Risk Assessment Summary Report/Print (landscape)

Reference	1918	**Description of Space or Activity/Task or Equipment**	Superconductivity and Magnetism Group - Crystal Growth Laboratory. Preparation of samples including single crystals for scientific studies.
Assessment Date	01/07/2022	**Publish To Portal**	Yes
Assessor Name	Martin Lees	**Risk Assessment Title**	P124 Crystal Growth Laboratory on Level 1.
Assessment Team Members		**Review Date**	20/06/2025
Role / Space / Project Reference		**Current Risk Level (1=Very Low, 2=Low, 3=Moderate, 4=High, 5=Very High)**	2
Department	Use the search function above or double click here for org chart -> Academic Faculties -> Faculty of Science, Engineering and Medicine -> Physics	**Final Risk Level (1=Very Low, 2=Low, 3=Moderate, 4=High, 5=Very High)**	2
Location Details	01-042-000-012A	**Not in use**	0
Risk Assessment Category	Space	**Additional Information**	Follow Room P124 Laboratory Rules (attached).
Date Record Created	04/07/2022		

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Hazard Type & Hazard Description	Who may be at Risk? & How May Person(s) Be Harmed	Existing Control Measures	L	S	R	Where current risk is M, H or VH, what additional Control Measures are required?	L	S	R
Electricity Electrocution, burns. Contact with live electrics. Electrical overload. Incorrect isolation. Unauthorized access to electrical systems / infrastructure	Staff. Students. Electrocution, burns.	Do not tamper with or attempt to modify apparatus. Do not use untested apparatus. Eliminate - No live working permitted. Eng - Cables and leads are appropriately insulated. Eng - Electrical cabinets are secured. Eng - Electrical equipment is suitably fused and earthed. Admin - All fixed wire electrical installations are tested as per regime. All portable electrical equipment are PAT tested. Admin - Extension reels fully unwound before use. Admin - Information, instruction, supervision & training. Admin - Signage used to raise awareness. Admin - University policy & procedure guidance followed.	Serious	Unlikely	Low		Serious	Unlikely	Low
NIR Electromagnetic Fields (EMF) R.F. power	Staff Student Burning through heating of biological material.	Do not approach the R.F. generator or cold boat system while it is in operation. Stay outside the lab.Eng/Admin - Access is restricted to authorised personnel. The lab will be locked to restrict access when the R.F. Furnace is in operation Admin - Awareness training provided. Admin - Information, instruction, supervision & training. Admin - Safe System of Work (SSoW) established and trained out. Eng - Environment has been adapted to reduce exposure.	Minor	Possible	Low		Minor	Possible	Low

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Work Environment Optical Furnaces and tetra arc furnace	Staff. Students Burns, Eye irritation from IR light. Injury from compressed gases and/or high pressures	Do not look directly into the light in the furnace, always observe image on the TV/monitor screen. Furnace doors cannot be opened without by-passing an interlock. Do not open the furnace doors when in use and wait until the furnace is cooled down before removing sample. For work with pressurized furnace, follow RA (attached) and consult user manual. Admin - Information, instruction, supervision & training.	Minor	Possible	Low		Minor	Possible	Low
Working at Height Fall	Staff. Students Falls.	Use kick step with care. Do not use stools. When using any steps do not to overreach and are to keep two feet on the steps at all times. Steps are visually inspected before each use. Admin - students and staff are provided with information, instruction and training through lab inductions.	Serious	Unlikely	Low		Serious	Unlikely	Low
Work Environment Dirty glassware and containers	Staff. Students. Poisoning, eye and skin irritation.	Dispose of all used chemicals and samples in approved manner, Clean and store dirty glassware immediately after use. Use any required PPE.	Minor	Unlikely	Very Low		Minor	Unlikely	Very Low
Work Environment Broken Glassware	Staff. Students. Cuts	Take care, dispose of sharps and broken glass in the approved receptacles provided.	Minor	Unlikely	Very Low		Minor	Unlikely	Very Low

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Work Environment Wet floors. Obstructed walkways. Closely spaced equipment Cables on the floor	Staff. Students Cleaners Slip and trips Hit by falling objects.	Dry floors if wet, be aware of potential hazard. Caution wet floor signage is used if floors are wet to warn those using the area of the potential hazard. Do not block walkways with equipment or personal belongings. Be aware. Walkways are not obstructed by trailing cables. Do not step on cables. Cable floor covers are to used where necessary. Take care when using stairs, and use the provided handrail. Do not place any items on mezzanine guard rail. Eng - Adequate lighting in place. Eng - Adequate ventilation in place. Eng - Cooling/heating equipment used. Admin - Information, instruction, supervision & training. Admin - Signage used to raise awareness. Admin - University policy & procedure guidance followed.	Minor	Unlikely	Very Low		Minor	Unlikely	Very Low
Manual Handling Storage desiccators under vacuum	Staff. Students. Glass/plastic cracks leading to implosion/explosion. Cuts to hands, face and eyes.	Do not tamper with desiccators. Vent and pump out with care. Beware of inhaling pumped gas. Tape desiccators. Turn off pump immediately after use.	Minor	Likely	Low		Minor	Likely	Low

