



Boston University Photonics Center Shared Laboratory Usage Policy

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Table of Contents

- 1 Introduction..... 3
- 1.1 Mission Statement 3
- 1.2 Changes in Policy 3
- 2. General Requirements for Lab Usage Agreements..... 4
- 2.1 Fundamental Research (on-campus and off-campus faculty and student research, education, and development of enabling technology) 4
- 2.2 Incubator Companies..... 4
- 2.3 Outside Commercial Entities 4
- 2.4 Research Grants with Outside Commercial Entities..... 5
- 3 Use Policies for Shared Facilities..... 5
- 3.1 Safety..... 5
- 3.2 Building Security 6
- 3.3 Personal Property 6
- 3.4 Chemical Labeling..... 6
- 3.5 Visitors in the Workplace 7
- 3.6 Failure to Comply with Policy..... 8
- 4 STANDARDS OF CONDUCT..... 8
- 4.1 Work Schedule..... 8
- 4.2 Equipment Training and Access to Shared Laboratories 8
- 4.3 Equipment Scheduling..... 9
- 4.4 Personal Productivity and Protection 10

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Boston University Photonics Center Shared Laboratory Usage Policy

4.5	Suggestions for Improvement	10
<u>5</u>	<u>Appendices</u>	<u>11</u>
5.1.1	APPENDIX A – Posted Policy and Procedures one-page summary	11
5.1.2	APPENDIX B – Handling HF/BOE in OPF Lab	12

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1 INTRODUCTION

This document has been developed to explain the requirements of access and privileges to the shared laboratory facilities available at the Photonics Center. The document will describe what is expected of all members and the basic principles of practice and good workmanship standards that should be exercised at all times in the laboratory and cleanroom areas.

1.1 Mission Statement

The Boston University Photonics Center generates fundamental knowledge and develops innovative technology in the field of photonics. We work on challenging problems that are important to society, we translate enabling research discoveries into useful prototypes, and we educate future leaders in the field.

This mission is executed through:

- Basic research and scholarship in photonics.
- Academic and entrepreneurial programs and initiatives for students.
- Technology development for healthcare, defense, and security applications.
- Business innovation and commercialization of photonics technology.

The Photonics Center community of faculty, students, and staff engage in numerous interdisciplinary collaborations to further the field.

1.2 Changes in Policy

This manual supersedes all previous user policies and memos.

While every effort is made to keep the contents of this document current, Boston University Photonics Center reserves the rights to modify, suspend, or terminate any of the policies, procedures, and/or benefits described in the manual with or without prior notice to users of the facilities.

2. GENERAL REQUIREMENTS FOR LAB USAGE AGREEMENTS

2.1 Fundamental Research (on-campus and off-campus faculty and student research, education, and development of enabling technology)

The shared laboratories support the research and education of the students and faculty members. Access to the shared facilities is open to all academic members of the Boston University community. Access is also open to incubator companies who have an association with Boston University's research and entrepreneurship programs.

Outside not for profit organizations and universities are also eligible for access to use the shared laboratories and will be charged for use of equipment and supplies as stated in the rate schedule agreements that are included with the Standard Laboratory Usage Agreement provided to external users through the Office of General Counsel.

2.2 Incubator Companies

The shared laboratories support the commercialization effort of incubator companies who have an association with Boston University's research and entrepreneurship programs.

Incubator companies housed at the University are required to sign the Standard Laboratory Usage Agreement to have access to and use the shared laboratories. Usage will be charged at internal rates. Once an incubator company leaves the University, they are still eligible to maintain rights of usage to the shared facilities by renewing their Standard Laboratory Usage Agreement, but will be charged external rates.

