

**Principal Investigator:**

Yingwei Fei (R102, 202-478-8936)

Secondary Contacts:

Tim Strobel (R105, ×8943)

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Emergency Information:

Staff Member: 301-509-4678 (cell)

BBR (Gary Bors): 202-510-8577

All other emergencies: 911

Purpose:

Function of this room includes performing high-pressure experiments, firing parts and samples to high temperature, mixing starting materials, and inspecting recovered samples.

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:** Only humidity-sensitive reagent chemicals are stored in designated desiccators in this room. 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. Store chemicals in the desiccator after use. All samples must be labeled in such a way as to be immediately identifiable.
- **Laboratory Furnaces and Drying Ovens (R-G25):** There are two Delta high-temperature furnaces for firing samples, including one gas-mixing furnace using CO, CO₂, or Ar gases. Training is required to use the furnaces.

There are two high-temperature ovens (up to 1100 °C) for firing parts/samples and one drying oven (100 °C) used for storage of parts and samples. All materials stored in the oven must be labeled with user name.

- **Balance and Petrographic Microscope (R-G25):** Training is required before use.
- **Multi-anvil Presses and Piston-cylinder Apparatus (R-G25):** Access to the presses is subject to scheduling. All users must be trained first before using the presses. Recording of all experiments in the lab books is required. Information for each experiment should include user name, date, the type of sample and assembly used, conditions of the experiment, and instrument performance. It is essential to have basic knowledge of the hydraulic pumping system for each press and its operation procedures. Monitor all pressure gauges during the experiments and never exceed the marked limits on the gauge. Report any malfunction of the instrument.
- **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 H₂ in close proximity to O₂. Do not use carbon monoxide without permission. Empty tanks are to be 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