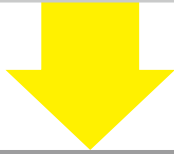


National Institutes of Natural Sciences
Institute for Molecular Science
UVSOR Synchrotron Facility
<https://www.uvsor.ims.ac.jp/eng/>
uvsor@ims.ac.jp

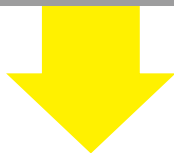
UVSOR III
since 2012

User Procedures

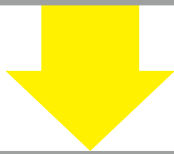
Application



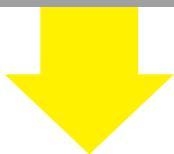
Decision and Machine Time Reservation



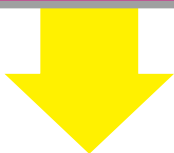
Before Arrival



Upon Arrival



Experiment



After Experiment

Proposal for machine time (twice yearly):

- first semester (April to September): mid-December
- second semester (October to March): mid-June
- Year-round application is available for some beamlines (BLs).

Submit proposals via the website on p.1.

Proposals are reviewed through discussion by the UVSOR Steering Committee and decided by the UVSOR Director. Decision notifications are sent by the Joint Research Section. When your proposal has been accepted, please contact the BL manager to discuss the arrangements for your experimental period.

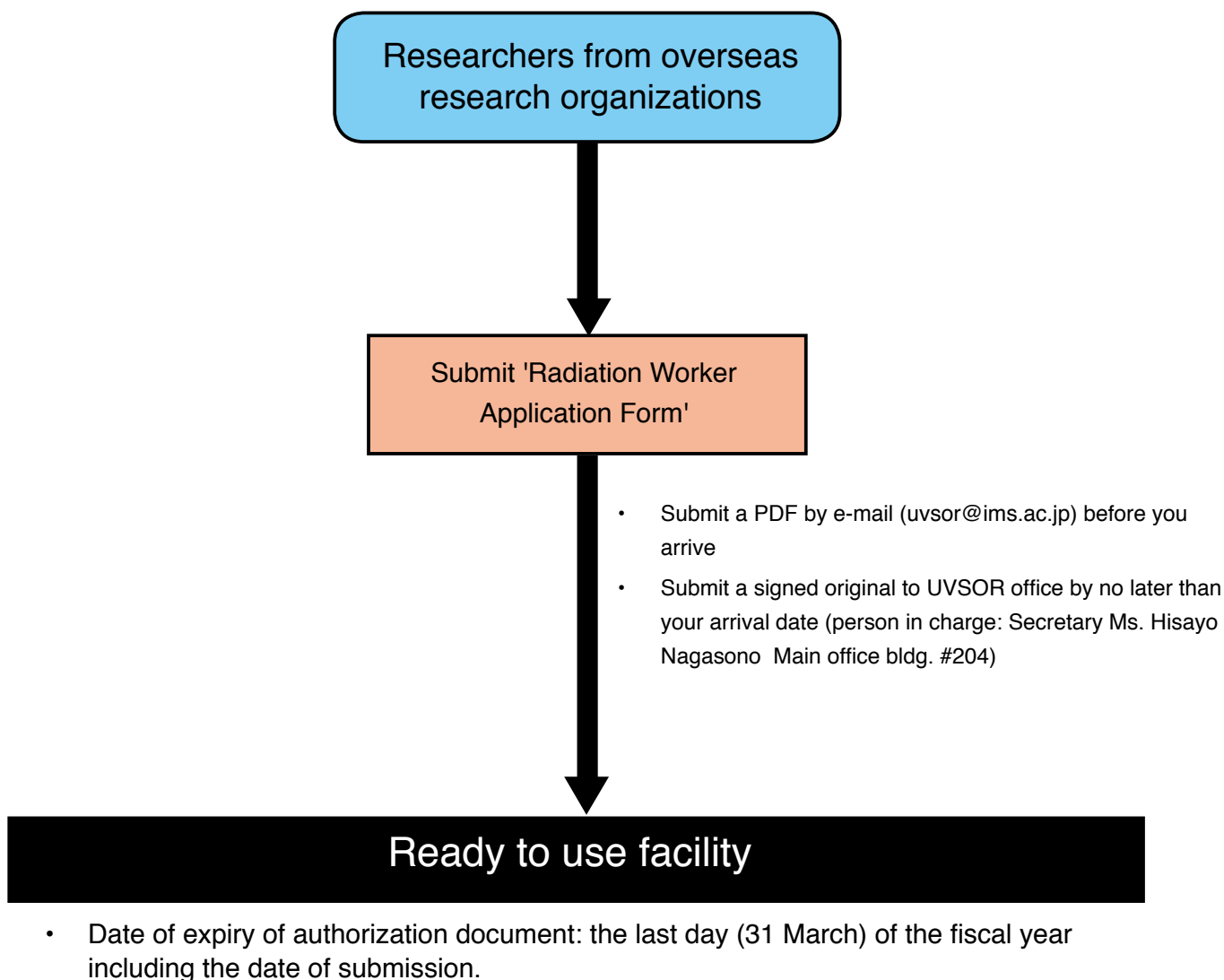
- Please let the BL manager know when you intend to visit.
- You will need to fill out a 'Radiation Worker Application Form.'

- Watch the 'UVSOR Safety Education' DVD in the user room (This is mandatory every year at your first machine-use time).
- Pick up the keys for your accommodation (person in charge: Secretary Ms. Hisayo Nagasono).

- Receive your UVSOR ID card and pocket dosimeter.
- Once you have these you can start your experiments.
- After completing your experiments, fill out and file the 'Record of personal radiation exposure' in the user room.
[See p.8 of this guidebook for details.]

- Submit an 'Activity Report' online through our website by the end of March (details announced on the UVSOR website in about January).
- If the work at UVSOR is published in a scientific journal, please send a PDF of the article.

Submission of a 'Radiation Worker Application Form' is mandatory for external researchers requiring joint use of IMS radiation/X-ray facilities



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APPENDIX

Access

Hotels near UVSOR

Staff Contacts

1. Proposal Applications

Users have the opportunity to submit proposals for machine time twice a year (Usually calls for first- and second-semester applications are sent out to national universities and institutes in about mid-June and mid-December, respectively). In the December call applicants may apply for both semesters. See the following IMS website for a detailed application guide:

http://www.ims.ac.jp/guide/application_requirements.html (in japanese)

You can apply online at:

https://www.nins.jp/nous/index_eng.php (Under Construction)

Tentatively, the submission system is not working. Contact the BL manager when you will intend (See p. 2).

Contacts

Applications	BL manager See p.2 for e-mail address. Names of BL managers are marked with asterisks.
Accommodation	BL manager See p.2 for e-mail address. Names of BL managers are marked with asterisks. For reservation changes on the day contact the Joint Research Section or BL manager Email: r7132@orion.ac.jp TEL: +81 564 55 7133 FAX: +81 564 55 7119
Experiments	BL manager See p.2 for e-mail address. BL managers are marked with asterisks.
Other	Secretary of UVSOR Synchrotron Facility uvsor@ims.ac.jp TEL: +81 564 55 7402 FAX: +81 564 54 7079
Radiation Work	Safety Office ray@ims.ac.jp
Occasional Use Applications	BL manager See p.2 for e-mail address. Names of BL managers are marked with asterisks. When there is vacant machine time, we might accept occasional applications.

1. Proposals for Applications

Beamlines and End-Station

1. Beamlines and other systems available for users are listed below (PIs in charge: Kiyohisa Tanaka, Masahiro Katoh). Please apply for 'UVSOR Synchrotron Facility Use.' Basic measuring instruments (measurement chambers, electronics, etc.) are available, but bring your own devices otherwise.

