Safe@RMIT

RMIT University

RISK ASSESSMENT: EQUIPMENT & ACTIVITY: SEH-RA-005

RA No.:		Date:	1/04/2022	Version No.:	
Project Title:		Application of Technology in Wearables			

SECTION 1: GENERAL INFORMATION

Campus location: Melbourne	Bldg. / level / room	College: Engineering	School: School of Engineering
Supervisor / Position: Dr Katrina Neville	Persons undertaking the activity: Alec Harbis, Ahad Abdul, and Oliver Patterson		Independent Assessor / Position:

Equipment *(manufacturers and product name/model)* or details of Activity:	Add image details - 1 Copy image here [by using Insert/picture/select picture/insert] (If you cannot see the image once copied, Right click on the image, go to wrap text, and select 'in front of text')	Add image details - 2 Copy image here [by using Insert/select picture/insert] (If you cannot see the image once copied, Right click on the image, go to wrap text, and select 'in front of text')

RMIT asset number	
Serial number	

Description of main work /activity:	List steps in the activity/process:

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Are there any licensing/permit requirements? ☐ Yes Provide details: ☒ No	**Does the equipment contain Hazardous materials i.e., asbestos?** ☐ Yes Provide details: ☒ No	**Is a current SWI and/or manual available?** ☐ Yes Provide details: ☒ No
Are special services required? ☐ Power (e.g., > 10 Amp, 3 Phase) ☐ Water ☐ Compressed Air ☐ Reticulated gases ☐ Other Provide details:	**Where will the equipment be located?** Bldg./level/room: ☐ Other Provide details:	

End of Life: Equipment disposal requirements/plan:

Additional requirements for the use of this equipment		**Details of the additional requirements**
☐ Specialised Training ☐ Documented Safe Work Instruction	☐ Restricted users ☐ Recording of transactions ☐ Other (provide details)	

Additional First Aid and emergency requirements	**Details of additional First Aid**
☐ Specialised Spill kits ☐ Special first aid requirements ☐ Specialised PPE (e.g., respirator and type of filter) ☐ Other (provide details)	

SECTION 2. RISK SCORE MATRIX

FACTOR	CLASSIFICATION	RATING	RISK SCORE	DEFINITION AND REQUIRED ACTIONS
CONSEQUENCES Most probable result of the potential accident.	**Consequence:**	**C**	>500	**Extreme Risk** This activity / process must not be implemented. An alternative must be found.
	a. Catastrophe; numerous fatalities; major disruption of activities	100		
	b. Disaster; multiple fatalities	50		
	c. Profoundly serious; fatality	25		
	d. Serious; permanent disability	15		
	e. Moderate; serious but non-permanent disability	5	300 – 499	**High Risk** This activity / process must not be implemented without management approval.
	f. Minor: minor cuts, bruises, burns (first aid treatment required)	1		
EXPOSURE The frequency of exposure to the hazard.	**Exposure:**	**E**		
	a. Continuously (or many times daily)	10		
	b. Frequently (approximately once daily)	6	100 – 299	**Substantial Risk** Unless there is no alternative this activity should not be implemented. Requires management approval.
	c. Occasionally (from once per week to once per month)	3		
	d. Infrequent (from once per month to once per year)	2		
	e. Rarely (once every 2 - 4 years)	1		
	f. Very rarely (once every 5 years or more)	0.5	50 - 99	**Medium Risk** Hazard must be examined against current standards to determine whether adequately controlled. Requires management oversight.
PROBABILITY Likelihood that the consequence will occur once the individual is exposed to the hazard.	**Probability:**	**P**		
	a. Almost certain or expected result	10		
	b. Quite possible / not unusual	6		
	c. Would be an unusual sequence or coincidence	3	10 - 49	**Low Risk** Manage by routine procedures. Caution must be observed.
	d. Would be a remotely possible coincidence	1		
	e. Has never happened after many years of exposure, but is conceivable	0.5		
	f. Practically impossible sequence (has never happened)	0.1		

