Principal Investigator:
Yingwei Fei (R102, 202-478-8936)

Secondary Contacts:
Tim Strobel (R105, ×8943)
Anat Shahar (R202, ×8929)

Emergency Information:
Staff Member: 301-509-4678 (cell)
BBR (Gary Bors): 202-510-8577
All other emergencies: 911

Purpose:
Sample preparation including machining multi-anvil parts (R-G21) and assembling high-pressure cells (R-G22).

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.

List of laboratory equipment and user instruction

- **Chemicals Standard Operational Protocol:** Reagent chemicals are only stored in R-G22. Study MSDA sheets on all chemicals that you work with. Appropriate protection must be worn when transferring chemicals, including protective gloves and eye ware. Date each chemical to record the day it was opened. Only take what you need and do not return unused chemicals back to main reservoir.

  All chemicals must be stored in appropriate cabinets. Acids and Bases are never stored together. Only dilute mineral acids may be discarded into marble chip baths. No chemicals may ever be poured into any sink or drain. Chemicals that need to be disposed of shall be stored in appropriate cabinets until laboratory-wide storage removal is initiated (~ annually). When purchasing chemicals, try to buy as little as possible to minimize.

  Familiarize your self with where the various chemicals are stored based on type, reactivity, and flammability.

  All samples must be labeled in such a way as to be immediately identifiable. Unlabeled vials constitute a serious offense and can lead to loss of laboratory privileges.

- **Stereo Microscopes and Miscellaneous Lab Tools (R-G22):** There are four stereo microscopes with optical fiber lighting. Keep the workbench clean and organize tools for general users. Maintain all the microscopes in operational condition.

- **Laboratory Drying Ovens (R-G22):** There are two drying ovens used for storage of parts and samples. They are set at 100 ˚C. All materials stored in the oven must be labeled with user name.

- **Welding Machine (R-G22):** The use of this equipment requires training.

- **Lathe (R-G23):** The use of this equipment requires training. User must wear safety glasses and dusk mask. Lathe operators must be trained and held accountable for following safe

work practices before they begin work. This is essential in avoiding injury. Examples of safe work practices include not wearing loose clothing, rings and other jewelry, keeping long hair pulled back while operating a lathe and keeping hands and fingers away from rotating parts.

- **Diamond Grinder (R-G23):** The use of this equipment requires training. User must wear safety glasses and dusk mask.

- **MDX540 CNC Milling Machine (R-G23):** The use of this equipment requires training.

- **Compressed Gases, Storage, and Disposal:** All compressed tanks must be stored in the storage area. Unused tanks must have end-caps securely fastened. Do not store H_2 in close proximity to O_2. Do not use carbon monoxide without permission. Empty tanks are to labeled "EMPTY" and returned to the loading dock storage area for pickup. Specialty gases from suppliers other than Roberts or Airgas will require special arrangements for pick up.

  All in-use tanks must be securely attached to fixed bodies, e.g. bench top. Appropriate regulators are required for compressed gases.

- **After Hours Restrictions:** Any chemistry performed in the hoods or on the bench that involve reactive compounds (e.g. flammable liquids, metals, strong acids or bases, strongly exothermic reactions other potential for explosion) should be performed during standard working hours to ensure that if an accident should occur proper response will be promptly initiated. In order to perform any chemical reactions that involve potentially reactive substances or products (see above) or have the potential for explosion (e.g. distillations or vacuum evaporation) after hours requires that a second person must be identified who is 1) in the building during such work, 2) made clearly aware of the scope of the proposed work and the potential danger, and 3) is willing to check in at a frequency not less than once an hour to ensure safety.

  The use of instruments after hours is not restricted. The repair of instruments after hours is subject to the same restrictions as after-hours chemical processing.

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