2.3 Outside Commercial Entities

External commercial entities interested in utilizing the shared laboratory facilities at the Photonics Center must adhere to the following guidelines:

- **Research-Oriented Use:**

Activities must be strictly research-focused. The production of goods for commercial sale using university equipment or facilities is prohibited.
- **Submission of Requests:**

External users must submit a formal request to the Technical Director. This request should include a description of the intended research activities, the facilities required, and the anticipated duration of use.
- **Evaluation and Approval Process:**

The Technical Director, in consultation with the Center Director, will review the request to determine if granting access benefits the Photonics Center and aligns with its mission. Approval will be based on the potential research contribution, societal impact, compatibility with facility availability, and adherence to safety and operational standards.

- **Usage Agreement and Fees:**

Approved external entities must sign the Standard Laboratory Usage Agreement, which outlines the terms and conditions of facility use. Fees will be charged at the rates specified in the agreement.

2.4 Research Grants with Outside Commercial Entities

If an outside company shows an interest in research collaboration with a faculty member at the Center, the outside company should submit a grant proposal to the Office of Sponsored Programs. For clarity, production of a manufactured product for sale is NOT allowed on any university equipment or in any university facilities or by any university employees (including supported graduate students). If the grant is approved, the student being supported will have access to all shared facilities as in 2.1 Fundamental Research.

3 USE POLICIES FOR SHARED FACILITIES

3.1 Safety

The safety and health of users is a priority. The Boston University Environmental Health and Safety Office (EHS) make every effort to comply with all federal and state workplace safety requirements. The shared laboratory workplace safety rules and regulations are as follows:

- Adhere to the standard EHS protocols at all times
- Follow all manufacturer suggested safety protocols for equipment or chemicals
- Ensure you as the user are fully informed and understand the safety requirements for your process
- Complete Laboratory Safety Training and Chemical Safety Training courses prior to requesting training in shared facilities. The Office of Environmental Health and Safety offers some in person training, but it is encouraged that all BU affiliated users take their safety training online via SciShield (<https://bu.scishield.com/raft/training/courses/>)
- Participate in laboratory specific specialized safety trainings if applicable
- If you will be using a chemical fume hood in any of the shared laboratories, you must complete the Hood Safety Training video (<http://www.bu.edu/photonics/opf-hoodsafety-training-video/>) and its corresponding quiz. This link is password protected, you must contact the laboratory managers to receive the password to watch the video and submit the quiz upon completion."
- The User shall not bring to the Photonics shared facilities, nor use during access to or use of the Shared Facilities, any radioactive, biological, or other hazardous materials without obtaining prior written consent from a BUPC lab manager. Any such consent will be subject to compliance with specified terms and conditions, including restrictions on the use, storage, and handling of such materials.
- If you intend to use Hydrofluoric Acid (HF) or Buffered Oxide Etch (BOE), you must review and follow the protocols in Section 5: Appendix F.

Each user is expected to obey safety rules and exercise caution and common sense in all work activities. Failure to do so will result in revoking access to the facilities. Section 5: Appendix A includes a one-page summary of safety information and contact numbers for reference. If a user finds a work area in an unsafe condition, they should

immediately stop work and report the findings to the laboratory manager. If the area is in an unsafe condition, users should not attempt to use that work area or clean the area without the express permission of the laboratory manager.

3.2 Building Security

All users must follow the building security rules and regulations listed here:

- Follow the regulations per Boston University EHS Office
- The lab manager must grant access to the shared laboratories through the electronic card key access. Failure to be authorized by the lab manager and gaining entrance via other means may result in revoking privileges in the facility. Providing users with access to the laboratory who are not authorized may also result in revoking privileges to the facility.
- Users are not allowed in any of the BUPC shared facilities outside the standard working hours (Monday through Friday 8 am to 6 pm) without prior authorization from the respective lab manager. Users must comply with the policy on after-hours access to shared facilities. A first offense will result in a formal warning, a second offense in a one-week suspension of access, and a third offense in a two-week suspension. A fourth offense will lead to permanent loss of access.

3.3 Personal Property

i. **Labeling Requirements:**

Users must clearly label any items they bring to the shared laboratory with their name and affiliation. Proper labeling is solely the responsibility of the user.

