

## Risk Assessment Summary Report/Print (landscape)

<b>Reference</b>	1990	<b>Description of Space or Activity/Task or Equipment</b>	Laboratory used for Optical and Electron Paramagnetic Spectroscopies. The space holds 14 Spectrometer and equipment used in sample preparation and mounting.
<b>Assessment Date</b>	15/08/2022	<b>Publish To Portal</b>	No
<b>Assessor Name</b>	Ben Breeze	<b>Risk Assessment Title</b>	Millburn House G78.
<b>Assessment Team Members</b>	Ben Green	<b>Review Date</b>	15/08/2023
<b>Role / Space / Project Reference</b>		<b>Current Risk Level (1=Very Low, 2=Low, 3=Moderate, 4=High, 5=Very High)</b>	2
<b>Department</b>	Use the search function above or double click here for org chart -> Academic Faculties -> Faculty of Science, Engineering and Medicine -> Research Technology Platforms - RTPs -> Spectroscopy Research Technology Platform - RTP	<b>Final Risk Level (1=Very Low, 2=Low, 3=Moderate, 4=High, 5=Very High)</b>	2
<b>Location Details</b>	Central Campus-Millburn House-Ground Floor-G78 - (01.005.000.051) Spectroscopy RTP Laboratory Millburn House G78.	<b>Not in use</b>	0
<b>Risk Assessment Category</b>	Space	<b>Additional Information</b>	All Lab users must undertake an in person Induction to the lab with the facility manager or other authorised person. This includes Emergency exit Lab rules, waste procedures, additional emergency procedures which need to be followed, All emergency procedures are available in the Safety Folder in the lab. Over night and loan working is permitted in the Facility for Postgraduates and staff.
<b>Date Record Created</b>	15/08/2022		

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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
People & Wellbeing Use of PC work stations	Contractor Laboratory Worker Staff Student pain in necks, shoulders, backs, arms, wrists and hands as well as fatigue and eye strain	Admin - Information, instruction, supervision & training. Admin - University policy & procedure guidance followed. Eng/Admin - Reasonable adjustments made.	Minor	Unlikely	Very Low		Minor	Unlikely	Very Low
Work Environment Lone working.	Laboratory Worker Staff Student	Admin - Awareness training provided. Admin - Communication systems for lone working. Admin - Emergency response plan established and trained out. Admin - Lone worker alarms.	Serious	Unlikely	Low		Serious	Unlikely	Low
Work Environment Insufficient or poor lighting.	Contractor Laboratory Worker Staff Student eye strain,	Eng - Adequate lighting in place. Eng - Lighting level sufficient for work activity. Additional task lighting to be considered.	Minor	Unlikely	Very Low		Minor	Unlikely	Very Low
Manual Handling Pushing/pulling. Lifting/lowering/carrying objects or awkward loads.	laboratory Worker Staff Student Contractor Bruises Sprains Broken Bones.	Eliminate - Manual handling operations avoided. Substitute - Mechanical aids are used reducing the risk (hydraulic lifting table). Admin - Awareness and technique training provided. Admin - Operations fall within weight guidelines for men. Admin - Operations fall within weight guidelines for women. Admin - Specific risk assessment/survey completed. Admin - University policy & procedure guidance followed.	Serious	Unlikely	Low		Serious	Unlikely	Low

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<p>Equipment/Plant Manual movement causing impact (hydraulic trolley).</p>	<p>Laboratory Worker Staff Student Contractor Bruises Sprains Broken Bones.</p>	<p>Admin - Awareness training provided. Admin - Good levels of housekeeping maintained with clean as you go policy in place. Admin - Inspections conducted in accordance with site scheme. Admin - Maintenance operations are conducted by competent persons and covered by dynamic assessments. Admin - Signage used to raise awareness. Admin - Safe working load known and adhered to. Admin - Specific risk assessment/survey completed.</p>	<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>		<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>
<p>NIR Electromagnetic Fields (EMF) Exposure to electromagnetic fields (sensory/thermal effects) near to action levels (ALs) or exposure limit values (ELVs) Fields upto 21 Tesla are present in the adjacent space</p>	<p>Laboratory Worker Staff Student Contractor  Especially people with electronic medical devices ill-health (fainting) failure of electronic health devices leading to discomfort or rare cases death bruises from items caught in field</p>	<p>Eng/Admin - Access is restricted to authorised personnel. Admin - Safe System of Work (SSoW) established and trained out. Admin - Information, instruction, supervision &amp; training. Admin - Signage used to raise awareness. Admin - Specific risk assessment/survey completed.  All visitors and new starters are informed of the dangers to medical devices and are asked to confirm they do not have such devices before entering the space.  People are not permitted in the space with Pace makers.  Other medical devices most have an individual risk assessment conducted.</p>	<p>Major</p>	<p>Unlikely</p>	<p>Low</p>		<p>Major</p>	<p>Unlikely</p>	<p>Low</p>

