

Health and Safety Information for AFM Group Laboratory Rankine Building Rooms 713, 713A and 713B

Code of Practice

Level 7 Rankine Building

Electronic & Nanoscale Engineering, School of Engineering, University of Glasgow

Prepared by John Weaver 29 June 2020

All Laboratory Users must read this document in full

- 1) No work may be carried out in the L7 AFM lab area of the Rankine Building without the prior permission of Professor John Weaver or Dr. Phil Dobson
- 2) No work may be carried out until all necessary safety documentation has been read and understood. New staff and students should also make themselves aware of the positions of safety equipment in the various labs.

These are:

Emergency telephone number is 4444

Fire Extinguisher (corridor)

First Aid kit

Safety goggles (laser lab 713)

Emergency Exit (either end of the main corridor)

- 3) Any work outwith '9 to 5' requires discussion with Prof. John Weaver or Dr. Phil Dobson and explicit permission obtained before out of hours running of experiments is undertaken. No one is to work alone when using hazardous materials or processes.

- 4) Where necessary, safety spectacles must be worn.

In the event of an accident or mishap tell someone, preferably one of the lab. staff, supervisor or colleague.

If you find yourself following a possibly unfamiliar procedure or performing an experiment and are unsure of what to do next or if something is going wrong, seek assistance from somebody rather than end up having an accident.

5) Personal belongings such as bags and coats should be stored in owner's office or under a bench, not left on the open floor. Books and paper in the labs should be kept to a minimum.

6) Soldering Irons must not be left on when not in use.

If any equipment breaks or is not working tell the responsible level 7 laboratory personnel (Prof. Weaver or Dr. Dobson) immediately.

Additional safety information covering the use of the Laser room is given in other documents either on the Safety Website or e-mailed to you by John Weaver or your supervisor.

A. Categories of Activity

1. N₂ gas cylinder for lab supply

Potential Risks and Control Measures

a) Asphyxiation:

The Nitrogen cylinder is secured via chain in room 713A Only certified technicians and lab personnel should move or hook-up the gas cylinders.

b) Toppling of cylinder:

The cylinders must always be secured to the wall by the chain to prevent it from falling over. Only certified technicians and lab personnel should move or hook-up the gas cylinders.

c) Minimizing COVID-19 Exposure Risk:

To fulfil social distancing guidelines, only one person should occupy 713A or handle gas cylinders at a time

2. Electrical Apparatuses

Potential Risks and Control Measures

a) Electric Shock and Fire:

All electrical equipment is PAT tested. Instrument housing will not be removed when the equipment is connected to the power supply. A grounding strap and grounding mat should be used when handling or modifying electrostatically sensitive electronics.

3. Chemical Safety

Potential Risks and Control Measures

a) Solvents:

Both Acetone and Isopropanol (IPA) are flammable solvents and thus should be kept away from heat sources. No more than one small squeeze bottle of solvent should be housed in any lab at the same time. These chemicals should always be decanted underneath a fume hood. Gloves are required when handling these chemicals.

b) Silver paint:

The silver paint is used to make electrical contacts. The solvent for the paste should not be ingested or inhaled. Gloves should be worn when handling the silver paint and the container should be firmly stoppered when not in use.

4. Other equipment

Batteries

Expired batteries will be replaced and disposed of in the electrical workshop. Do not throw away in trash.

Hand Tools**Potential Risks and Control Measures**

a) Injury:

Care will be taken when setting up and handling. Wear safety glasses when operating to prevent debris from entering the eye. Securely grip the tool in hand and ensure that object being drilled/polished is secured.

Heat Gun and Soldering Iron**Potential Risks and Control Measures**

a) Burns:

Never touch soldering iron tip or nozzle of heat gun when they are turned on. Assess whether to wear safety glasses when soldering. Do not point air stream of the heat gun at face or body. Let objects cool before touching.

b) Fire: Do not leave soldering iron and heat gun unattended when they are turned on. Turn off these devices when use is finished. Do not allow these tools to heat flammable objects or electrically powered devices.

B. Best Practice in the Laboratory

- Use safety equipment provided appropriately
- Use equipment in accordance with manufacturer instructions.
- Report faulty equipment immediately to Professor John Weaver or Dr. Phil Dobson and lab members.
- The main door to the laboratories should be kept shut if not in use, for fire safety, security, and noise reduction.
- Be aware of placement of fire extinguishers and fire alarms in the lab.
- Keep the lab tidy. Always return tools to their storage places, and do not leave workspaces messy.
- Lab members are responsible for ensuring that visitors follow appropriate safety protocols
- For out of hours working (evening after 5pm/weekend), sign the book at reception on the fourth floor.

C. Protocols to address COVID-19 exposure risks

- Follow general guidelines provided by the University, <https://www.gla.ac.uk/myglasgow/news/coronavirus/>
- Wear masks when working in close physical proximity in the laboratory or when in communal areas outside the laboratory. Not required when working at a safe physical distance.
- Wash hands before entering the lab and handling pieces of equipment / instrumentation / computers using soap and water or alcohol hand gel.

- Wipe down any surface that you would touch using disinfecting cloths before and after work. This includes benches, door and cupboard handles. Instrument controls to be wiped down with IPA wipes, not detergent or other cleaners.
- Due to the reduced provision of first aid support and building occupancy in general take extra care when performing work and plan who to contact in case of accidents. Make sure that at least one person knows where you are and contact them regularly.
- No more than two people should occupy lab 713 at one given time and they should maintain social distancing, i.e. one person operating the AFM and one on the workbench or optical table.
- No more than one person should occupy lab 713A or 713B at one given time.