RISK SCORE CALCULATIONS:	*CONSEQUENCE (C)*	X	*EXPOSURE (E)*	X	*PROBABILITY (P)*	=	*RISK SCORE*

SECTION 3: RISK ASSESSMENT FORMS	
List of SEH Risk Assessment forms:	
Form no./reference	**Form name**
SEH-RA-001	SEH Risk Assessment Flowchart
SEH-RA-002	SEH Risk Assessment: Instruction and Guideline: SEH-RA-002
SEH-RA-003	SEH Risk Assessment: Chemical Purchase (Storage and handling requirements)
SEH-RA-004	SEH Risk Assessment: Chemical Reaction
SEH-RA-005	SEH Risk Assessment: Equipment & Activity (including Gases, Mists/Dust, Temperature, Manual handling (including Slips/Trips), Mechanical, Traffic, Falls etc.)
SEH-RA-006	SEH Risk Assessment: Biohazards
SEH-RA-007	SEH Risk Assessment: Radiation: Non-Ionising (Radiation policy)
SEH-RA-008	SEH Risk Assessment: Radiation: Ionising (Radiation policy)
SEH-RA-009	SEH Risk Assessment: Laser
SEH-RA-010	SEH Risk Assessment: Hazardous Manual handling
SEH-RA-011	SEH Risk Assessment: Noise: contact SEH Senior Advisor Health & Safety to arrange
SEH Animal Facility RA-SOP 32	SEH Animal Facility: Working with Animals
Human Ethics link	Working with Human subjects (http://www1.rmit.edu.au/staff/research/human-research-ethics)
Working in Confined Space	Refer to SEH OHS Team: SEH Risk Assessment: Working in Confined Space
Other risks	Refer to SEH OHS Team: Any other risks/hazards not listed

SECTION 4: IDENTIFY THE HAZARDS

(check 'Yes' or 'No' for all potential hazards)		Yes	No
1	**HAZARDOUS SUBSTANCES / DANGEROUS GOODS**		
1.1	Are any chemicals used in the Activity classified as Hazardous Substances (HS) or Dangerous Goods (DG)? If yes, individually list each HS/DG in Section 5 and complete the Control details / Risk Score for each **Note: If the Activity consists primarily of chemical reactions, complete a Chemical Reaction Risk Assessment form: SEH-RA-003**	☐	☒
2	**GASES**		
2.1	Are any gas cylinders used in the Activity? If yes, individually list each type of gas in Section 5 (specify Cylinder size) and complete the Control details / Risk Score for each	☐	☒
2.2	Are reticulated gases used in the Activity? If yes, individually list each type of gas in Section 5 and complete the Control details / Risk Score for each	☐	☒
2.3	Is there the potential for the gas to create oxygen depleted / enriched atmosphere in the event of a leak?	☐	☒
3	**MISTS, FUMES, DUSTS**		
3.1	Does the process generate mists, fumes, or hazardous dusts?	☐	☒
3.2	Can dust lead to explosive conditions (Refer to MSDS/SDS)	☐	☒
4	**SPILLS / CONTAINMENT**		
4.1	Are large volumes (>20L) of liquids involved? Note: If yes, you need to ensure there is adequate bunding and appropriate spill kits available for the type and quantity of liquids involved.	☐	☒
5	**BIOHAZARDS**		
5.1	Does the Activity involve working with Infectious materials, quarantine materials or Genetically Modified Organisms (GMO)? *Note: All work with GMO material must have prior approval from the RMIT Biosafety Committee (IBC) - Please see link below.* *http://www1.rmit.edu.au/browse/Staff%2FResearch%2FResearch%20integrity%20and%20governance%2FGene%20modification/* **Complete a Biohazard Risk Assessment form: SEH-RA-005**	☐	☒
6	**HIGH or LOW TEMPERATURES**		
6.1	Does the Activity involve temperatures above 40^{o}C or exposure to naked flames?	☐	☒
6.2	Does the Activity involve temperatures below 10^{o}C?	☐	☒

