

Surface Science Western: Facility Guidelines

1. Sign in and sign out Procedure

- I. All students coming into SSW, are required to manually sign in and sign out each time they visit SSW using the **Student Logbook** located at the Main Office (LL31).
- II. Students who will be conducting analytical work at SSW will be provided a job number.
 - o If you are going to work with a Research Scientist for that day, you will be assigned a new job number.
 - o For students on a flat rate, a new job number will be given to you at the beginning of each term (facilitates our billing and tracking process).
- III. To obtain a job number, you will require: (a) your name, (b) your email ID, (c) your department, (d) your professor's name and their speedcode. Please have all of this information available when you sign in, even if you are on flat-rate billing.
- IV. If you are working with a Research Scientist, please let them know you have arrived, or let reception know so that they can page the Research Scientist.
- V. When you sign out, please also record the following information in the student logbook: (a) your name, (b) your job number, (c) the instrument(s) used, and (d) hours worked **on each instrument** (or, for TGA and DSC, the number of samples analysed).

2. Booking Instrument Time and Procedure for Cancellation

- I. When scheduling time on an instrument, you must notify an SSW staff member ahead of time, ideally one to two weeks in advance, and they will schedule an appointment on the SSW instrument calendar for you. The SSW staff will try our best to accommodate your schedule and book instruments at a time requested by you. However, our instruments could already be booked at that time and you will be notified of available times on the instrument. Moreover, please also note that SSW provides services for industrial clients and occasionally there could be a time-sensitive rush job that will take precedence over other commercial and academic work. In some cases, we will have to reschedule your appointment at the last minute. While we will make every reasonable effort to accommodate your schedule, please be understanding of our time constraints if your appointment needs to be rescheduled. Please check your email before coming to SSW. When scheduling, please let staff members know if samples are time-sensitive (i.e. require specific sample preparations which require immediate analysis afterward) and we will work to accommodate this.
- II. If you are working with a Research Scientist, please be on time for your appointment. If you are not present within 15 minutes of your scheduled time, you may lose your appointment and your appointment will need to be rescheduled. If this happens frequently (i.e. more than three times), a minimum of an hour of instrument time will be charged to your supervisor's account.
- III. If you have booked time on an instrument and are unable to make the appointment, please let us know as soon as possible so others may utilize the instrument.

3. After-hours Access and Key Cards

- If you are planning to work after-hours, please (re)familiarize yourself with SSW's "Surface Science Western: Health and Safety Procedure" document, especially the section entitled "Working alone and after-hours".
- It is important to have read and understood this document before working alone after hours.
- If you have been fully trained and approved by an SSW staff member for after-hours access to work with an instrument or lab procedure, then you may be able to apply for keycard access when the doors are locked.
- After-hours access must be booked ahead of time in coordination with SSW staff, similar to booking instrument time during regular hours.
- If you encounter issues while running instruments after hours, you can notify the instrument owner, but there is no expectation that they will be available to help. Contact information is located on the door of each instrument room. Prior to granting after-hours use, the instrument owner will discuss the proper procedure if instrument issues are encountered.
- SSW's doors are unlocked from 8 am to 4 pm Monday to Friday; all other times including evenings, weekends, and holidays, the doors are automatically locked.
- > *As of **March 2024**, Western students can use their UWO-provided WesternOne Card as an after-hour access to SSW, subject to prior approval. To apply for keycard access using your WesternOne card, please talk to an SSW staff member.*
- For occasional after-hours use, you may be able to sign out a temporary card. If you have borrowed an after-hours access card on a temporary basis, please return the temporary card on the next business day.
- Prior to March 2024, individual keycards were provided to students. These keycards must be returned to SSW when after-hours access is no longer required.
- Please notify an SSW staff if a card is lost or stolen. Note, there will be a fee of \$33.90 (\$30+HST) to replace a lost or stolen non-WesternOne access card.
- When you are done with your work at SSW due to graduation etc., please let us know promptly so we can cancel your after-hours access.
- Students are not permitted to share their access cards with other people. If this occurs, the student responsible for the access card will have their after-hours access revoked.

4. Computer Access, Data Transfer and Data Retention

- I. Access to SSW's internal data server (sswfsprod) is limited to SSW instrument computers and the data transfer computer that is located in the main office.