Example of proper labeling:

Jane Doe – ABC Research Group (Private Use Only)

ii. **Unattended Items:**

The Photonics Center and its staff assume no responsibility for personal property, including user samples or equipment, left unattended in the shared facilities. Users are responsible for securing and monitoring their own materials at all times.

iii. **Shared Items:**

Materials or equipment labeled for shared laboratory use will be treated as general-use items. Users are required to clean and store such items properly after use to ensure availability for others.

iv. **Abandoned Property:**

Any personal property deemed abandoned will be removed and disposed of at the discretion of the laboratory manager. Users should regularly monitor and maintain their materials to avoid removal.

3.4 Chemical Labeling

In compliance with BU EHS regulations, users must adhere to the following guidelines for proper labeling and handling of chemicals and associated waste in the shared laboratory facilities:

i. **General Labeling Requirements:**

All chemicals and waste containers must be labeled in **English**.

Labels must include the **chemical name** (not the chemical formula).

ii. **Approval for Non-Stock Items:**

Users must notify and seek approval from lab managers **before bringing any chemicals or materials** into the shared facilities that are not standard stock items. This ensures compatibility and suitability for use in the laboratories and equipment. Failure to provide adequate advance notice will result in a **failure to comply warning**, with written notification to the user and their Principal Investigator (PI). Repeated violations may escalate to a **safety violation**, leading to **immediate suspension of access** to the shared facilities (see Section 3.6).

iii. Chemical Labeling Details:

All chemicals must include the following information on their labels:

Name of the user

Research group or PI name

Name of the chemical(s)

Contact phone number of the user

iv. Temporary Use and Process Monitoring:

If chemicals or processes are left temporarily on a hood or bench (e.g., cooling or soaking), a note must be clearly displayed and include:

Name of the researcher

Research group affiliation or PI name

Contact phone number

Chemical composition

Process start time and expected return time

Notes can be written on a cleanroom-compatible tech wipe and placed under or near the container.

v. Unattended Chemicals:

As stated in Section 3.3, the Photonics Center and its staff are not responsible for safeguarding unattended chemicals or samples. Users are fully accountable for their materials at all times.

vi. Examples of Proper Labeling and Communication:

Example 1:

Jane Doe – Professor ABC's group

617-353-3000

Acetone soaking bath started at 11/02/2016, 2:00 p.m. Will return at 2:30 p.m.

Example 2:

John Doe – Professor ABC's group

617-353-2000

This beaker contains a mixture of piranha etch (3:1 mix of Sulfuric Acid + Hydrogen Peroxide). Process started at 11/02/2016, 3:00 p.m. Will return at 4:30 p.m.

vii. Enforcement:

Failure to comply with this policy will result in a warning. Repeated violations or escalation to safety violations will follow the disciplinary protocols outlined in Section 3.6.

3.5 Visitors in the Workplace

For safety, insurance, and other business considerations, only authorized visitors are allowed in the workplace. When planning for visitors, users should notify the laboratory manager and confirm that the visitors might enter the facility and understand the restrictions placed upon the visitor. Visitors who are not authorized shared users of the laboratory are not allowed to be left alone or operate any of the shared laboratory equipment.

3.6 Failure to Comply with Policy

Failure to comply with the regulations outlined in this agreement will result in the following escalating consequences:

1. First Offense:

A formal warning will be issued to the user and their PI.

2. Second Offense:

Suspension of access to the laboratory for one week.

3. Third Offense:

Suspension of access to the laboratory for one month.

Reinstatement of access will be contingent upon successful completion of lab safety training and shared lab training requirements.

4. Severe Violations (e.g., spills or emergencies):

If a user fails to follow BU EHS protocols during a spill or emergency, membership to all shared labs will be immediately suspended.

Reinstatement will require:

- Completion of Laboratory Safety Training.
- Re-training specific to the lab in which the incident occurred.