BL	End-Station	Manager*/Contact	
1U	Irradiation	Katoh, Masahiro* Fujimoto, Masaki	mkatoh@ims.ac.jp mfmoto@ims.ac.jp
1B	Terahertz Spectroscopy with Coherent Synchrotron Radiation (THz-CSR)[Martin-Puplett FT-FIR 0.5-30 meV]	Tanaka, Kiyohisa*	k-tanaka@ims.ac.jp
2A	Soft X-ray Absorption Spectroscopy [Double Crystal 585-4000 eV]	Tanaka, Kiyohisa*	k-tanaka@ims.ac.jp
2B	Photoelectron Spectroscopy dedicated to Organic Solids [18-m Spherical Gagrating 23-205eV]	Kera, Satoshi*	kera@ims.ac.jp
3U	In-situ / Operando Soft X-ray Absorption Spectroscopy [Varied-line-spacing (VLS) Plane Grating 60-800 eV]	Iwayama, Hiroshi* Nagasaka, Masanari Yuzawa, Hayato	iwayama@ims.ac.jp nagasaka@ims.ac.jp hayato@ims.ac.jp
3B	Vacuum Ultraviolet Spectroscopy (VUV) [2.5 m Off-plane Eagle-type Normal Incidence 1.7-31eV]	Tanaka, Kiyohisa*	k-tanaka@ims.ac.jp
4U	Soft X-ray Spectro-microscopy (STXM)[VLS Plane Grating 100-770 eV]	Ohigashi, Takuji* Yuzawa, Hayato	ohigashi@ims.ac.jp hayato@ims.ac.jp
4B	Soft X-ray Absorption Spectroscopy (XMCD, XMCD) [VLS Plane Grating 25-1000eV]	Iwayama, Hiroshi* Yokoyama, Toshihiko	iwayama@ima.ac.jp yokoyama@ims.ac.jp
5U	High-Resolution Spin-, Space and Angle-Resolved Photoemission Spectroscopy [SGM-TRAIN 20-200 eV]	Tanaka, Kiyohisa* Ideta, Shinichiro	k-tanaka@ims.ac.jp idetas@ims.ac.jp
5B	VUV/Soft X-ray Spectrometer Dedicated to Calibration of Optical Elements and Detectors [Plane Grating 6-600 eV]	Iwayama, Hiroshi*	iwayama@ima.ac.jp
6B	Infrared and Terahertz Spectroscopy (IR/FIR/THz) [FT-IR 4meV-2.5 eV]	Tanaka, Kiyohisa*	k-tanaka@ims.ac.jp
7U	High-Resolution Angle-Resolved Photoemission Spectroscopy (HR ARPES) [Wadsworth type spectroscopy 6-40 eV]	Ideta, Shinichiro* Tanaka, Kiyohisa	idetas@ims.ac.jp k-tanaka@ims.ac.jp
7B	Vacuum Ultraviolet Spectroscopy (VUV) [3 m Normal Incidence 1.2-25 eV]	Tanaka, Kiyohisa*	k-tanaka@ims.ac.jp
e-beams	Injector, Electron Storage Ring	Katoh, Masahiro* Fujimoto, Masaki	mkatoh@ims.ac.jp mfmoto@ims.ac.jp

2. Beamlines available for use by collaboration researchers.

BL	Measurement Instrument	Manager*/Contact	
1U(FEL)	Free Electron Laser [1.6-13.9eV]	Katoh, Masahiro* Fujimoto, Masaki	mkatoh@ims.ac.jp mfmoto@ims.ac.jp
6U	Molecular Angle-Resolved Photoemission Spectroscopy [Varied-line-spacing Plane Grating 40-500 eV]	Matsui, Fumihiko* Kera, Satoshi Iwayama, Hiroshi	matui@ims.ac.jp kera@ims.ac.jp iwayama@ims.ac.jp

For details see:

http://www.uvsor.ims.ac.jp/about/beamlines_list.html

2. Before You Arrive

At least a month before your scheduled machine time, please devise an experimental plan suitable for the BL status. Discuss it with the person in charge of the BL, and determine a reasonable plan and priorities for your experiment. As soon as your application is accepted, make sure that you perform the procedures listed below. Download formats from: <https://www.uvsor.ims.ac.jp/about/eng/format.html>

Documents Required for Radiation Works	UVSOR users (including undergraduate students) must be registered as radiation workers at his/her affiliation and must submit a 'Radiation Worker Application Form.' Prepare a form signed by the project leader or the division/department head at your affiliation and submit it to UVSOR office at least 2 weeks before your scheduled machine time. If this form is not submitted, an UVSOR ID card cannot be provided and you will not be permitted to enter the experimental hall. If, after your application has been accepted, you find that additional research collaborators will need to attend, you must immediately submit a 'Radiation Worker Application Form' for each additional person. In case of the overdue submission, contact the IMS safety office (ray@ims.ac.jp).
Radiation Worker Application Form	Send your 'Radiation Worker Application Form' as soon as you receive approval from your affiliation. Your applications will not be accepted if: (1) it has an old approval date (check the date in the upper right of the form) (2) it has an old approval date; more than a month prior to your arrival (check the date in the upper right of the form) (3) the approval date (at upper right) and the arrival date are the same
Reserving Liquid Helium	If you need liquid helium, inform the BL manager of the required amount, preferably a month, but no later than 2 week before your intended machine time.
Reserving Accommodation	Please contact the BL manager. For information about accommodation facilities for researchers see: http://www.occ.orion.ac.jp/lodge/okazaki_lodge_en/index.html
Submitting a Visitor List	E-mail a complete list of visitors at least 2 weeks before your reserved machine time (uvsor@ims.ac.jp). The list is needed to confirm various procedures and for safety confirmation. BL: Project leader: Application number: Visitor A Name (print): Affiliation: Position: Period of visit(MM/DD): / - / (days and nights) Accommodation: on-site lodge or off-site hotel Guest account: required or not required Submission status of 'Radiation Worker Application Form (For External Users)': submitted or not submitted
Applying for Additional Research Collaborators to Attend	If additional research collaborators wish to attend, submit the following documents to the UVSOR office: <ul style="list-style-type: none"> • 'Application Form for Joint Use of UVSOR Synchrotron Facility by Additional Research Collaborator' • 'Radiation Worker Application Form'
Things to Bring	In addition, bring footwear to wear during your experiments, such as sneakers for indoor use or safety shoes. For your safety, sandals and slippers are prohibited.

3. UVSOR Operation Schedule

Details of the current operational status and schedule of UVSOR are available at:
<http://www.uvsor.ims.ac.jp/eng/>

Monday	9:00-21:00 Machine study. (optical source research and development, accelerator adjustments) 9:00-17:00 No entry to the experimental hall allowed. 17:00-21:00 Entry to the experimental hall allowed, but beam not available. 21:00 Beam stops. You have to leave the experimental hall during the operation (approx. 5 min).
Tuesday to Friday	9:00-21:00 Available for users. Electron beam will be injected once a day at 9 am. You have to leave the experimental hall during the operation (approx. 20 min). 21:00 Beam stops. You have to leave the experimental hall during operation (approx. 5 min). Mid-week holidays: operating
Thursday night to Friday Morning	21:00-9:00 Available for users.
Saturday	Machine studies are performed on Saturdays on an irregular basis. Contact UVSOR staff for operational schedules for Saturdays. User work in the experimental hall is given priority. Please let the person in charge of the BL know your work schedule.