- II. Students are only allowed access to the “Student” portion of the data server. Access to the “Staff” or “Archive” portions of the data server is prohibited.
 - Please notify SSW staff as soon as possible if you find a computer with access to these areas of the data server.
 - Our data server is NOT intended for long-term storage. All non-instrument-captured files and data will be removed.
- III. When using a laboratory computer, use the “Student” Windows user profile. This profile will automatically connect to the “Student” portion of the data server.
- IV. The instrument computers are not connected to the greater world wide web (public facing internet). Students are NOT permitted to access the internet from any of the instrument computers.
- V. The USB ports on all instrument computers have been disabled. Please do not insert a USB device (portable hard drive, or USB key) into any of the instrument-connected computers.
- VI. When your session is done, you will transfer your data to the “Student” portion of the SSW server (do not save it locally on the instrument hard drive).
- VII. After finishing your work session, please ‘lock’ the student account.
- VIII. For students working either on their own or are on a flat rate, you can obtain your data using the data transfer computer (Student account) in the main office via:
 - OneDrive account
 - An **SSW cleaned USB** key
- IX. SSW will retain the electronic files on the “Student” portion of the data server for five years. After five years, your data files will be removed from the server.

5. Flat rate Guidelines

For short-term analyses, SSW scientists will typically examine the student’s samples and this work will be charged as per SSW’s appropriate academic rate. However, the student may need to use SSW’s instrumentation frequently during their studies. In this case, it may be beneficial to arrange for a flat rate fee structure between SSW and the student’s supervisor. The flat rate option can be a cost-saving advantage and will provide the student with hands-on instrument operation experience and data processing skills. The flat rate fee is to be negotiated between the student’s supervisor and SSW’s Director and can be tailored for: 1) a particular student, project, or group instrument needs, 2) a particular term, year, or full project time frames, and 3) individual students, multiple students, or whole groups, etc.

Below are a few guidelines for instrument usage under the flat rate fee option:

- As part of the flat rate, the student must be able to independently operate an instrument and process their data. Generally, the instrument training is included in the flat rate program with the expectation that, in established groups the senior trained graduate students will help in the training process for new students, thereby reducing the demand on SSW research scientists’ time.
- It is assumed the instrument usage will be frequent enough to maintain a high level of proficiency so as not to require constant input or refreshers from SSW staff.

- Some instruments may also require additional fees (in addition to the negotiated flat rate) for supplies used (e.g. metallographic polishing, DSC pans etc.). Additionally, some instruments which have high maintenance costs (e.g. Micro-CT, DSIMS) are not available for use under the flat rate plan.
- For the students on the flat rate option, if instrumentation training is not feasible or if the student fails to demonstrate a high level of proficiency despite the SSW research scientist's best efforts to train the student, our standard billing procedures (hourly rates) will apply.
- Instrument time will be allotted based on its availability. Given the high demand for some instruments, this may mean that the allotted time may fall outside of "regular work hours". Allotted instrument time may also be rescheduled based on other time-sensitive demands for that instrument.
- Note that the analyses covered under the flat rate are limited to samples from the student's project (for individual flat rates) or from the supervisor's group (for group flat rates). Students are not allowed to run samples for other students or groups not on a flat rate with SSW. Collaborative work for people not included in the flat rate structure must be discussed in advance with the SSW Director and/or the instrument scientist.

6. Recognition Guidelines for Authorship Acknowledgements, and Control of SSW Data

As an integral part of Western University, Surface Science Western (SSW) relies on government funding to acquire and maintain instrumentation. Acknowledging and crediting SSW's involvement in academic research is vital for sustaining government support and ensuring our status as a world-class facility.

While SSW recognizes the right of individual researchers to control the use of their data, we encourage collaboration with SSW scientists during experiments, analyses, and presentation or manuscript preparation. Such collaboration enhances the end product's quality and fosters future research partnerships

SSW recommends the following recognition mechanisms based on currently accepted guidelines[†]

1. Acknowledgement Section

Criteria: When the SSW scientist has been actively engaged in data collection, training the researcher in analytical instrument operation, software utilization, and basic data processing, it is important to acknowledge their involvement, as well as the funding sources for equipment, in the acknowledgment section. In such cases, the SSW scientist's contribution primarily entails minimal assistance.