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<p>Working at Height Falls from height. Objects falling from height.</p>	<p>Laboratory Worker Staff Student Contractor Bruises, Sprains, Broken Bones</p>	<p>Admin - Access equipment used in accordance with relevant guidance. Admin - Awareness training provided. Admin - Inspection schedule in place. Admin - University policy &amp; procedure guidance followed. Admin - Type of access equipment assessed for suitability before selection.</p>	Minor	Unlikely	Very Low		Minor	Unlikely	Very Low
<p>Hand Tools / Powered tools  Heat gun, hot plates, ovens</p>	<p>Laboratory Worker Staff Student Contractor  Burns</p>	<p>Trained users only, items to be switched off when not in use, signage used to indicate hot surfaces</p>	Serious	Unlikely	Low		Serious	Unlikely	Low
<p>NIR Class 1, Class 2 or Class 3R laser  Laser distraction, glare or flashblindness hazard, eye injury</p>	<p>Laboratory Worker Staff Student Contractor Laser strike to eyes or Skin</p>	<p>Systems are all class 1 under normal operation. when the systems are running as not class one they must be enclosed and clear signage in place to warn all lab users. PPE - Personal Protective Equipment (PPE) is issued and worn Protective Glasses (see local RA for detail)  Eng/Admin - Access is restricted to authorised personnel.  Eng - Specific guarding in place to reduce exposure during alignment even if at low power.</p>	Major	Unlikely	Low		Major	Unlikely	Low
<p>Equipment/Plant chilled water system, flooding of laboratories</p>	<p>Laboratory Worker Staff Student Contractor Flooding may damage equipment Flooding may create a slip hazard</p>	<p>Admin - Inspections conducted in accordance with site scheme. Admin - Statutory inspections are conducted as required and in accordance with site scheme. Local flood detection system in place with auto shut off.</p>	Minor	Possible	Low		Minor	Possible	Low

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Equipment/Plant Use of scalpels and needles, Glassware	Laboratory Worker Staff Student Contractor Cuts and puncture wounds	Take care, dispose of sharps and broken glass in the approved receptacles provided.	Serious	Unlikely	Low		Serious	Unlikely	Low
Equipment/Plant Explosion/implosion of cryostat/vacuum system Cuts from Shards of Glass Metal possibly to eyes	Laboratory Worker Staff Student Contractor Explosion/implosion of cryostat/vacuum system Cuts from Shards of Glass Metal possibly to eyes	Use of vacuum systems prohibited unless user is trained in the safe operation of the vacuum pumps.  Visual inspection of equipment before operation  Safety valves are to be used and checked regularly. Admin - Safe System of Work (SSoW ) established and trained out. Admin - Only trained, competent operators permitted to use the equipment.	Serious	Unlikely	Low		Serious	Unlikely	Low
Equipment/Plant Inert Gas used to create Elevated Temperatures.	Laboratory Worker Staff Student Contractor Elevated Temperature causing Burns	Admin - Signage used to raise awareness.  Eng - Fixed guarding is in place preventing access. Eng - Equipment fixed securely to the floor. Admin - Safe System of Work (SSoW ) established and trained out.	Minor	Likely	Low		Minor	Likely	Low