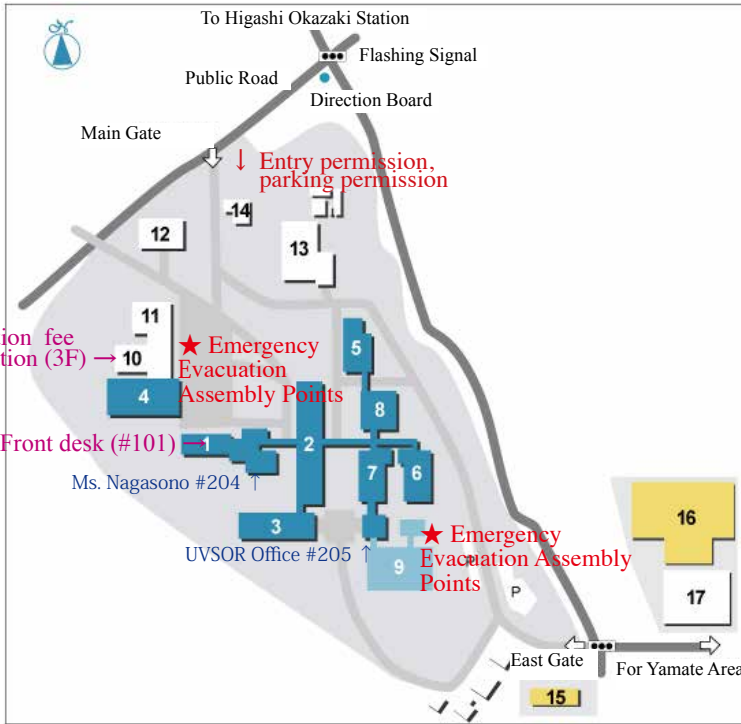
- **Note: Except as indicated in the schedule mentioned above, operations are stopped and you can enter the experimental hall. However, the above hours may change for facility tours, etc. In addition, instruments may be operated for adjustments after 9 pm, in which cases entry into the experimental hall will be restricted. Please pay attention to beam injection and stopping announcements.**

4. While You Are at UVSOR

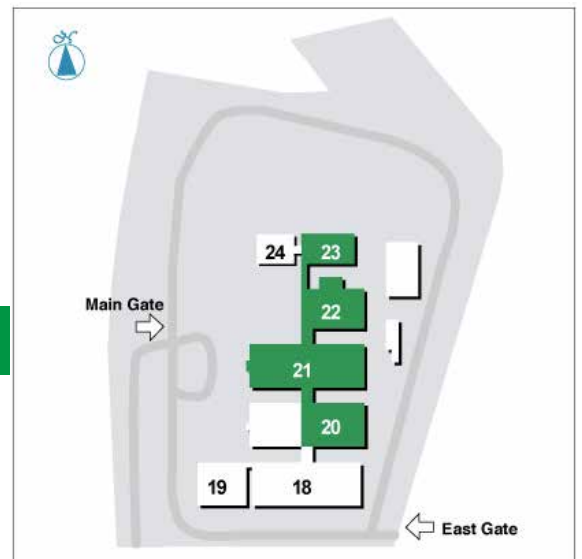
Entry and Parking Permission

Permission to enter and park will be provided at the guard station (No.14) near the main gate. When you arrive at the Myodaiji campus, please visit the guard station and complete the entry procedures. Please carry the permit at all times while you are here, and return it when you leave. The parking permit should be displayed on the inside front of your car in a visible manner.

Myodaiji Campus



Yamate Campus



IMS (Myodaiji Campus) 1-9

IMS (Yamate Campus) Exploratory Research Center on Life and Living Systems 20-23

Common Facilities for 3 Okazaki Institutes 18-19, 24

Accommodation Facilities 15, 16

- | | | |
|--|--------------------------------|--|
| 1 Main Office Bldg. | 10 Administration Bureau | 18 Yamate No. 1 Bldg. A |
| 2 Main Laboratory Bldg. | 11 Library | 19 Yamate No. 1 Bldg. B |
| 3 South Laboratory Bldg. | 12 Faculty Club & Coop | 20 Yamate No. 2 Bldg. |
| 4 Computer Center Bldg. | 13 Electricity Control Station | 21 Yamate No. 3 Bldg. |
| 5 Instrument Center (Low-temp. Div.) Bldg. | 14 Guard Station | 22 Yamate No. 4 Bldg. |
| 6 Chemical Materials Bldg. | 15 Myodaiji Lodge | 23 Yamate No. 5 Bldg. |
| 7 Laser Facility Bldg. | 16 Mishima Lodge | 24 NIBB Center of Interuniversity Bio-Backup Project |
| 8 Equipment Development Center | 17 Okazaki Conference Center | |
| 9 UVSOR Synchrotron Facility | | |

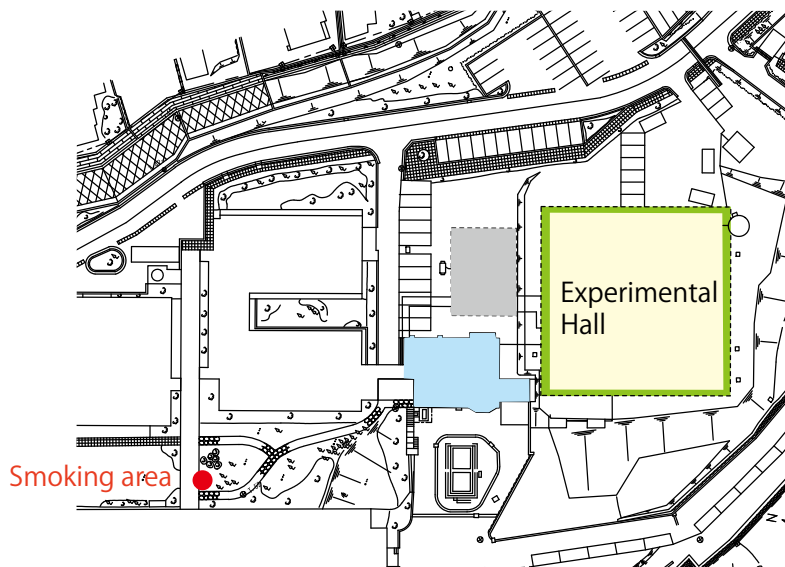
5. UVSOR

Accommodation Procedures Please contact secretary Ms. Hisayo Nagasono (hisayo@ims.ac.jp) prior to your arrival and arrange a date and place to receive your room key and pay for your accommodation fee.

- User Room**
- User rooms: Laser Facility Bldg. room #208/209 are open for UVSOR users. If you want to use the drinks bar (coffee etc.), please pay at the UVSOR office (room #205) at the UVSOR Synchrotron Facility (weekly fee: 250 yen per person).
 - The entrance to the UVSOR Synchrotron Facility first floor is electronically locked at night and holidays. Please ask UVSOR staff for the lock code.
 - The east gate is closed at 7:30 pm. Please ask UVSOR staff for the lock code.
 - See p.18 for internet and printer information.



- User room and the UVSOR Synchrotron Facility are non-smoking areas. The smoking area is shown below (the first floor east hallway of the Main Laboratory Bldg).



5-1. Working in the Experimental Hall

Before entering the experimental hall

UVSOR Safety Education DVD

At your first machine time of the year, make sure you watch the 'UVSOR Safety Education' DVD before you enter the experimental hall. The DVD is available anytime in the user room.



UVSOR Safety Education' DVD



Safety Education Card



Card box

Safety Education Card

After watching the DVD, fill in the 'Safety Education' card (date, name, etc.) and put the card in the card box. You can find the cards placed in a card rack together with the individual UVSOR ID cards.

UVSOR ID Card

You need to wear a UVSOR ID card to enter the experimental hall. For those who have completed the following procedures, cards will have been prepared and placed in the card rack on the wall in the user room (room #209).

- Registration as a research collaborator at IMS.
- Registration as a person engaged in radioisotope handling at their own affiliation.
- Submission of a 'Radiation Worker Application Form (For External User)' to UVSOR.

Card cases are available for carrying your card during experiments. You may be required to pay for a replacement if the card is lost or damaged. Please return your card to the card rack when your experiment is completed.



UVSOR ID Card



Pocket Dosimeter



Dosimeter in Use' Card



Dosimeter rack

Pocket Dosimeter

Make sure you wear your pocket dosimeter, which is prepared in the user room. When you are about to use the dosimeter, fill in the 'Record of the personal radiation exposure' as below. Pocket dosimeters must not be taken outside UVSOR. Please return it after completing your experiment. Pocket dosimeters are quite delicate devices, so handle them with care.