2. Co-authorship

Criteria: If the SSW scientist has gone beyond the basic training and provided further support in data processing, data analysis and interpretation based on expert knowledge, helped to derive meaningful conclusions, participated in experiments, provided assistance in manuscript preparation, and/or addressed reviewers' comments, then scientist is expected to be included as a co-author.

Complimentary Manuscript / Presentation Editing Services

To ensure the quality of your research output derived from data collected at SSW, the appropriate SSW researcher will vet the section(s) of the manuscript or presentation for technical errors and/or omissions. This service is offered free of charge.

Funding Sources For Equipment Used Should Also Be Acknowledged

Name of the Instrument	Funding Source
Atomic Force Microscopy	SSW Capital Renewal Reserve Fund
Cameca IMS-3f Dynamic SIMS	Western University Second Century Fund / Western University Academic Development Fund
Cameca IMS-6f Dynamic SIMS	SSW Capital Renewal Reserve Fund
Confocal Microscope	Canadian Foundation for Innovation - 2017 Innovation Fund (CFI-IF #35961), Ontario Research Fund
Contact Angle Goniometry	Canadian Foundation for Innovation - 2017 Innovation Fund (CFI-IF #35961), Ontario Research Fund
Digital Microscope	Ontario Advanced Manufacturing Consortium / Ontario Ministry of Research and Innovation.
DSC	Ontario Advanced Manufacturing Consortium / Ontario Ministry of Research and Innovation.
Fourier Transform Infrared Spectroscopy	SSW Capital Renewal Reserve Fund
Hitachi SU3500 Variable Pressure SEM	SSW Capital Renewal Reserve Fund
Hitachi SU3900 Variable Pressure SEM	Ontario Advanced Manufacturing Consortium / Ontario Ministry of Research and Innovation.
Hitachi SU8230 Regulus UHR-FESEM	Canadian Foundation for Innovation - 2017 Innovation Fund (CFI-IF #35961), Ontario Research Fund
Kratos AXIS Nova Spectrometer	SSW Capital Renewal Reserve Fund
Kratos AXIS Supra Spectrometer	Canadian Foundation for Innovation - 2017 Innovation Fund (CFI-IF #35961), Ontario Research Fund
Laser Raman Spectroscopy	NSERC Research Tools and Instrument (NSERC-RTI) / SSW Capital Renewal Reserve Fund
Microhardness Testing	SSW Capital Renewal Reserve Fund
QUV Tester - Accelerated Weathering Tester	Canadian Foundation for Innovation - 2017 Innovation Fund (CFI-IF #35961), Ontario Research Fund
Redlux Coordinate Measuring Machine	Canadian Foundation for Innovation - J. Evans Leadership Fund (CFI-JELF), Ontario Research Fund
Salt Spray Q-Fog Cyclic Corrosion Tester	Canadian Foundation for Innovation - 2017 Innovation Fund (CFI-IF #35961), Ontario Research Fund
Scanning Auger Nanoprobe	Canadian Foundation for Innovation - 2017 Innovation Fund (CFI-IF #35961), Ontario Research Fund
Surface Profiler	Ontario Advanced Manufacturing Consortium / Ontario Ministry of Research and Innovation.
TGA	Ontario Advanced Manufacturing Consortium / Ontario Ministry of Research and Innovation.
Thermo Scientific - iCAP Qc ICP-MS	Canadian Foundation for Innovation - J. Evans Leadership Fund (CFI-JELF #33353), Ontario Research Fund
Time-of-Flight Secondary Ion Mass Spectrometry	NSERC
Tribocorrosion	NSERC Research Tools and Instrument (NSERC-RTI)
UV/Vis	Canadian Foundation for Innovation - 2017 Innovation Fund (CFI-IF #35961), Ontario Research Fund
Weathering Chamber Q-SUN Xenon Test Chamber	Canadian Foundation for Innovation - 2017 Innovation Fund (CFI-IF #35961), Ontario Research Fund
X-ray Diffraction	Canadian Foundation for Innovation - 2017 Innovation Fund (CFI-IF #35961), Ontario Research Fund
X-ray Micro Computed Tomography	Canadian Foundation for Innovation - 2017 Innovation Fund (CFI-IF #35961), Ontario Research Fund