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<p>Substances Hazardous Chemicals</p>	<p>Laboratory Worker Staff Student Contractor Chemicals, skin contact Chemicals, inhalation Chemicals, eye hazards Chemicals, other hazards, failure to label samples</p>	<p>Handle all samples wearing disposable protective gloves. Wear appropriate PPE handling chemicals. Clear up all spillages and dispose of waste. Wash hands before leaving the laboratory. Handle all volatile and powdery samples in effective extraction system or in sealed containers. Train users in use of LEV systems. Routine inspection and maintenance of extraction system to meet statutory requirements. Eye protection must be worn when handling chemicals. All users of the preparation lab must wear PPE (e.g eye protectio or lab coat. Obtain as much information as possible about sample hazards from customers. Change submission form to accommodate safety information. Staff training to label clearl</p>	<p>Major</p>	<p>Unlikely</p>	<p>Low</p>		<p>Major</p>	<p>Unlikely</p>	<p>Low</p>
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<p>Substances Compressed gases, various hazards</p>	<p>Laboratory Worker Staff Student Contractor Risk of asphyxiation, risk of cylinder explosion during fire</p>	<p>All staff who handle compressed gases to be trained. Cylinders to be returned to outside building store when practical to do so. Cylinders inside building must be secured to immovable object. Storing on cylinder trolley is NOT acceptable. Regulators changed on 5-year  cycle. Safety devices to be checked as required by written scheme.  Safety devices vent outside in event of failure. Cylinder sizes minimised based upon usage. Oxygen sensors in rooms to avoid asphyxiation</p>	<p>Major</p>	<p>Unlikely</p>	<p>Low</p>		<p>Major</p>	<p>Unlikely</p>	<p>Low</p>
<p>Substances Cryogenics Inhalation or ingestion causing loss of consciousness, or asphyxiation</p>	<p>Laboratory Worker Staff Student Contractor Cryogenics Inhalation or ingestion causing asphyxiation</p>	<p>Admin - Safe System of Work (SSoW) established and trained out. Admin - General ventilation used. Room is fitted with Oxygen depletion warning sensors.</p>	<p>Major</p>	<p>Unlikely</p>	<p>Low</p>		<p>Major</p>	<p>Unlikely</p>	<p>Low</p>
<p>Substances Cryogenic liquids, burns, asphyxiation.</p>	<p>Laboratory Worker Staff Student Contractor Contact resulting in cryogenic Burns</p>	<p>PPE - Personal Protective Equipment (PPE) is issued and worn (specify). Gloves and Safety Spectacles. Admin - Information, instruction, supervision &amp; training. Admin - General ventilation used. Admin - University policy &amp; procedure guidance followed. Admin - Safe System of Work (SSoW) established and trained out. PPE - Personal Protective Equipment (PPE) is issued and worn (specify).</p>	<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>		<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>

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<p>NIR Electromagnetic Fields (EMF) Potential exposure to radiation (acute/chronic health effects) Continuous wave Microwave source X-Band (200 mW maximum at 9.8 Ghz &amp; Q Band 150 mW at 34GHz)</p>	<p>Laboratory Worker Staff Student Contractor Burns to Skin and/or eyes</p>	<p>Microwaves are contained with the system under normal operation.  Wave guides not to be tampered with. All alterations to wave guide to be conducted by trained staff/operators.  Microwave power should not be on if waveguide is open.  Visual inspection of Waveguides prior to operation</p>	<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>		<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>
<p>NIR Electromagnetic Fields (EMF) Exposure to electromagnetic fields (sensory/thermal effects) near to action levels (ALs) or exposure limit values (ELVs)</p>	<p>Laboratory Worker Staff Student Contractor Bruising, from objects caught in field ill-health (fainting) failure of electronic health devices</p>	<p>Eng/Admin - Access is restricted to authorised personnel. Admin - Safe System of Work (SSoW) established and trained out. Admin - Information, instruction, supervision &amp; training. Admin - Signage used to raise awareness. Admin - Specific risk assessment/survey completed.</p>	<p>Major</p>	<p>Unlikely</p>	<p>Low</p>		<p>Major</p>	<p>Unlikely</p>	<p>Low</p>
<p>Electricity Contact with live electrics.</p>	<p>Laboratory Worker Staff Student Contractor Electric Shock and/or burns</p>	<p>Admin - Portable Appliance Testing (PAT) conducted as per regime. Admin - Safe System of Work (SSoW) established and trained out.</p>	<p>Major</p>	<p>Unlikely</p>	<p>Low</p>		<p>Major</p>	<p>Unlikely</p>	<p>Low</p>
<p><b>Assessment Conclusion</b></p>	<p>Well established procedures have been in place for years, so the risk is low.</p>								