Record of Personal Radiation Exposure

Take the 'Record of the personal radiation exposure' binder that has the same number as your pocket dosimeter and fill in the blanks (name, work-places, and the number on your pocket dosimeter). The form has a carbon copy underneath. Read your pocket dosimeter at the end of the day and fill in the dose for each day. After you have completed experiment, fill in the total dose. Put the upper sheet (pink) in the 'radioactive exposure box' and keep the copy 'Notice of the personal radiation exposure' (white) for your records. For details, see the next page or the post in the user room.



Record of the personal radiation exposure:
on exposure' binder



Radioactive exposure box

← pink sheet

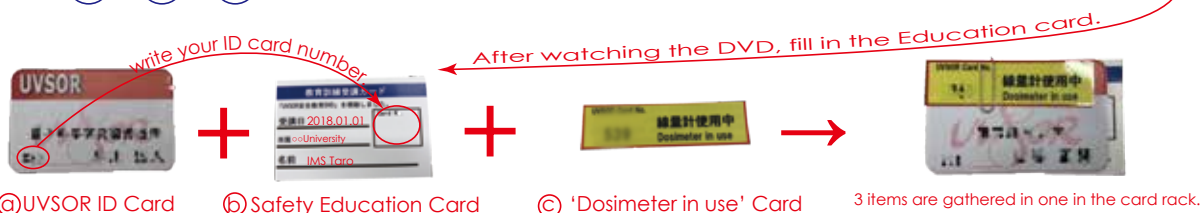
Before you enter the experiment hall...

I. please watch
the 'UVSOR Safety Education' DVD



(30min.)

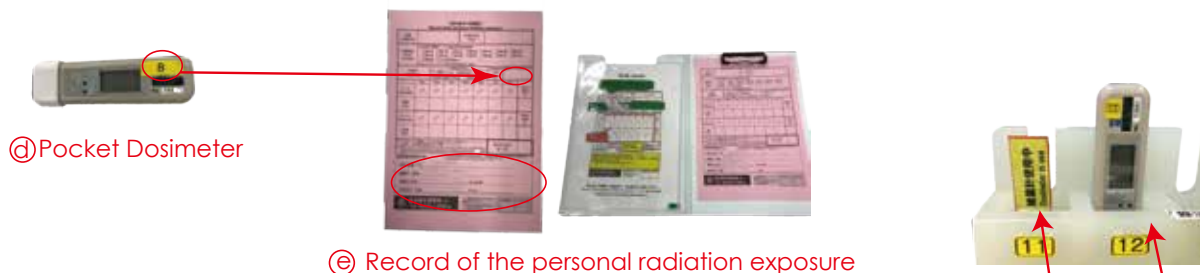
II. Take ①, ②, ③ from the card rack.



- ① UVSOR ID card: Take a card of your own number. You need the card to enter the experimental hall. Return it when your experiment is completed.
※ If you do not know your number, look up the blue file on the desk. Names and correspondent numbers of registrants are listed according to their affiliation.
- ② Safety education card: Fill in the card and put it in the card box on the desk that is positioned to the immediate right of the card rack.
- ③ 'Dosimeter in use' card: Needed to display that you are using your pocket dosimeter (III- ④). Return it to the card rack together with ① when your experiment is completed.



III. Take ④ and ⑤ from Dosimeter rack and binder rack on the desk.



- ④ Pocket dosimeter: Choose a pocket dosimeter with any number and continuously use it while you stay.
 - While you are in the experimental hall, put ③ in the dosimeter rack instead of your pocket dosimeter.
 - When you are outside of the experimental hall during your stay, put ③ and ④ together in the dosimeter rack (to avoid other users mistake your dosimeter).
 - When your experiment is completed, put ④ alone in the dosimeter rack.



- ⑤ Record of personal radiation exposure binder: Take a binder that has the same number as ④. Read your pocket dosimeter at the end of the day and fill in the dose for each day.



- When your experiment is completed,
- put the upper sheet (pink) in the drawer ① of the radioactive exposure box;
 - keep the copy 'Notice of the personal radiation exposure' (white) for your records.

drawer ① →

When you work in the experimental hall,
the following is necessary



ID Card



Pocket Dosimeter



Glass Badge

Attention

Pocket dosimeters may respond to strong electromagnetic waves and thus show high dose readings. **Please keep your dosimeter away** from items that can cause malfunction:

- cell phones
- ID card readers
- pulse lasers

※If the dose of your pocket dosimeter exceeds **10 μ Sv per day**, please contact the person in charge of the BL or the operational person on-duty immediately!

**“UVSOR ID Card” and “Pocket Dosimeter”
must not be taken outside UVSOR.**

5. UVSOR

Rules of the Radiation-controlled-area

1. Only the following people who have received permission from the radiation control manager or the UVSOR radiation protection supervisor in advance are allowed to enter the radiation-controlled-area:
 - ID card holders
 - listed visitors (temporalry access)
 - listed workers of contractors
2. Make sure you ware your pocket dosimeter when you enter the experimental hall.
3. Food, drinks (bread, canned-beverages, candy, etc.), and smoking are prohibited in the experimental hall.
4. Radioisotopes are prohibited in the experimental hall.
5. For your safety, sandals and high-heeled shoes are prohibited in the experimental hall.
6. Unless it is necessary, do not approach the storage-ring during operation. The radiation level increases as you get closer to the storage-ring.
7. Follow the rules listed below when you enter or leave the experimental hall.

Entering or Leaving the Experimental Hall

1. Approach the ID card reader as close as 30 cm. The lamp will turn on following a beep sound, and the door will unlock.
2. As soon as the beep sounds and the light turns on, you are permitted to enter. Push open the door and enter (It will take a while until your name appears on the display).
3. Each user should gain individual entry permission.
4. If you can't get permission after several tries, contact UVSOR staff: you may not be registered in the system or the ID card may be faulty.
5. Leave the experimental hall by using the same procedure. Check that your name disappears from the display.



<If your name remains on the monitor after you have left>

The next injection will not start. UVSOR staff will announce your name and check your presence in the experimental hall. Please contact them immediately and tell them where you are.

<If you enter without your name being recorded on the monitor>

In this case, your entry will not have been authenticated. Injection may start while you are in the experimental hall. Please make sure that your name appears on the monitor when you enter.

If Injection Starts while You Are in the Experimental Hall

Press the nearest emergency beam stop button and halt the injection. Call for help using a microphone in the experimental hall.



Operational Announcements

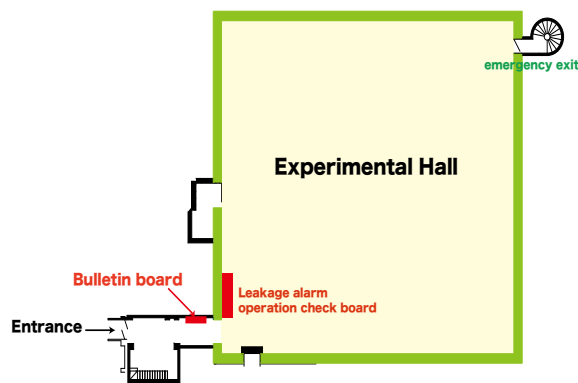
- Five minutes before injection and re-injection of the electron beam, the following announcement will be broadcast (in Japanese and English), and UVSOR staff will make the rounds of the experimental hall. Nobody is allowed to remain in the experimental hall, please leave immediately. The announcement will say "The electron beam will be injected from 9 o'clock. You must leave the experimental hall now."
 - If you can't leave immediately for some reason (e.g. an accident etc.), inform UVSOR staff as soon as possible and get permission to stay.
- Five minutes before the beam stops, the following announcement will be broadcast: "We are going to stop the electron beam. You must leave the experimental hall now." Please leave the experimental hall immediately.

