THE UNIVERSITY OF WARWICK

Title of Assessment	Matthew Pearce Risk Assessment	Date of assessment	07/10/2019
		Date for review	Continuous
Department	Physics		
Descriptions of Activities	Risk assessment for the work related to the project of Matthew Pearce		
Name of those working to this assessment	Matthew Pearce	Any others who may be affected by this assessment	Other laboratory users.
Assessment carried out by	Matthew Pearce		

Additional information	

Foreseeable Significant Hazard	Existing control measures	Inherent Risk	Additional control measures	By whom & when	Controlled Risk Level
Use of cryogens - filling Nitrogen dewar. Cold burns/frostbite.	Training received before first use. Use all appropriate PPE (e.g. gloves). Avoid contact with cold gas, liquids or cold surfaces.	Low		User	Low
Use of cryogens - cryogen transfer to equipment (e.g. PPMS, VSM). Cold burns/frostbite.	Training received before first use. Use all appropriate PPE (e.g. gloves). Avoid contact with cold gas, liquids or cold surfaces.	Low		User	Low
Use of cryogens - filling Nitrogen dewar. Oxygen depletion/asphyxiation.	Filling carried out outside if possible. If not, fill in a well-ventilated space in the presence of an oxygen detector.	Low		User	Low
Use of cryogens - cryogen transfer to equipment (e.g. PPMS, VSM). Oxygen depletion/asphyxiation.	Rooms are well ventilated with oxygen detectors where appropriate.	Low		User	Low
High magnetic fields - danger to those with metal implants/pacemakers	Warning signs displayed on doors.	Low	Where possible and appropriate, warn others entering the room if the magnet is charged.	User	Low

High magnetic fields - hit by a magnetisable object	Do not take magnetisable objects near magnet when magnet is charged. Ensure magnetisable objects cleared from immediate vicinity of magnet prior to charging magnet.	Low		User and those near equipment when in use	Low
Using sharp laboratory tools (tweezers, razor blades etc.)	Work carefully on a clear workbench. Cover sharp instruments when not in use and store clearly. Dispose of in sharps bins where appropriate.	Low		User and those with access to work space	Low
Handling samples - poisoning, eye or skin irritation or other ill effects.	Use appropriate PPE. Minimise exposure. Do not ingest - wash hands after handling and do not keep food or drinks close to samples, especially whilst handling. No food or drinks stored in sample fridges. Read and file away safety sheet which comes with chemicals when purchased. Store appropriately.	Low		User and those with access to workspace	Low
Laboratory chemicals - poisoning/skin or eye irritation/burns.	Use appropriate PPE. Minimise exposure and where necessary avoid direct contact. Do not ingest - wash hands after handling and do not keep food or drinks close to chemicals, especially whilst handling. Read appropriate COSHH information and act accordingly.	Low		User and those with access to workspace	Low
Moveable platform - falls.	Ensure brake is in position during use. Ensure platform is dry and not slippery before use. Never over-reach over the edge.	Low		User	Low
Hot air gun - fire, burns.	Use with care and as trained. Point away from people and flammable objects.	Low		User	Low
Pellet press in P155 – risk of trapping fingers and overpumping causing dangerous levels of pressure.	Trained before first use. Use all appropriate PPE. Close hydraulic press door during pressing. Ensure only safe levels of pressure are applied. Various chemicals are stored in P155 – wear a lab coat and safety goggles when in the room.	Low		User	Low

Manual hydraulic ram – catching body parts between surfaces under load.	Ram fitted with surrounding guard plates – must be in place when ram under load. Hands etc. to be kept out of enclosure whilst loading. Specifically trained and authorised users only.	Low	Only trained users to be present in the lab during operations where the press is under load.	Users and those in lab	Low
Soldering - burns.	Ensure to use a suitable holster to hold the iron in place when it is not in use. Always make a conscious effort to look at what you are doing with the iron to avoid accidentally touching the wrong end. Allow soldered components to cool before touching.	Low		User	Low
Soldering - fumes may be harmful in high concentrations or over long periods of exposure.	Solder in a well ventilated area. Consider using PPE if suitable. Do not look over the work too closely to avoid inhaling fumes.	Low		User	Low
Soldering - solid solder - can get onto and into skin and be harmful.	No food or drink near soldering station. Always wash hands after soldering and before consuming food or drink.	Low	Avoid using lead solder wherever possible.	User	Very low
Soldering - electrical faults - the cable joining the iron to the station is susceptible to strain/heat from the iron etc.	Do not use soldering irons with any obvious damage. Keep soldering iron away from cable.	Very low		User	Very low
Use of instruments involving x-ray generation (ionising radiation source) – possible radiation burns or cellular	Relevant training completed and instruction on proper use of instrument given before use. X-ray sources are located in designated x-ray areas and include interlocking doors and shields to prevent radiation exposure to local area coupled with warning systems to indicate that the source is in use.	Low		User	Low

damage.					
Laser exposure – ruby spectrometer (normal use)	Laser equipment only to be used by trained and authorised personnel. Full enclosure fitted to prevent accidental exposure to high power beam sections. Output from enclosure (end of fibre optic) is 1 mW, 532 nm visible CW. Overall system therefore does not exceed power limit of laser class 2 – no further safety measures other than appropriate signage are required. Dedicated risk assessment and safe system of work are provided separately and kept with the laser. All users must review. Note that opening the bolted enclosure and defeating the interlocks renders the system a class 3b laser hazard, as advised by signage. This is necessary for realigning the system and this operation requires separate specific training, risk assessment and authorisation.	Low	Clear signage informs personnel of the laser class and hazards. Avoid staring into the beam output from the optical fibre.	Users and those in lab	Low
Diamond anvil pressure cells – mechanical failures under load	Safety goggles are to be worn when loading (loading refers to increasing the stored pressure via an external hydraulic press). Only specifically trained and authorised users are permitted to perform this operation. The stored energy in a diamond anvil type cell is extremely low due to the small pressure fluid volume.	Very low	Only trained users to be present in the lab during loading operations.	User and (reduced risk) personnel in lab during operation.	Very low
Piston cylinder pressure cells – mechanical failure under load	Safety goggles are to be worn when handling. Face guard is to be worn during loading. Cells under load are to be kept in strong, secure, well-labelled boxes when not in use. Avoid aiming the cylindrical axis of the cell at peoples' faces at all times when under load. Specifically trained and authorised users only.	Low	Only trained users to be present in the lab during loading operations. Two users must be present for loading operations.	Users and personnel in lab.	Low

Work should not be carried out until the assessment is completed to a suitable & sufficient level and all required control measures are in place.

Risk Assessment Form

Is assessment suitable and sufficient Yes

Any further actions required to allow work to commence	N/A

Approved By	Paul Goddard
Date	07/10/2019

Position	Supervisor

Please print a copy, sign it and keep for your records

	Severity of injury				
Likelihood	**Superficial**	**Minor**	**Serious**	**Major**	**Extreme**
Unlikely	**Very low**	**Very low**	**Low**	**Low**	**Moderate**
Possible	**Very low**	**Low**	**Low**	**Moderate**	**High**
Likely	**Low**	**Low**	**Moderate**	**High**	**Very high**
Very likely	**Low**	**Moderate**	**High**	**Very high**	**Very high**
Extremely likely	**Moderate**	**High**	**Very high**	**Very high**	**Very high**

See 'Matrix for risk evaluation' for further guidance.

Overall Risk Rating (highest level found)	