



**Principal Investigator:**

Anat Shahar: R202, x8929

**Secondary Contacts:**

Yingwei Fei: x8936

**Emergency Information:**

Anat Shahar: 310-980-7148 (cell)

BBR (Gary Bors): 202-510-8577

All other emergencies: 911

**Purpose:**

Experiments at ambient pressure and high temperatures. Three ambient-pressure furnaces, some with the ability to control oxygen activity via CO/CO<sub>2</sub> gas mixing.

**General Laboratory Features:**

- All users must be trained first before using the furnaces.
- Do not offer to train any other user unless explicitly approved by responsible staff member.
- All equipment brought into the lab or purchased for the lab must be approved by responsible staff member.
- Experiments in this laboratory by their very nature can last for days or weeks. In order to assure safe operating conditions, before leaving the laboratory, satisfy yourself that all procedures are normal and check on the experiment a few times (in the first few hours) before leaving it unattended overnight.
- Do not try to fix anything in the lab if you are there after hours or alone.
- Fire extinguisher is located near entrance door.
- Emergency shut-off is located next to the entrance door.
- Emergency shower is located near the sink.
- Emergency eye wash is located over the sink.

**Specific Laboratory Features:**

- Hazards: High pressure gas cylinders and carbon monoxide gas, high temperature furnaces
- Burn and and both onert and toxic gas inhalation possible. Can cause severe burns or death. Use protective gloves (available) and eye protection.
- All samples must be labeled in such a way as to be immediately identifiable.
- Always clean up after yourself.
- Compressed gas, storage, and disposal
  - Appropriate regulators are required for compressed gasses. All compressed tanks must be stored in the storage area.
  - Unused tanks must have end-caps securely fastened. Do not store H<sub>2</sub> in close proximity to O<sub>2</sub>.
  - All in-use tanks must be securely attached to fixed bodies, i.e. the wall.
  - Empty tanks are to labeled "EMPTY" and returned to the loading dock storage area for pickup. Specialty gasses from suppliers other than Roberts or Airgas will require special arrangements for pick up.
- Whenever using gas mixing:
  - Initiate process by purging with inert gas (ie, CO<sub>2</sub>) before adding combustible gas (H<sub>2</sub> and/or CO)
  - Upon completion of experiments, turn off flow of combustible gas first
  - Ensure that CO alarm is working when using CO gas



- Never use gas mixing except through designated flow meters
- Ensure that furnace is gas tight before use.
- Use insulating gloves whenever handling hot equipment and/or samples
- Use dark glasses when staring directly at samples at high temperature
- Chemical handling, storage and disposal:
  - Read and know all MSDS sheets on all chemicals that you work with
  - Wear appropriate protection on eyes, hands, and arms when transferring chemicals
  - No chemicals can be poured down the drain
  - Date each chemical to record the day it was opened
  - Only use what you need
  - Chemicals that need to be disposed of shall be stored in appropriate cabinets until laboratory wide storage removal is initiated (~annually).
- Lab Chemicals:
  - Familiarize yourself with where the various chemicals are stored based on type, reactivity, and flammability.
- Balance and Microscope
  - You must get permission from me before using the microscope for the first time
  - Polishing Supplies
- Wear goggles when polishing by hand

**Sample labeling and storage:**

This laboratory is not for sample storage. If you need to leave a sample behind before proceeding to further sample processing, ensure that it is clearly marked with content and ownership.

**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