7	**RADIATION**		
7.1	**Ionising Radiation:** Are X-Rays, Alpha, Beta, Gamma, or other energetic sub-atomic particles being used in this Activity? Check equipment operation manuals and refer to Radiation Safety Officer (RSO). **Complete a Radiation Safety Risk Assessment form: SEH-RA006**	☐	☒
7.2	**Non-Ionising Radiation** - Are Radio waves, microwave, infrared, visible or ultraviolet used at harmful levels? Check equipment operation manuals and refer to Radiation Safety Officer (RSO). **Complete a Radiation Safety Risk Assessment form: SEH-RA006**	☐	☒
8	**LASERS**		
8.1	Does the Activity involve a laser product? Check equipment operation manuals and refer to Laser Safety Officer (LSO). **Complete a Laser Safety Risk Assessment form: SEH-RA-007**	☐	☒
9	**PRESSURE or VACUUM**		
9.1	Does the Activity involve applying pressure or vacuum to cylinders, vessels, or tubing?	☐	☒
9.2	Does the Activity involve high pressure fluids e.g., Hydraulic hoses?	☐	☒
10	**ELECTRICAL**		
10.1	Is the equipment powered by greater than 50V DC or AC (single or 3 phase mains power)?	☐	☒
10.2	When moving or operating equipment can part of the equipment contact live electrical power supplies, inside or outside buildings?	☐	☒
10.3	Check for overloading of electrical circuits (i.e., piggy backed power boards).	☐	☒
10.4	Perform a visual inspection for any hazardous wiring. Are there any damaged or poorly maintained electrical leads, switches, and cables?	☐	☒
10.5	Is a method for emergency shutdown required?	☐	☒
10.6	Is an emergency stop fitted and in working order?	☐	☒
10.7	Water near electrical equipment? i.e., sinks near power outlets or rigs with heaters in water	☐	☒
10.8	Have all portable electrical mains powered electrical equipment been correctly Tested and Tagged? (i.e., any electrical item which is plugged into an electrical outlet – GPO or 3 phase connection)	☐	☒
11	**MANUAL HANDLING / SLIPS / TRIPS** - Can anyone using equipment or performing a task be injured due to: `		
11.1	Poor housekeeping e.g., obstacles or waste being placed in a workspace?	☐	☒
11.2	Uneven or slippery work surfaces?	☐	☒
11.3	Are there any steep walking surfaces or sharp edges?	☐	☒
11.4	Is any work required to be performed at an elevated height?	☐	☒
11.5	Lack of guard rails or other suitable edge protection where there is a sudden change in height or depth (e.g., near pits)?	☐	☒
11.6	Unprotected holes or gaps?	☐	☒
11.7	Is there a possibility of the collapse of any supporting structure?	☐	☒

11.8	Repetitive or sustained postures, movement, or forces?	☐	☒
11.9	Lifting and moving around of heavy items during testing or construction	☐	☒
11.10	Poor ergonomic design of equipment when operating e.g., process involves awkward postures?	☐	☒
Note: If Residual Risk Score for Manual Handling hazards remains >50 after considering current controls, request HR to undertake further assessment **(Reference: Manual Handling Risk Assessment Form SEH-RA-008)**			
12	**MECHANICAL** - Can any person or body part be physically injured by:		
12.1	Hair, clothing, gloves, jewelry, limbs, rags, or other materials become entangled with moving parts.	☐	☒
12.2	Being trapped or sheared between parts of the equipment or between the equipment and structures/work pieces?	☐	☒
12.3	Material falling off equipment or work pieces being ejected.	☐	☒
12.4	Possible uncontrolled or unexpected movement due to excessive vibration or from a part seizing up?	☐	☒
12.5	Mobility of wheeled equipment (e.g., uncontrolled vehicle)?	☐	☒
12.6	Emergency stopping of moving equipment or a process.	☐	☒
12.7	The equipment tipping or rolling over? For rotating parts could they be unbalanced?	☐	☒
12.8	Parts of the equipment/object collapsing in operation?	☐	☒
12.9	Being thrown off equipment or working under equipment or structures?	☐	☒
12.10	Failure of a Test specimen or Rig causing objects to become projectiles? Encountering sharp or flying objects?	☐	☒
12.11	The equipment, parts, or work pieces disintegrating?	☐	☒
12.12	Being burned by friction due to contact with moving parts or surfaces, or material produced by a process?	☐	☒
13	**NOISE**		
13.1	Is the process likely to produce noise at a hazardous (i.e., above 80dB) or uncomfortable level? If yes, request HR to assess the noise levels to determine the level of risk and recommend appropriate controls. **(Reference: Noise Risk Assessment Form: SEH-RA005).**	☐	☒
14	**TRAFFIC**		
14.1	Does the Activity involve vehicles (e.g., cars, trucks, forklifts)?	☐	☒
14.2	Does the Activity involve aircraft (e.g., UAV's)?	☐	☒
14.3	Does the Activity involve interaction between people and traffic (e.g., uncontrolled vehicle)?		
15	**FALLS - Working from heights:** Do any steps in the Activity involve either:		
15.1	Using a ladder?	☐	☒
15.2	Working at heights greater than 2m from the floor?	☐	☒
15.3	Working in a location where you could fall more than 2m?	☐	☒