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Substances All chemicals in use to prepare samples Samples after preparation..	Staff Students Contact or interaction with dangerous substances. Skin exposure to hazardous substance. Eye exposure to hazardous substance. Chemical burns. Poisoning. Organ damage. Inhalation of a hazardous substance or gas. Ignition, reaction, exposure to fumes etc. due to reactions or mixing	Read all relevant safety data sheets, University and Departmental Safety regulations and guidance, and pass any required safety tests. Minimise exposure, use appropriate PPE. Use appropriate PPE, minimise exposure. Admin - Awareness training provided. Admin - General ventilation used. Admin - Information, instruction, supervision & training. Admin - Refer to relevant COSHH Assessment (state). Admin - Signage used to raise awareness. Admin - Spill response/containment equipment in place. Admin - Storage in accordance with substance requirement. Admin - Substance awareness sheet available at point of use. Admin - University policy & procedure guidance followed. Admin - Wash facilities close by. PPE - Personal Protective Equipment (PPE) is issued and worn (gloves, goggles, masks, lab coats).	Serious	Possible	Low		Serious	Possible	Low

Risk Assessment Summary Report/Print (landscape)

Substances Acids, bases.	Staff Students Contact or interaction with dangerous substances. Skin exposure to hazardous substance. Eye exposure to hazardous substance. Chemical burns. Poisoning. Organ damage. Inhalation of a hazardous substance or gas. Ignition, reaction, exposure to fumes etc. due to reactions or mixing	Read all relevant safety data sheets, University and Departmental Safety regulations and guidance, and pass any required safety tests. Minimize exposure, use appropriate PPE. Use appropriate PPE, minimize exposure. Admin - Dispose of all used chemicals in approved manner. Admin - Awareness training provided. Admin - General ventilation used. Admin - Information, instruction, supervision & training. Admin - Refer to relevant COSHH Assessment (state). Admin - Signage used to raise awareness. Admin - Spill response/containment equipment in place. Admin - Storage in accordance with substance requirement. Admin - Substance awareness sheet available at point of use. Admin - University policy & procedure guidance followed. Admin - Wash facilities close by. PPE - Personal Protective Equipment (PPE) is issued and worn (gloves, goggles, masks, lab coats).	Serious	Unlikely	Low		Serious	Unlikely	Low

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Substances Solvents (ethanol, acetone, propanol). Pump oil, vacuum greases.	Staff Students Skin or eye irritation.	Read all relevant safety data sheets, University and Departmental Safety regulations and guidance, and pass any required safety tests. Minimize exposure, use appropriate PPE. Use appropriate PPE, minimize exposure. Admin - Awareness training provided. Admin - General ventilation used. Admin - Information, instruction, supervision & training. Admin - Refer to relevant COSHH Assessment (state). Admin - Signage used to raise awareness. Admin - Spill response/containment equipment in place. Admin - Storage in accordance with substance requirement. Admin - Substance awareness sheet available at point of use. Admin - University policy & procedure guidance followed. Admin - Wash facilities close by. PPE - Personal Protective Equipment (PPE) is issued and worn (gloves, goggles, masks, lab coats).	Minor	Unlikely	Very Low		Minor	Unlikely	Very Low
Work Environment Fire. Flammable substances including solvents, paper, flammable chemicals and samples	Staff. Students. Burns, fumes. Inhalation leading to poisoning, lung and or organ damage loss of consciousness, asphyxiation.	Store chemicals and solvents properly, use solvents sparingly, avoid sources of ignition, especially furnaces.	Serious	Unlikely	Low		Minor	Unlikely	Very Low

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Work Environment Fire. Furnaces. Furnace gases. Evaporation of chemicals from crucibles, evaporation of chemicals deposited in the furnace lining.	Staff. Students. Burns. Fumes. Inhalation leading to poisoning, lung and or organ damage loss of consciousness, asphyxiation.	Use furnaces with care. Wear appropriate PPE, do not touch hot surfaces, only open furnaces when cool (T < 50 °C) unless indicated by risk assessment. Clearly indicate on furnace user sheet the nature of samples and the treatment to be followed. Do not modify gas ventilation systems unless indicated by risk assessment.	Serious	Possible	Low		Minor	Possible	Low
Assessment Conclusion	All risks minimized.								