Use of Whiteboard and Evening Phone

A whiteboard is set up next to each BL. Write your accommodation room number, cell phone number etc. on the board. This is needed for making important contacts during your experiment, such as emergency contacts during overnight-baking. Also put your 'Application Form of Experimental Samples and Chemicals at UVSOR' on the whiteboard.

Baking

Before baking starts, check the heater connection and check for earth faults. After you have started, keep monitoring the operation for 1 to 2 h until it reaches a steady state. Check that there is no rapid temperature rise, smoke generation, ignition etc. Low-melting point materials are not allowed to be baked. Indicate 'Baking in progress, high-temperature warning' on the whiteboard next to the BL and on the bulletin board for each BL (at the entrance to the experimental hall).



Electronic Leakage Alarm

When you hear the alarm, you must inform the BL Manager (check for leakage and reset the alarm).

Cautions for handling liquid nitrogen

1. When detaching the flexible tube from the container or touching the cooling zone, make sure you wear the leather gloves equipped.
2. Only registered containers labeled with barcodes are available for use.
3. During the process of filling liquid nitrogen, oxygen deprivation may occur. When the oxygen meter on the liquid nitrogen automatic-filling system detects oxygen deprivation, it will trigger an alarm and filling will stop automatically. If you hear the alarm, immediately evacuate the site and inform UVSOR staff by broadcast or by phone.
4. A crane is located above the liquid nitrogen automatic-filling system. Please do not use the system when the crane is operating.

Liquid Helium When using liquid helium in the experimental hall, please pay attention to the following.

1. A month (no later than 2 weeks) before the week when you want to use the liquid helium, inform the BL manager of the amount you plan to use. Only UVSOR staff may fill the containers.
2. During your use of liquid helium, always monitor the purity of the recovered helium. Purity should be maintained at no less than 95%. If the purity falls below 85%, close the main valve and check for the cause of the low purity. Make sure you are accompanied by someone who is used to handling liquid helium.

If you have any problems during your experiments, please inform the BL manager.

Metal Processing Contact the Equipment Development Center through UVSOR staff.

Specific Items for Individual BLs Contact the BL manager.

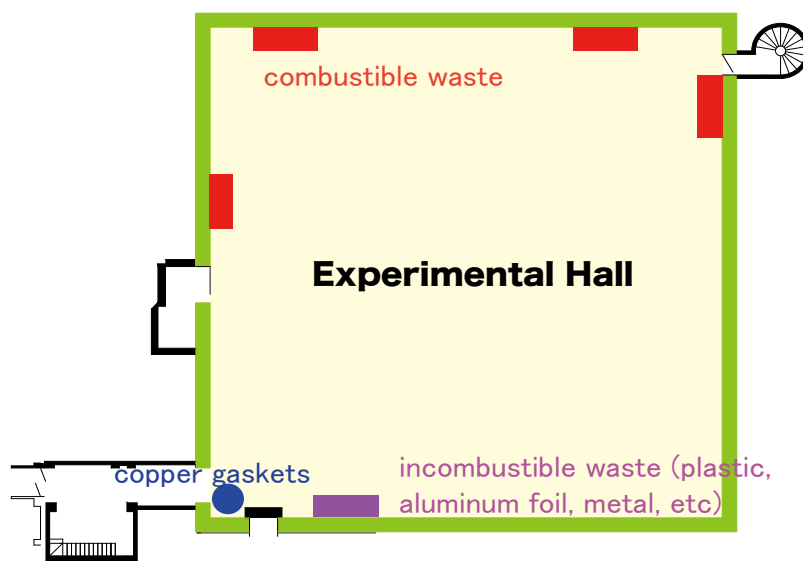
Tools General tools used in the experimental hall are stored in the toolbox by the east-side wall of the hall. As these tools are for common use, please return them immediately after use. Some BLs are equipped with dedicated tools. Ask the person in charge of the BL for other specialized tools. We recommend that you use your own tools.

Borrowing You may borrow vacuum components, electronic measuring instruments, optical instruments etc. from the BL manager. Please return them after use.

Waste Disposal We kindly ask you to clean up the BL after your experiment. Please do not leave the following types of waste in the BL trash bin.

<Separation of garbage>

copper gaskets ●	gasket box near the experimental hall entrance
batteries	trashcan for batteries in room #103 (1F)
organic solvents (acetone, alcohol)	small amount: leave under the fume hood in the experimental hall large amount: dispose in tanks in room #101 (first floor, workshop)
other organic solvents	follow the instructions of UVSOR staff
combustible waste, incombustible waste Dispose gloves to combustibile waste box. ■ ■	designated trash bin outside the experimental hall for combustible, incombustible, plastics, aluminum foil, metals, etc.



5-4. What to do in an Emergency

Accidents at Night If an accident or problem occurs at night, contact UVSOR staff. Look at the whiteboard or the 'UVSOR emergency contact' information next to each BL for staff contact details. For vacuum accidents, users should ask how to perform emergency restoration. An understanding of the basic BL vacuum system will be important.

Power Outages Please contact the BL manager first and the follow instructions given.

Power outages occur sometimes in early summer or late summer, or during typhoon season. These are mostly short-term interruptions, but sometimes the turbo molecular pump (TMP) and computers stop running or the outage lasts for quite a while. Please keep power outages in mind if your machine time is at this time of the year. Always keep a flashlight at hand!

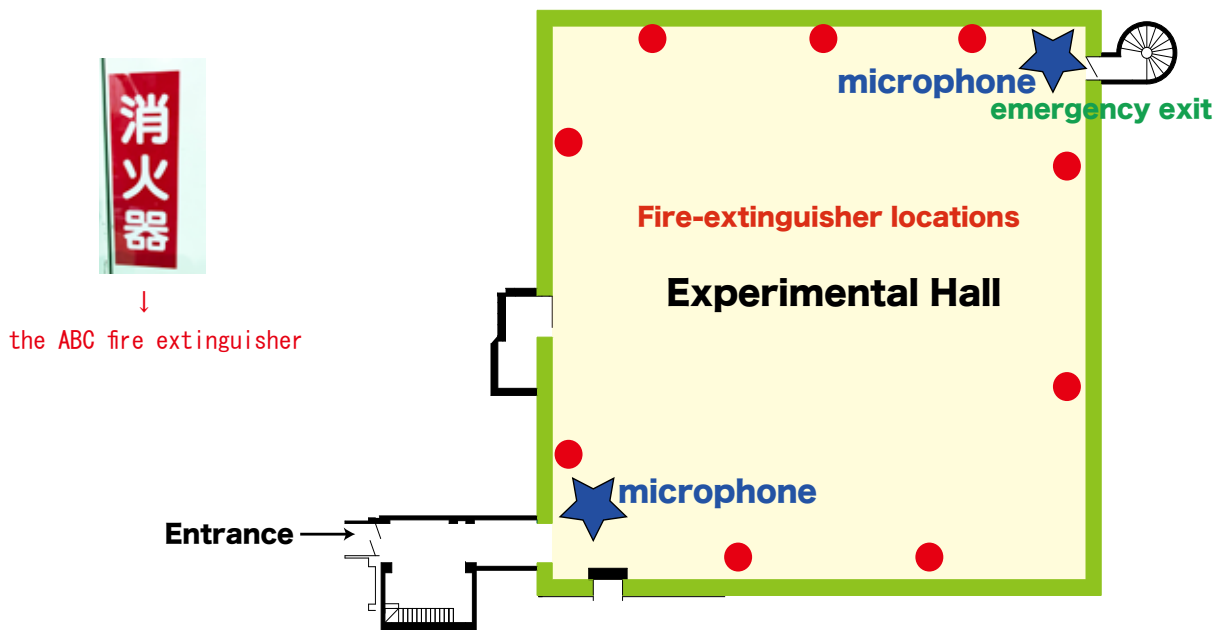
1. During measurement, interlock valves shut automatically. Please shut the manual valves and turn off the high-voltage power supply. When the power comes back, the person in charge of the BL will make their rounds and will perform a status check. Wait until the beam is re-injected and restart your measurements. Standardization of spectroscopy may be necessary.
2. During baking, the interlock valve upstream of the TMP shuts automatically. Turn off the heaters in preparation for power supply restoration, because many of them are not turned off by the interlocks. When the power comes back on, operate the TMP (VAC → START) and restart baking.