16	**WORKING IN ISOLATION**		
16.1	Does the Activity involve working alone outside normal working or in isolated areas (e.g., remote building away from other users, rooftop, or basement) If yes, describe how the work will be safely monitored e.g., Buddy system, Man-down monitor in the Risk Control Plan *Note: You will need to obtain written permission from both your supervisor and area manager prior to undertaking work in isolation If working on site; you need to inform RMIT Security at the beginning and end of the work shift.* For Field Trips use the current school Risk Assessment for Field Trips	☐	☒
17	**LOCATION**		
17.1	Does the Activity involve any work at non-RMIT facility?	☒	☐
17.2	Will the Activity be conducted in an area accessible by the public?	☐	☒
17.3	Will the Activity involve any non-RMIT personnel?	☐	☒
18	**OTHER**		
18.1	Does the Activity involve any other hazards not listed above? If yes, individually list each hazard in Risk Control Plan and complete the control details / Risk Score for each	☐	☒

SECTION 5: RISK ASSESSMENT

No. *(Repeat nos. from section 4)*	Describe the Hazard *(List the hazards identified that require control)*	Identify the Risk / Outcome *(Injury, illness e.g., crushing)*	Risk Score *Determine C, E & P* *(Refer to score matrix sect 2)*			
			C	E	P	Score
17.1	Working from home	Risk of unknown factors	1	2	3	6

SECTION 6: RISK CONTROL PLAN

For each hazard identified:

- Specify the Engineering reduction in risk and provide details (i.e., isolation, engineering controls).
- Specify the Administration reduction in risk and provide details (i.e., changing procedures, training, supervision, providing information, induction).
- Specify the type and use of PPE for reduction in risk (detail glove material, type of safety eye wear, type of inhalation protection and filter types where applicable etc.).
- Determine the **residual risk score** by referencing the risk score matrix in Section 2.
- Specify who is responsible for completing all controls, by when and date when completed.

Hierarchy of Control (Control Type)

E = Elimination — Most Effective

S = Substitution

En = Engineering

A = Administration/ Training — Least Effective

PPE = Personal Protective equipment

Hazard	Hierarchy of Controls				Residual Risk Score *Determine C, E & P with additional controls in place*				
No. *(Repeat nos. from section 5)*	**1. Elimination/ Substitution:** *Can the hazard be eliminated or substituted?*	**2.Risk reduction by Engineering controls:** *Can the risk be reduced by Isolation, Engineering controls (re-designing plant or equipment)?*	**3. Risk reduction by Administration controls:** *Reduction in the level of risk posed by the hazard by changing operating procedures, training, supervision, providing information, induction etc.*	**4. Risk reduction by PPE controls:** *Specify type and use: i.e., glove type and material, safety goggles/glasses/face shield, inhalation protection (including filter type), safety shoes etc.* ***Note: PPE is only to be used in addition to controls 1-3.***	**C**	**E**	**P**	**Score**	**Responsibility, Timeline, Date completed**
Add lines as necessary and ensure each risk/hazard and control is entered on a separate line, using reference numbers from Section 4									
17.1	No	No	No	No	1	2	3	6	

If the Residual Risk score for any hazard listed above is greater than 50, then the Discipline Leader must sign Section 8 before the Activity can be undertaken.

SECTION 7: CONSULTATION

Consult with technical staff or equivalent (e.g., Research Officer) in the local area to ensure all RISKS AND HAZARDS are identified in the risk assessment process

Position	Name	Comments (optional)
Technical Officer (or equivalent)		

SECTION 8: APPROVAL

Position	Name	Signature	Date
Supervisor / Position: Supervisor	Dr Katrina Neville		
Person undertaking activity / Position:	Alec Harbis		Click here to enter a date.
Person undertaking activity / Position:	Ahad Abdul		
Person undertaking activity / Position:	Oliver Patterson		
Independent assessor / Position:			Click here to enter a date.
Discipline Leader ***(where residual risk score for any risk/hazard in Sect 6 is 50 or above)***			Click here to enter a date.

SECTION 9: REVIEW

Risk assessment should be reviewed if any changes to the activity are made or otherwise every 3 years from date of approval (latest version number required).

Position	Name	Signature	Date
			Click here to enter a date.
			Click here to enter a date.
			Click here to enter a date.
			Click here to enter a date.
			Click here to enter a date.

COMMENTS/ADDENDUM:

Click here to enter a date.
Add references for all associated Risk Assessments and Safe Work Instructions