

Risk Assessment Summary Report/Print (landscape)



Reference	3497	Description of Space or Activity/Task or Equipment	The use of the Custom made Uniaxial Stress experiment coupled to existing optical spectrometers
Assessment Date	06/09/2024	Publish To Portal	No
Assessor Name	Ben Breeze	Risk Assessment Title	Low Temperature Stressed Raman/Photoluminescence/optical absorption
Assessment Team Members		Review Date	No Review Set
Role / Space / Project Reference		Current Risk Level (1=Very Low, 2=Low, 3=Moderate, 4=High, 5=Very High)	3
Department	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	Final Risk Level (1=Very Low, 2=Low, 3=Moderate, 4=High, 5=Very High)	3
Location Details	Central Campus-Millburn House-Ground Floor-G78 - (01.005.000.051) Spectroscopy RTP Laboratory Millburn House G78	Risk Assessment Number	0

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Risk Assessment Category	Activity/Task	Additional Information	<p>Users are responsible for having performed a risk assessment for their samples which must be logged at: https://warwick.ac.uk/research/rtp/spectroscopy/Safety/Sample When booking all users will provide a reference to the risk assessment for the sample used. All Users must complete training course before operating the spectrometer. All users will require retraining if they have not operated the system for 18 months. These experiment is designed to be used in conjunction with other spectrometer (FT-IR, Raman, PL) and as such those risk assessments should also be followed prior to use. This document only deals with the additional hazards from the addition of the Uniaxial stress apparatus</p> <p>Document History Version Date Reviewer Comments 1 29/11/2017 Ben Breeze Re reviewed when Equipment was brought under RTP Control 2 11/02/19 Ben Breeze Scheduled Review. No changes 3 16/11/21 Ben Breeze Format updated, minor changes to user groups and description , also added optical absorption spectrometers</p>
Date Record Created	06/09/2024		

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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
Equipment/Plant Ejection of materials or parts (Struck by) after failure of pressure vessel	Laboratory Worker Staff Student Cuts from shard of glass/metal	Eng/Admin - Access is restricted to authorised personnel. Admin - Good levels of housekeeping maintained with clean as you go policy in place. Admin - Information, instruction, supervision & training. Eng/Admin - Isolators have been fitted for safe isolation.	Serious	Unlikely	Low		Serious	Unlikely	Low
Substances Inhalation exposure to hazardous substance. Compressed Gas	Laboratory Worker Staff Student Asphyxiation	Substitute - low volumes of gases used Eng/Admin - Oxygen depletion monits in place Admin - Awareness training provided. Admin - Information, instruction, supervision & training. Admin - General ventilation used. Admin - Safe System of Work (SSoW) established and trained out. Admin - University policy & procedure guidance followed.	Major	Unlikely	Low		Major	Unlikely	Low
Substances Cryogenics Contact with substances stored at hazardous temperature. Contact or interaction with dangerous substances. Eye exposure to hazardous substance. Skin exposure to hazardous substance.	Laboratory Worker Staff Student Contact resulting in cryogenic Burns	Admin - Awareness training provided. Admin - Information, instruction, supervision & training. Admin - General ventilation used. Admin - Safe System of Work (SSoW) established and trained out. Admin - Storage in accordance with substance requirement. Admin - University policy & procedure guidance followed. PPE - Personal Protective Equipment (PPE) is issued and worn (specify).	Major	Unlikely	Low		Major	Unlikely	Low

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<p>Substances Cryogenics</p> <p>Inhalation exposure to hazardous substance. Contact with substances stored at hazardous temperature. Inhalation exposure to hazardous substance.</p>	<p>Laboratory Worker Staff Student</p> <p>Inhalation or ingestion causing loss of consciousness, and or Death</p>	<p>Eng - oxygen depletion sensors throughout lab Admin - Awareness training provided. Admin - Information, instruction, supervision & training. Admin - General ventilation used. Admin - Safe System of Work (SSoW) established and trained out. Admin - Storage in accordance with substance requirement. Admin - University policy & procedure guidance followed. PPE - Personal Protective Equipment (PPE) is issued and worn (Gloves Goggles).</p>	<p>Extreme</p>	<p>Unlikely</p>	<p>Moderate</p>		<p>Extreme</p>	<p>Unlikely</p>	<p>Moderate</p>
<p>Equipment/Plant broken glassware Contact with sharp blade (cuts).</p>	<p>Laboratory Worker Staff Student</p> <p>Cuts from broken quartz</p>	<p>Admin - Defective equipment taken out of use. Admin - Information, instruction, supervision & training. PPE - Personal Protective Equipment (PPE) is issued and worn (gloves goggles). Take care, dispose of sharps and broken glass in the approved receptacles provided.</p>	<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>		<p>Minor</p>	<p>Possible</p>	<p>Low</p>

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<p>NIR Class 3B/4 laser or Class 1 laser product</p> <p>Laser strike (burns, loss of sight)</p>	<p>Laboratory Worker Staff Student</p> <p>Light effecting eyes/skin</p>	<p>Admin - Refer to more detailed risk assessment for Class 3B/4 lasers or for Class 1 laser products. For all Raman/ PL spectrometers Interlocks are overridden so the system is no longer Class one. Eng - With the Probe in place it is impossible to get your eye in the path of laser beam. Eng - The beam is also very divergent after the focal point, See attached table for safe nominal optical hazard Distances for the different Excitation wavelengths. Admin - During setup up, the Lasers must not be turned on until the probe is in place. Eng- All reflective surfaces should be removed from the enclosure</p> <p>Admin = After the probe is in place laser must be kept below 1mW using the built in ND filters. Admin During normal operation a fabric cover will be placed over the enclosure to block all light from escaping. Admin -Laser signage in place to alert other lab users the experiment should not be left unattended with the laser in operation.</p>	<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>		<p>Major</p>	<p>Unlikely</p>	<p>Low</p>
<p>NIR Artificial Optical Radiation - Ultraviolet</p> <p>Potential exposure to Non-ionising radiation (UV - burns/arc eye/cataracts)</p>	<p>Laboratory Worker Staff Student</p> <p>Light affecting eye</p>	<p>Laboratory Worker Staff Student</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 Artificial Optical Radiation - Infra red Potential exposure to Non-ionising radiation (Infrared - heat/cataracts)</p>	<p>Laboratory Worker Staff Student Light affecting eye</p>	<p>Eng- Light power is low Eng - Engineered measures – remote controls, screening, interlocks, clamps to hold material. Admin - Information, instruction, supervision & training. Admin - Safe System of Work (SSoW) established and trained out.</p>	<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>		<p>Serious</p>	<p>Unlikely</p>	<p>Low</p>
<p>Electricity Contact with live electrics.</p>	<p>Laboratory Worker Staff Student Electric Shock and/or burns</p>	<p>Eng - Cables and leads are appropriately insulated. Eng - Fixed guarding is in place preventing access. Admin - Awareness training provided. Admin - Portable Appliance Testing (PAT) conducted as per regime. Admin - Safe System of Work (SSoW) established and trained out. Admin - Visual checks completed before use.</p>	<p>Major</p>	<p>Unlikely</p>	<p>Low</p>		<p>Major</p>	<p>Unlikely</p>	<p>Low</p>
<p>Assessment Conclusion</p>	<p>Long Standing experiment safe operation</p>								