

Wrong operation of equipment or devices in a laboratory causes serious accident. Learn correct knowledge about safety and health management and follow the rules.

## 1. General instructions in the laboratory

- Generally, do not use a high temperature heating experimental equipment that possesses a risk of fire or other hazards at night (10 p.m. to 5 a.m.) or on holidays.
- Keep things tidy and in order properly. Do not keep common use things by yourself. Return them to the original place after use. Do not use other's desks and private things without permission.
- Use the equipment or devices after receiving the instruction by the supervisor. The operation of the equipment which you don't understand the usage is strictly prohibited.
- When you damaged or lost the equipment or devices, report it immediately.
- Beware of electric wires or cables. Do not overload power sockets by plugging too many electrical appliances and extension cords (Danger of Fire). Preventing fire caused by tracking.
- Keep the sinks clean. Do not drain reagents or organic solvents into the sink. Do not grind or polish ceramics such as  $\text{LaCrO}_3$ ,  $\text{ZrO}_2$ ,  $\text{MgO}$ , etc. in the sink. Clean the sink and the drain well and wipe up splashed water droplets after use.
- Separate wastes according to type and dispose of them to the appropriate place. Do not leave an empty bottle or a box. Use a new thing after using up the old one.
- Pay attention about lights out and locking (lock the door after 18:00 if there is nobody). Do not change the setting of air conditioners.
- **Eating, drinking and listening to music are prohibited. The earphones are also prohibited.**

## 2. Caution about general working

- Beware not to get clothes caught in machines, such as a lathe, a drilling machine, a planer, an NC processing machine, etc. Wear a dust protective mask and safety glasses when you use these machines. **Wearing the gloves (including nitrile gloves) and a white robe are prohibited when using these machines.**
- Caution about burns when you use an electric furnace and a hot plate.
- Wear protection glasses when you use a welding machine and a carbon coater.
- Fully understand the danger of high pressure gases and handle them safely. Be careful about ventilation while you are using hazardous gases, for example, using an electric furnace under the oxygen fugacity control.
- Extreme care must be used in handling chemicals. Especially, acetone is harmful and must be handled in a fume hood. Work it in a short time and be careful not to drink it by mistake or absorb it in large quantities. Also, do not leave the acetone bottle outside the fume hood. During and after

use, be sure to close the door of the fume hood to its lowest position.

### 3. Caution about high pressure experiments

(multi-anvil device)

- In the case of blowout, broken pieces may be scattered.
- Warning about an electric shock while you are heating. Turn off the main electric power source before you confirm the connection of cables and touch the device.
- Used anvils may be broken after experiment because of the stored strain. Wear the protection glasses when you clean and handle the anvils. Also, store them in the box.

(DAC)

- Do not work under the microscope for a long time, work while taking a break.

### 4. Caution about laser (cutting device, Raman, IR, and heating system for DAC)

- Wear protection glasses in accord with the wavelength of each laser. Caution about exposure by the invisible laser. Be careful about the reflected laser, too.

### 5. Caution about XRD

- Wear a film badge at the prescribed position: chest for man, lower part of the abdomen for woman.
- An X-ray is not visible. Pay special attention not to be exposed to the radiation.

### 6. Caution about SEM, FIB and TEM

- Ensure to operate the correct way for the analytical equipment. The misoperation causes a serious trouble. When you do not understand the operation method, always ask supervisor without using them.

### 7. Measures at emergency

- Keep calm and act in emergency.
- Confirm the evacuation routes, emergency exits and AED place. The evacuation routes and AED place are shown at the entrance of GRC building. There are three evacuation routes on 4F, i.e., stairs on the east and west, and fire escape on the balcony. Do not use the elevators in emergency. After refuge in outdoors, gather at the courtyard in front of the main building of faculty of science.

Others

**All laboratory users must attend the cleaning of our laboratories every Thursday morning from 9:30am to 10:00am. The personal work in this time is prohibited.**