Reporting Violations

Users are responsible for reporting any observed safety infringements or misuse of tools:

- Reports should be made to the lab manager.
- If the lab manager is unavailable, the incident must be reported to the main office of the Photonics Center.

Reference for Emergency Procedures

The BU EHS protocol must be strictly adhered to during all lab operations and emergencies.

Detailed instructions can be found in the laboratory and on the flip-chart provided in each lab. These protocols are also covered during annual Laboratory Safety Training

4 STANDARDS OF CONDUCT

4.1 Work Schedule

The standard operating hours for the Photonics Center Shared Labs are **8:00 AM – 6:00 PM, Monday through Friday**. All users of the shared facilities are required to work during regular normal working hours unless given permission to do otherwise by both their immediate supervisor and the laboratory manager.

NOTE: Trained and qualified undergraduate students may work in the shared laboratories during normal working hours. However, they must be supervised at all times when using shared facility equipment outside of normal working hours, including evenings, weekends, and holidays.

4.2 Equipment Training and Access to Shared Laboratories

If you are interested in getting trained to use specific equipment in the shared laboratories: Optoelectronic Processing Facility (OPF), Precision Measurement

Laboratory (PML) and the FIB/TEM Facilities (FTF) of the Boston University Photonics Center, please use the following procedure:

Provide proof that you have taken BU Laboratory Safety Training and Chemical Safety Training courses prior to requesting training in shared facilities. The Office of Environmental Health and Safety offers some in person training, but it is encouraged that all BU affiliated users take their safety training online via SciShield (<https://bu.scishield.com/raft/training/courses>)

- 4.2.1 Laboratory safety training needs to be updated every 12 months.
- 4.2.2 Contact the individual lab manager to arrange an initial consultation. The most up-to-date list of shared lab personnel is available on the Photonics Center's Shared Labs webpage. (<https://www.bu.edu/photonics/sharedfacilities/>)
- 4.2.3 Once the lab manager is contacted, either an initial consultation will be arranged or the user will be asked to fill out a research goal form describing the intended application and providing information on:
 - the nature and goal(s) of your research
 - the process you use or intend to use to prepare your samples
 - what you expect to gain from using the specific instrument
 - the duration of your research/use of the instrument and how often you expect to use it
 - faculty and/or company affiliation
- 4.2.4 After initial consultation or research goal form submitted, training by the lab manager, a qualified user of the instrument, or video training will be provided.
- 4.2.5 During training, a qualified user must be with you by the instrument at all times while you are learning to operate it. You are not permitted to use the instrument alone before being officially qualified.
- 4.2.6 After the training, you must demonstrate to the lab manager that you can operate the instrument independently by passing a self-user qualifier, if applicable. You will then become a qualified user of the instrument and room access will be granted to you through the on-line [Ccure portal](#).

NOTE: For instrument specific training policies and procedures, please consult [Shared Labs website](#)

4.3 Equipment Scheduling

All equipment for use in the shared laboratories is available for on-line scheduling. It should be noted that only self-users are allowed to access these calendars with permissions granted from the lab managers. All equipment must be reserved online using the [FOM Networks](#) platform, which can be accessed using your Kerberos username and password.

- 4.3.1 Be sure to use the Equipment Scheduling Procedure (found [here](#)) as a reference on how to sign up for equipment time. Make sure to study the user manual to familiarize yourself with the policies and protocols regarding scheduling to ensure proper usage..
- 4.3.2 Advanced scheduling and maximum allowed time per user per day are determined on an instrument-specific basis. Users must verify these restrictions within the FOM Networks platform before making reservations.

Failure to adhere to equipment reservation policies outlined in the FOM platform constitutes a

violation of the laboratory scheduling policy. Consequences for violations are as follows

- **First Violation:** Verbal or written warning.
- **Second Violation:** Loss of room access for one week.
- **Third Violation:** Loss of room access for one month. Reinstatement requires completion of updated lab safety training and equipment/shared laboratory re-training.