Injuries Please contact UVSOR staff first.

In mild cases, use the first-aid-kit on the shelf in the user room (room #208/209). If you have a severe injury, see a doctor at one of the hospitals nearby or call an ambulance (dial 119). A night-time emergency medical service is available at the Okazaki Medical Association (10 min walk; hours: 19:30-23:00). If you need to call an ambulance, please notify the guard station (extension: 7148, external: 52 8523) and UVSOR staff in advance.

Emergencies Such as Fire Notify any other people nearby and broadcast the following several times using one of the microphones near the experimental hall entrance and BL2B: **"Fire emergency! please call the fire-brigade"**

Also inform the guard station (extension: 7148, external: 52 8523). If possible, try to put the fire out by using one of the ABC fire extinguishers installed along the walls in the experimental hall. If the fire is burning strongly, evacuate the room immediately. From the emergency exit (the door next to BL2B), go up the stairs and exit next to the tennis court. From the entrance, you may also escape via the stairs leading to the equipment hatch. Halogen fire extinguishers are harmful to humans and may be used only when you have made sure that everyone has been evacuated from the experimental hall. Please leave the handling of these extinguishers to UVSOR staff.



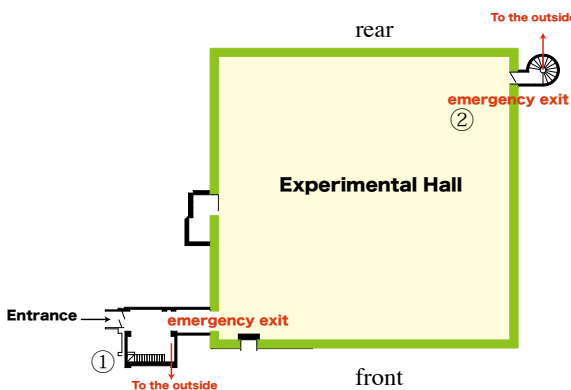


Emergencies Such as Earthquakes

Safety first! Your safety is the most important thing. As soon as the shaking stops, evacuate from the emergency exit or the equipment hatch. If any instructions are broadcast, make sure you follow them. When you evacuate, wear the foldable helmet supplied at each BL, or the emergency helmet supplied at the equipment hatch or in the user room.

Emergency Exits

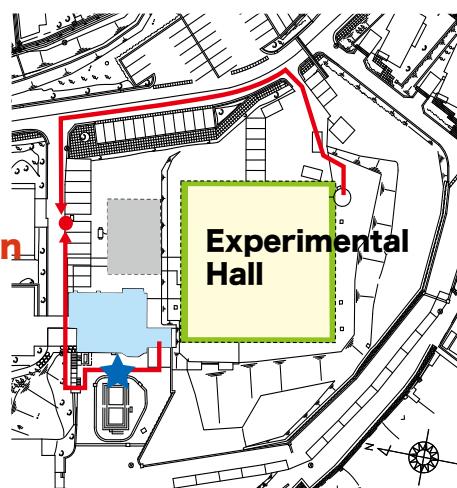
There are two emergency exits. When you look from the entrance to the experimental hall, one is found at the left rear corner of the experimental hall (south-east corner). The other one is upstairs the emergency stairway besides the liquid nitrogen auto-filling system.



Emergency Evacuation Assembly Points

Outside the UVSOR first floor entrance and outside the Administration Bureau. (See P.5)

Emergency evacuation Assembly Points



* See the 'Emergency Phone Book' and 'UVSOR contact numbers' at each BL for emergency contacts.

5-5. Internet

UVSOR users can access our guest wireless network and print out documents such as reports or papers. You may use your own PC. The following points should be kept in mind.

- | | |
|--------------------|--|
| Bringing PCs | When bringing a PC, make sure you update your OS and anti-virus software to ensure Internet security. |
| Using the Internet | <p>A network is available in the experimental hall and the user room. For Internet security reasons, guest users need ID and password (for both wired and wireless connections) to use the network. The issued guest accounts are valid in the IMS buildings during your visiting period only. An independent ID and password are needed for use of the network in the onsite accommodation (lodge).</p> <ul style="list-style-type: none"> • Experimental hall: Wired and wireless networks are available. If you want to use a wired LAN cable, contact the person in charge of the BL. Note that because there are several spots where the wireless network is unstable, use of a wired network is recommended. • User room: Wired and wireless networks are available. |

5-6. Other

- | | |
|--|---|
| Okazaki Library and Information Center | <p>Hours: Monday to Friday: 9 am to 5 pm
 Saturday to Sunday, holidays: Closed
 Accessible 24 hours every day if you have a library card. Please see below for details.
 http://www.lib.orion.ac.jp/index-eng.html</p> |
| On-site Restaurant | <p>Open at the Faculty Club on the first floor.
 Hours: Monday to Friday: 11:45 am to 1:30 pm (lunch time only)</p> |
| Okazaki CO-OP | <p>Open at the Faculty Club on the second floor.
 Hours: Monday to Friday: 11 am to 5 pm (11 am to 4 pm during summer)</p> |
| On-site Accommodation Facilities | <p>Two accommodation facilities are available for visiting researchers participating in joint studies. Mishima Lodge is a 5-minute walk, and Myodaiji Lodge is a 2-minute walk from UVSOR. Please see the section on "Reserving Accommodation" (p.3) for reservations.
 http://www.occ.orion.ac.jp/lodge/okazaki_lodge_en/index.html</p> |
| Okazaki Conference Center (OCC) | <p>OCC hosts international conferences, annual meetings, seminars, and UVSOR workshops etc.
 http://www.orion.ac.jp/occ-e/index.html</p> |

6. After You Leave

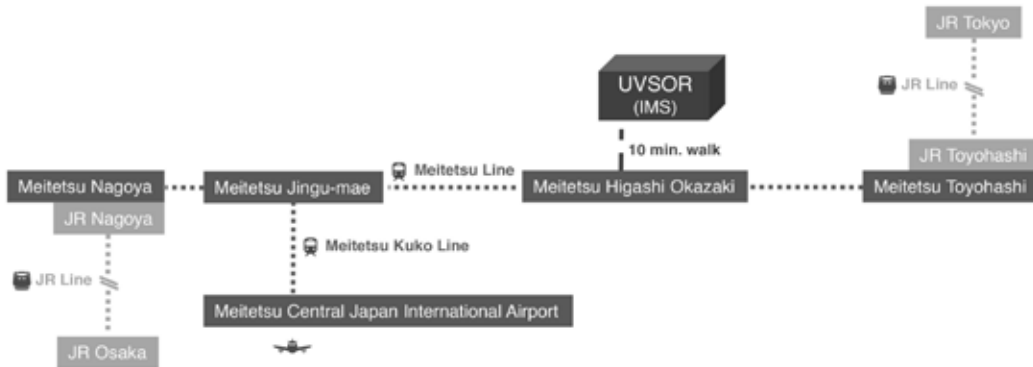
Papers If your work at UVSOR is published in a scientific journal, please e-mail a PDF of the paper to the BL Manager.
This research was supported by Joint Research by Institutes for Molecular Science (IMS). (IMS program No.***)

Activity Report We annually publish summaries of the works using UVSOR Synchrotron Facility as an 'Activity Report.' As stated in the guidelines for joint-research applicants, UVSOR users are asked to contribute a yearly progress report. Reports on work being published some years after UVSOR use are also welcome. The submission status of your Activity Report and publications are considered in our determination of machine time as part of Facility use application reviews. See below for Activity Report forms. Details (including deadline) will be announced on our website.

