



Principal Investigator:

Michael Walter (A-105, x8951)

Emergency Information:

Michael Walter (cell): 202-644-3595

Secondary Contacts:

Jing Yang (G02, x8995)

BBR (Gary Bors): 202-510-8577

All other emergencies: 911

Purpose:

This laboratory contains general facilities used for diamond anvil cell preparation, including ruby system for pressure measurement and gasket pre-indentation, EDM and laser milling for gasket drilling, micro-manipulator for delicate sample loading, and profilometer for surface measurement.

All laboratories and facilities on the Broad Branch Rd. campus are controlled areas. Specific training must be completed and documented before working in this laboratory / facility.

• **Gasket Drilling**

1. EDM machine and drill bits. The use of EDM machine requires training. Taking good care of the drill prevents breaking or damage of the drill bit. Report to Jing Yang if you find the drill bit is not straight or with wrong dimension. Never pour electrolyte liquid directly into the sink but dispose of into appropriate bottles kept for this purpose.
2. Laser drilling system. The use of laser drilling machine requires training. Never try to open the back door of the system to expose the optics. Contact Jing Yang or Javier Rojas for help if you encounter any problem with the system.
3. Beryllium gasket drilling is extremely hazardous and safety protocols for drilling these have been established, are available in the lab, and need to be followed strictly.

• **Use of Ruby-Raman System**

1. Training is required before you can use the system.
2. Do not try to align the system without help from qualified personnel.
3. Wearing appropriate laser goggles when using the system is required.

• **Use of Micromanipulator**

1. Training is required to operate the manipulator.
2. Turn off the LED light when not in use.
3. Turn off the three motor control boxes when you are finished using the micromanipulator.
4. Please contact Jing Yang for appropriate training.

• **Use of Zygo profilometer**

1. The use of Zygo machine requires training.
2. Voltages supplied to and within certain areas of the system are potentially dangerous and can cause injury.
3. This optical profiler is equipped with a motorized stage that can create pinch points, where the fingers can get caught or crushed. Do not try to move the stage with your hands near to the stage.

• **Emergency Procedures**

1. Fire extinguisher
2. First aid kits
3. Emergency shower eye wash



4. Emergency Power Off Switch
5. Inform the PI immediately of any problems or safety incidents.

- **Miscellaneous**

1. Food and drinks are not allowed into the sample preparation laboratory.
2. Close the lab door and turn off the lights at the end of the day if you are the last person working in the lab.

Laboratory User

I agree that I have thoroughly read and understood this laboratory safety document. I have access to this safety information at all times when I am working. I have been trained to be able to identify the hazards to which I may be exposed and to follow the work practices and procedures discussed in this document. I certify that I will conduct my research work safely and that I will be responsible for following stated safety policies.

User Name (Print)

User Signature

Date

Principal Investigator

I certify that the information presented in this safety document is accurate and complete. I agree to comply with all safety procedures and to fully train and supervise all researchers under my direction.

PI Signature

Date