4.4 Personal Productivity and Protection

i. Working Alone in OPF:

Users are strongly encouraged to avoid working alone in the Photonics Center shared labs outside normal working hours, including weekends and holidays. If working alone during these times is unavoidable, the user must notify a designated contact (such as a colleague, lab manager, or supervisor) in advance, providing details of their schedule and expected duration.

ii. Emergency Preparedness:

Users must know emergency protocols, safety equipment locations, and contact information.

iii. Safety glasses and gloves

They are provided in all of the shared laboratories. Be familiar with the chemicals and materials that other users are using and be sure to follow the recommended guidelines set by BU EHS, the shared laboratories, and OSHA guidelines. Approved safety glasses must be worn at all times in the OPF lab, except during microscope viewing. For PML and FTF, safety glasses should be worn while using solvents and when completing any scribing/cleaving, sample preparation, and hood work.

iv. Policy on HF and BOE Usage in the BU Photonics Center

In the BU Photonics Center at 8 Saint Mary's Street, the use of **liquid Hydrofluoric Acid (HF) and Buffered Oxide Etch (BOE)** is strictly limited to the Optoelectronic Processing Facility (OPF). This restriction ensures that these hazardous chemicals are handled in a controlled environment equipped with proper safety measures. The OPF is specifically maintained with up-to-date personal protective equipment (PPE) and readily available Calcium Gluconate Gel, both of which are routinely inspected to ensure user safety. To minimize risks, the transport of HF or BOE to other laboratories is strictly prohibited. These chemicals must not be poured into secondary containers or removed from the OPF under any circumstances. Comprehensive safety protocols and training requirements for handling HF and BOE in the OPF are detailed in Section 5: Appendix F, "Handling HF/BOE in OPF Lab." Users are required to complete this training before working with these substances. Additionally, BU's EHS provides further training on HF usage, which can be accessed via their online resources. ([link.](#))

NOTE: HF gas is prohibited in any laboratory at the Photonics Center.

4.5 Suggestions for Improvement

It is encouraged to add suggestions to the logbook or to communicate suggested improvements directly to the laboratory manager via email. The shared laboratories provide an environment conducive to enhancing educational and research areas of interest through continuous improvement.

5 APPENDICES

APPENDIX A – Posted Policy and Procedures one-page summary



Gas Leak/Chemical Spill
24-hour EHS Emergency:
617-353-2105 (3-2105)



Fire/Life-threatening Medical Situation
24-hour BU Police Emergency:
617-353-2121 (3-2121)



Minor Injury/Chemical Exposure
Research Occupational Health
617-414-7647

- In addition to EMERGENCY calls, contact the appropriate lab manager. The current lab managers and their contact information is listed on BUPC shared labs website: <https://www.bu.edu/photonics/sharedfacilities/>
- All Emergency calls must be followed up with a call to BU Photonics Center Office: 617-353-8899 **(3-8899)**
- Users are strongly encouraged to avoid working alone in the Photonics Center shared labs outside normal working hours, including weekends and holidays. If working alone during these times is unavoidable, the user must notify a designated contact (such as a colleague, lab manager, or supervisor) in advance, providing details of their schedule and expected duration.

APPENDIX B – Handling HF/BOE in OPF Lab

All users interested in using Hydrofluoric Acid (HF) or Buffered Oxide Etch (BOE) must complete steps 1 - 7. Please contact the lab manager, Paul Mak (pmak@bu.edu), (617) 353-8869 for initial consultation and discussion for your research application and usage of these chemicals.