- Submission of activity reports: online through our website

Access

Access to IMS (UVSOR)
<https://www.ims.ac.jp/en/about/campus/access.html>



From Airport to Higashi Okazaki Station

<Airport Bus>

Chubu Centrair International Airport to Higashi Okazaki Station	
Service route	Meitetsu Bus/Eastern Aichi (Mikawa) Area [Airport to Higashi Okazaki Station] (approx. 60 minutes)
Departure point at Chubu Centrair International Airport	Airport bus terminal on the first floor of the Passenger Terminal Building: Bus stop 4 <ul style="list-style-type: none">• Purchase ticket from a vending machine near the bus stop• Bus stops for boarding airport buses are different from the stops used for getting off.
Arrival point at Higashi Okazaki Station	North bus terminal: Bus stop 5

* For details, please visit:
http://www.centrair.jp/en/to_and_from/access/bus.html

<Train>

Chubu Centrair International Airport to Higashi Okazaki Station	
Central Japan International Airport Station to Jingu-mae Station	Meitetsu Kowa Line <ul style="list-style-type: none">• μ-SKY limited express (approx. 20 minutes)• Limited express (approx. 25 minutes)• Express (approx. 30 minutes)
Jingu-mae Station to Higashi Okazaki Station	Meitetsu Line <ul style="list-style-type: none">• Rapid limited express (approx. 23 minutes)• Limited express (approx. 24 minutes)

* For details, please visit:
http://www.centrair.jp/en/to_and_from/access/train.html

From Higashi Okazaki Station to UVSOR
 UVSOR (IMS) is about a 10-minute walk from Higashi Okazaki Station.

Hotels near UVSOR

Hotel Name	Price per night	TEL	FAX	Location
Okazaki New Grand Hotel* http://www.newgrand.yad.jp/english/facilities_information/index.html	6600 yen~ Internet plan	+81 564 21 5111	+81 564 21 0109	Riverside, 8-min walk from Meitetsu main line's Higashi Okazaki Station
Okazaki Central Hotel http://www.okazaki-centralhotel.com/en/	3700 yen~	+81 564 51 2830	+81 564 51 2969	Roadside, 2-min walk from Meitetsu main line's Higashi Okazaki Station
Green Hotel Rich Tokugawaen** http://www.tokugawaen.com/index_e.html	3980 yen~	+81 564 53 3151	+81 564 53 7944	Hillside, 8-min walk from Meitetsu main line's Higashi Okazaki Station
Super Hotel Okazaki	4980 yen~	+81 564 28 9000	+81 564 28 9003	Roadside, 6-min walk from Meitetsu main line's Higashi Okazaki Station

* IMS discount available. To get the discount, when making your reservation mention that you are visiting IMS.

** IMS discount price available only when booked through IMS.

Indicated prices are for single rooms. Please confirm upon reservation.

Staff Contacts

Name	Position	Charge of BL	Extension*		Email
Satoshi Kera	Director, Professor		7413	Main Office 2F 216	kera@ims.ac.jp
Masahiro Katoh	Professor	Light source	7206	UVSOR 2F 202	mkatoh@ims.ac.jp
Kiyohisa Tanaka	Associate Professor	BL1B, 3B, 5U, 6B, 7B, 7U	7202	3F 302	k-tanaka@ims.ac.jp
Fumihiko Matsui	Senior Researcher	BL6U	7201	3F 301	matui@ims.ac.jp
Hiroshi Iwayama	Assistant Professor	BL2A, 4B, 5B, 6U	7403	2F 204	iwayama@ims.ac.jp
Shinichiro Ideta	Assistant Professor	BL5U, 7U	7203	2F 203	idetas@ims.ac.jp
Takuji Ohigashi	Assistant Professor	BL4U	7203	3F 303	ohigashi@ims.ac.jp
Masaki Fujimoto	Assistant Professor	Light source	7401	2F 203	mfmoto@ims.ac.jp
Eiken Nakamura	Technical Staff	BL general	7403	2F 204	eiken@ims.ac.jp
Junichiro Yamazaki	Technical Staff	Light source	7401	2F 203	yamazaki@ims.ac.jp
Masahiro Sakai	Technical Staff	BL3B, 5U, 7U	7203	3F 303	sakai@ims.ac.jp
Naonori Kondo	Technical Staff	BL2A, 3B, 7B	7403	2F 204	nkondo@ims.ac.jp
Kenji Hayashi	Technical Staff	optical source	7401	2F 203	h-kenji@ims.ac.jp
Fumitsuna Teshima	Technical Staff	BL1B, 6B, optical source	7403	2F 204	tetsu@ims.ac.jp
Takayuki Yano	Technical Staff	BL2B, 3B, 7B	7403	2F 204	yano@ims.ac.jp
Makita Seiji	Technical Staff	BL5U, 6U, 7U	7405	3F 305	makita@ims.ac.jp
Toshio Horigome	Specially Appointed Senior Specialist	All BLs	7403	2F 204	horigome@ims.ac.jp
Hayato Yuzawa	Specially Appointed Senior Specialist	BL3U, 4U	7403	2F 204	hayato@ims.ac.jp
Aki Minakuchi	Technical Support Staff		7205	3F 305	minakuchi@ims.ac.jp
Hisayo Hagiwara	Administrative Support Staff		7402	2F 205	hagiwara@ims.ac.jp
Itsuko Inagaki	Administrative Support Staff		7402	2F 205	itsuko@ims.ac.jp
Hisayo Nagasono	Foreign Support Staff		7417	Main Office 2F 204	hisayo@ims.ac.jp

Photo-molecular Science III

Masanari Nagasaka	Assistant Professor	BL3U	7394	Main Office 2F 213	nagasaka@ims.ac.jp
Satoshi Kera	Professor	BL2B, 6U	7413	Main Office 2F 216	kera@ims.ac.jp

Materials Molecular Science, Electronic Structure

Toshihiko Yokoyama	Professor	BL4B	7345	Main Office 3F 320	yokoyama@ims.ac.jp
Takanori Koitaya	Assistant Professor	BL4B	7429	Main Office 3F 321	koitaya@ims.ac.jp

Radiation Worker Application Form (For External User)

Submission Date: 20 / /
(Year) (Month) (Day)

To: Director General of Institute for Molecular Science (IMS)

I hereby apply to be registered as a radiation worker.

Full Name	Last name. First name. (middle initial)	Sex	<input type="checkbox"/> Male <input type="checkbox"/> Female
Date of Birth	Year Month Day Y /M /D	E-mail	
Affiliation	Name of Organization	Contracted Name (Up to 6 char.)	
	Division/Section	Title or Current year PhD/MS/BS	
Work Place	Synchrotron radiation, Accelerator <input type="checkbox"/> UVSOR facility (Include the use of STXM, XMCD)	X-ray generator <input type="checkbox"/> Instrument Center <input type="checkbox"/> Equipment Development Center <input type="checkbox"/> Other (Lab.)	
Name of collaborative researcher	Please fill in IMS researcher name collaborating.		
Work Period	The work (scheduled) starting date From Y20 /M /D	Do not exceed the next fiscal year* To Y20 /M /D	
Health Check	<input type="checkbox"/> Normal <input type="checkbox"/> Not Normal (Attach the copy of health check results) The person using only X-ray generators is possible in the blank.		
Dose amount of radiation exposure	The result of the last fiscal year. <input type="checkbox"/> Less than 1mSv <input type="checkbox"/> More than or equal 1mSv [mSv] (Attach the copy of health check results)		

* Japan's fiscal year runs from April 1 till March 31 in the following year.

Certificate of authorization by affiliated organization

I hereby certify that the above-named person is subject to radiation safety and control and is authorized to work in radiation-controlled areas at IMS.

