

Health and Safety Information for High Frequency Electronics Laboratory Rankine Building Room 214a

Code of Practice and Risk Assessment

*Rankine Building, Electronic & Nanoscale Engineering, James Watt School of Engineering,
University of Glasgow*

Undertaken by Professor Edward Wasige

All Laboratory Users must read this document in full and sign off in section C

A. Code of Practice

The adoption and practice of good safety procedures is of paramount importance for both the health and safety of fellow workers and for the integrity of the fabric of the High Frequency Electronics laboratory

Laboratory Safety Management Responsibilities

- No research activities shall be carried out in the High Frequency Electronics laboratory Rankine room 214a without the permission of the lab guardian, **Professor Edward Wasige**.
- **Everyone** has a role in protecting the health and safety of other lab users and themselves and should be familiar with the **School Safety Manual**.
- **Academic supervisors** take full responsibility for the health and safety of the research group's activities and consequently must ensure that staff, students and visitors are familiar with the content of this **Code of Practice and Risk Assessments** along with the **School Safety Manual**.
- No work will be carried out unless it is covered by the **Risk Assessment section** (Section B) on this form. New activities should be discussed with the lab guardian and the risk assessment section should be updated accordingly.
- An electronic copy of the current Code of Practice and Risk Assessment shall be sent to the Lab Responsible Person and shared with the School Director of Safety. A printed copy of the current Code of Practice and Risk Assessment signed and dated (electronically or physically) by all current users (Section C) will be displayed in room 214a.
- All users must be aware of the general safety procedures highlighted in the School's Safety Manual and location of safety equipment. These are:
 1. Emergency telephone number **4444** (internal), **0141 330 4444** (external).
 2. **Emergency Exits** are in the lab and in the event a fire, use the main stairwells.
 3. A **Fire Extinguisher** is in the main stairwell on level 2
 4. **First Aid Kits** are available in the lab and in the janitor's office. All users should be aware of the building's qualified first aiders.
- Work outside normal office hours and at the weekends requires the permission of your supervisor and the Rankine building out of ours form located at the

reception lobby on level 4 must be signed, noting the name of the individual, location, time in and time out. Potentially dangerous operations must never be undertaken out with normal hours unless a second responsible person is present (please refer to School's safety Manual).

Best Laboratory Practice

- The lab must be kept tidy.
- No food or drinks must be consumed in the lab.
- Use equipment in accordance with the manufacturer's instructions.
- Avoid trailing cables to prevent trip hazards.
- Keep emergency exit and access areas clear of obstructions.
- The lab door should be kept shut when not in use for fire safety and security.
- Return all equipment to their allocated storage area after use.
- Report any faulty equipment immediately to the lab guardian **Professor Edward Wasige**.
- Faults within the lab such as lighting failure should be reported through the Maintenance Request portal found on the Estates and Commercial Services webpage.
- Dispose of packaging material in the main recycling bins.
- Good communication with other group members is essential.

Covid-19 Measures

- Guidance from the HSE, UK Government and Scottish Government to manage the risk due to Covid-19 pandemic must be applied to the High Frequency Electronic laboratory. These include physical social distancing, frequent hand washing and the use of face covering in enclosed shared space. Users should refer to the James Watt School of Engineering standard for Covid-19 and the code of practice.
- Due to physical distancing measures, only a maximum capacity of **2 persons** are allowed in the High Frequency Electronics lab.
- Demand to use the lab will be managed by the Lab Guardian liaising with the School's Safety Co-Ordinator. Collaboration between users, Supervisors and the Lab Guardian will be required to establish a working rota when necessary. Impact of the overall occupancy of the Rankine Building will be reviewed by the Technical Services Manager.
- Lab users must wash their hands frequently and wipe workstation surfaces, materials, and equipment before the start of their work and before leaving the lab. Also, all consumables such as probes, cables, etc. should be wiped after use before storage.
- Users should limit their movement to their designated work area as much as they can.
- Phased arrival and departure will be used depending on the occupancy level.
- Lab users who feel they exhibit Covid-19 symptoms or have been instructed to self-isolate should not use the lab and should inform their Supervisor and the Lab Guardian.

- Emergency support (First Aiders and Fire Area Officer) might be constrained due to Covid-19 restriction on building capacity. Task risk assessments need to be revised to include the above measures and to review with personnel through risk assessment, which work can be safely undertaken with reduced access to emergency support. A Covid-19 risk assessment template can be found here: https://www.gla.ac.uk/media/Media_723618_smxx.docx
- Further information: <https://www.gla.ac.uk/schools/engineering/covid-19protocols/>

B. Risk Assessment: Categories of Activities and Potential Hazards

1. Probe station

Potential Risks

Electrical Shock.
Pinch point hazard.

Control Measures

All electrical equipment attached to the probe station including microscope light source will be PAT tested and securely attached.
Pinch point hazard symbol is displayed at the pinch point location of the probe station to enable users avoid these locations.
All users will have undergone training in the use of the probe station.

2. Laser (1550 DFB laser benchtop source 1.5mW Class 1, fibre coupled)

Potential Risks

Electrical Shock

Control Measures

The laser and controllers will be PAT tested.
The laser is fibre coupled during normal use.
No interlock or safety glasses required for Class 1 laser.
All users will have undergone laser safety training.

3. Micromanipulators

Potential Risks

Falling objects hazard.

Control Measures

All micromanipulators have activatable magnetic base which allows secure mounting on the metallic probe station platen.

No open toed shoe or sandal should be worn in the lab.

4. Probes and Probe tips

Potential Risks

Sharps hazard

Control Measures

Probes are kept securely when not in use.

Users should consider their safety and the safety of others when mounting and unmounting probes to avoid contact with the sharp tips.

Adequate training has been provided to users on how to safely change probe tips when required.

5. All Electrical Equipment

Potential Risks

Electrical shock

Trip hazard

Control Measures

All equipment be PAT tested and always correctly connected to an appropriate earthed supply.

All equipment should be switched off when not in use.

Electrical equipment should be kept off the floor to prevent issues if the laboratory floods.

Users must ensure no cables leading to or from any equipment be allowed to trail potentially causing a trip hazard.

Anti-static wristbands have been provided and should be worn and properly connected when using certain equipment.

Commercial equipment is regularly calibrated by the manufacturer to ensure good working condition.

C. Laboratory Users

All users of laboratory 214a are required to read, date and sign this document before using the laboratory.

By signing below, I state that I have read and understood the code of practice, risk assessment and potential hazards in room 214a and will at all times undertake safe practice and abide by the rules in this document.

High Frequency Electronics Research Group Members

Name (Print)	Role	Signed	Date	Counter-signed	Date
Prof Edward Wasige	Lab Guardian, PI, Supervisor	EW	13.07.20		
Dr Abdullah Al-Khalidi	Lecturer, Deputy Lab Guardian				
Dr Jue Wang	PDRA				
Dr Sanna Taking	PDRA				
Dr Afesomah Ofiare	PDRA				
Dr Qusay Al-Taai	PDRA				
Dr Swagata Samanta	PDRA				
Dr Andrei Cornescu	PDRA				
Maira Elksne	PGR				
Razvan Morariu	PGR				
David Cimbri	PGR				
Aniket Dhongde	PGR				
Kaivan Karami	PGR				
Mohamad Aldirani	PGR				