1. Your General Laboratory Safety Training and Chemical Safety Training must be up to date and renewed annually. The Office of Environmental Health and Safety offers some in person training, but it is encouraged that all BU affiliated users take their safety training online via SciShield (<https://bu.scishield.com/raft/training/courses>)
2. Upon initial contact with the lab manager, the level of training will be determined based on the following criteria:
 - a. If you have experience using HF/BOE at another location, you will need to learn the operating procedures for using OPF in order to become a certified self-user.
 - b. If you have not used a HF/BOE previously, it may be recommended that a more senior member of the laboratory with HF/BOE experience shadow you for a few times using the chemicals to ensure proper handling and understanding of using these chemicals.
3. You must complete the OPF Laboratory Hood Safety Training video (<http://www.bu.edu/photonics/opf-hoodsafety-training-video/>) and corresponding quiz. This link is password protected, you must contact the laboratory manager to receive the password to watch the video and submit the quiz upon completion.
4. After completion of the video, contact the lab manager to arrange for a final review of processing.
5. During the initial training period, a **certified self-user of the laboratory with HF/BOE experience must be present at all times**. You are not permitted to use HF/BOE alone before official certification.
6. After training, you must demonstrate confident and independent handling of the chemicals. The lab manager will then certify the user (as an OPF self-user) or recommend more training. Depending on the demonstrated proficiency the user may be granted a Limited Hours Access to OPF. Description of user samples and, if applicable, the preparation protocol needs to be provided.
7. Once certified as a self-user of OPF, you will be allowed to schedule using the FOM scheduling software for hood usage, but with HF/BOE you must always have a partner in OPF and are not to work alone with these chemicals.

NEW SAMPLE TYPES/SAMPLE PREPARATION PROTOCOL CHANGES: If the user's samples and/or their protocol changes, the user should notify the laboratory manager prior to using the process or samples.

Document History:

Document Owner(s)	Project/Organization Role
Hossein Alizadeh	Technical Director
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Thomas Bifano	Director

Version Control:

Version	Date	Author	Change Description
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2	11-02-06	Helen Fawcett/Robert Schaejbe	Edits to original document
3	03-06-08	Helen Fawcett	Addition of Lab Policy and Procedure Posting and insertion in document
4	12-23-08	Helen Fawcett/Robert Schaejbe/ Anlee Krupp	Addition to Equipment Scheduling Policy, updated Appendix
5	03-04-09	Helen Fawcett/Robert Schaejbe/ Anlee Krupp	Clarification to Equipment Scheduling Policy
6	02-18-11	Helen Fawcett/Robert Schaejbe/ Anlee Krupp	Addition of Equipment training, modification to Equipment Scheduling Policy, and update and addition of appendices
7	11-25-14	Helen Fawcett/Robert Schaejbe/ Anlee Krupp/Paul Mak/Alexey Nikiforov	Modification to Equipment Scheduling Policy and update and addition of appendices
8	11-05-16	Helen Fawcett/Anlee Krupp/Paul Mak/Alexey Nikiforov	Modification to entire document for updates on policies and procedures
9	4-19-17	Helen Fawcett/Beth Mathisen	Modification to remove the reference of IOL.
10	6-17-19	Helen Fawcett	Modifications to add Appendix F. Handling HF/BOE in OPF Lab and an update to section 4.4 Personal Productivity and Protection to include the restriction to HF/BOE use in OPF only at the Photonics Center. Updates to EHS laboratory safety training and general updating of the document.
11	1-29-20	Helen Fawcett/Thomas Bifano	Modifications to 4.4 Personal Productivity and Protection to clarify that the restriction to HF/BOE use in OPF only at the Photonics Center excludes the use of HF gas in any laboratory at the Photonics Center.
12	03-02-25	Hossein Alizadeh	Modifications to Sections 2.2, 2.3, and 2.4 specifying the process and criteria for incubator and external companies to gain access to and use the Photonics Center shared

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			<p>labs. Updates to Section 4.4 (Personal Productivity), including revisions to the policy on working alone. Clarifications in Section 4.3 regarding equipment reservation policies and procedures. Updated the EH&S training website. Removed certain appendices on individual instrument training policies, as these policies are now included in the respective instrument SOPs.</p> <p>Changes to Section 3 outlining training and reservation policies and procedures, chemical labeling requirements, and guidelines for unattended samples</p>
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