Name of Organization/Company: _____

Title of the representative for the organization above: _____

Name of the representative for the organization above: _____

Signature _____

(Fill in the following IMS.)

認定欄	放射線取扱主任者	放射線管理責任者

Example

Institute for Molecular Science

Radiation Worker Application Form (For External User)

Submission Date: 20 15 / 05 / 01
(Year) (Month) (Day)

To: Director General of Institute for Molecular Science

Contracted name of your organization.
(maximum of 6 alphanumeric characters)

I hereby apply to be registered as a radiation worker.

Full Name	Last name, First name, (middle initial) Kirk James T	Sex	<input checked="" type="checkbox"/> Male <input type="checkbox"/> Female
Date of Birth	Year Month Day Y 1985 /M 07 /D 31	E-mail	kirk@oust.jp
Affiliation	Name of Organization Okazaki University of Science and Technology	Contracted Name (Up to 6 characters) OUST	
	Division/Section Faculty of Science	Title or Current year PhD/MS/BS Associate Professor	
Work Place	Synchrotron radiation, Accelerator <input checked="" type="checkbox"/> UVSOR facility (Include the use of STXM, XMCD)	X-ray generator <input type="checkbox"/> Instrument Center <input type="checkbox"/> Equipment Development Center	
Name of collaborative researcher	Please fill in IMS researcher name collaborating Taro BUNSHI		
Work Period	The work (scheduled) starting date From Y20 15 /M 06 /D 11	Do not exceed the next fiscal year* To Y20 16 /M 03 /D 31	
Health Check	<input checked="" type="checkbox"/> Normal <input type="checkbox"/> Not Normal (Attach the copy of health check results) The person using only X-ray generators is possible in the blank.		
Dose amount of radiation exposure	The result of the fiscal year. <input checked="" type="checkbox"/> Less than 1 mSv [mSv] (Attach the copy of health check results) <input type="checkbox"/> More than 1 mSv [mSv]		

Should be a staff scientist in IMS.

Please fill in most recent March 31.

Please fill in experiment starting date.

* Japan's fiscal year starts on April 1st and ends on March 31st.

Certification Organization

I hereby certify that the above-named person is subject to radiation safety and control and is authorized to work in radiation-controlled areas at IMS.

Name of Organization/Company: Okazaki University of Science and Technology

Title of the representative for the organization above: Science Director

Name of the representative for the organization above: Masahiro SAKAI

Signature M. Sakai

(Fill in the following IMS.)

認定欄	放射線取扱主任者	放射線管理責任者

*

Safety Staff

(*) For Safety Staff

*

Date:
Staff
:

Application Form of Experimental Samples and Chemicals at UVSOR (20)

Dear Chemical Safety Committee at UVSOR

Applicant:

<<IMS>>

Department Facility		TEL	
---------------------	--	-----	--

<<User>>

Affiliation Position	
TEL	
FAX	
e-mail	

We report the list of experimental samples and chemicals used at the UVSOR facility.

Usage Type	a. Cooperative Work, b. Use of UVSOR, c. Internal Use, d. Nanotech Platform										
Title											
Beamline		Beamline Master									
Exp. Period (After decision)	—										
Researcher (Affiliation)	()					()					
Name of Experimental Samples and Chemicals	Phase (Gas: Pressure)	Amount (Include Units)	R E G I S T E R E D	Hazardousness							
				N O N E	F I R E	C O N B U S T I B L E	E X P L O S I O N	O X I D A T I O N	A N T I P O S I C	A C I D	C O R R O S I O N
G A S											
O T H E R S											

Remarks: It has a possibility to submit report for after-treatment of chemicals when you use hazardous chemicals.

*

Safety Staff

(*) For Safety Staff

*

Date:
Staff
:

Application Form of Experimental Samples and Chemicals at UVSOR (2013)

Dear Chemical Safety Committee at UVSOR

Applicant: Taro Bunshi

<<IMS>>	Department Facility		TEL	
<<User>>	Affiliation Position	Professor, Example University		
	TEL	+81-564-55-1111		
	FAX	+81-564-55-1111		
	e-mail	taro@example.ac.jp		

We report the list of experimental samples and chemicals used at the UVSOR facility.

Usage Type	a. Cooperative Work, b. Use of UVSOR, c. Internal Use, d. Nanotech Platform													
Title	The structures of liquid measured by STXM.													
Beamline	BL4U	Beamline Master	T. Ohigashi											
Exp. Period (After decision)	8/July/2013		12/July/2013											
Researcher (Affiliation)	Taro Bunshi (Example University)		Hanako Hikari (Example University)											
	Name of Experimental Samples and Chemicals	Phase (Gas: Pressure)	Amount (Include Units)	R E G I S T E R E D	Hazardousness									
					N O N E	F I R E	C O N B U S T I B L E	E X P L O S I O N	O X I D A T I O N	A N T I P O S I C	A C I D	C O R R O S I O N	P O I S O N	
G A S	Oxygen	3 atom, Metal	10 L, 1 piece			O	O	O						
	Cis-2-Buten	100 g, Metal	5 L, 2 pieces			O	O	O						
	Carbon dioxide	3 atom, Metal	10 L, 2 pieces			O								
	Carbon monoxide	3 atom, Metal	1 L, 1 piece											O
O T H E R S	Benzene	Liquid	500 ml			O	O							O
	Acetonitrile	Liquid	500 ml			O	O							
	Sulfuric acid	Liquid	500 ml									O	O	
	Potassium Permanganate	Solid	100 g						O					
	Sodium	Solid	10 g							O				

Remarks: It has a possibility to submit report for after-treatment of chemicals when you use hazardous chemicals.

(Year) (Month) (Day)
Date: / /

UVSOR Director

Application Form for Joint Use of UVSOR Synchrotron Facility by Additional Research Collaborator

To: UVSOR Director at the Institutes for Molecular Science (IMS)

Project Leader

Name of Affiliation: _____

Position: _____

Name (print): _____

Signature: _____

I would like to add the following applicant as a research collaborator.

1 . Applicant (Additional research collaborator)

Name of Affiliation: _____

Position: _____

Name (print): _____

2 . Experiment Title: _____

3 . Application Number: _____ - _____

4 . Beamline Number: BL- _____

BL • Application Number: _____

(Year) (Month) (Day)

Date: / /

Use Implementation Report (FY20 , 1st / 2nd Semester)

* Circle 1st or 2nd.

To: UVSOR Director

Project Leader

Name of Affiliation: _____

Position: _____

Name (print): _____

Signature: _____

I report the UVSOR facility use implementation.

1. Beamline Number: BL- _____

2. Experiment Title: _____

3. Record of Visit.

No.	Name (print)	Affiliation/Position	Period of visit
1		•	20 / / - 20 / /
2		•	20 / / - 20 / /
3		•	20 / / - 20 / /
4		•	20 / / - 20 / /
5		•	20 / / - 20 / /
6		•	20 / / - 20 / /
7		•	20 / / - 20 / /
8		•	20 / / - 20 / /

4. Research Report (approximately 50 words)

5. Others (Presentation and publication plans for this research. Requests and questions regarding the facility)

* Deadline for Activity Report submission will be announced through UVSOR website.

* If the work is published in scientific journals, please be sure to send two copies of reprints to UVSOR office.

* If works will be published in scientific journals which are funded from Use-of-UVSOR Facility Program must be included in acknowledgments, for example, Part of this work was supported by the Use-of-UVSOR Facility Program(BL○○,201X~201X) of the Institute for Molecular Science.

UVSOR Synchrotron Facility User Guide

July 2018

Inter-University Research Institute Corporation
National Institutes of Natural Sciences
Institute for Molecular Science
UVSOR Synchrotron Facility

38 Nishigo-Naka, Myodaiji, Okazaki, Aichi 444 8585, Japan
TEL: +81 564 55 7401, FAX: +81 564 54 7079
<https://www.uvsor.ims.ac.jp/eng/>



UNSOR III
since 2012