

EXPERIENCE USER TRAINING AND EVALUATION FORM (Vitrobot)

Prof/Dr/Mr./Mrs./Ms.* _____ Position: <input type="checkbox"/> MPhil student/ <input type="checkbox"/> PhD student / <input type="checkbox"/> Staff / <input type="checkbox"/> Faculty member	
Student / Staff Number: _____	
Training date: ____ / ____ / _____	Evaluation Date: ____ / ____ / _____ By: _____

Evaluation Items		Trained	Pass/Fail
Part A (General Policy and Safety)			
General Policy	The Vitrobot sessions are from Monday to Sunday 10:00-12:00, 13:30-15:30, 15:30-17:30, 18:00-20:00 and 20:00-22:00. Avoid booking the same Vitrobot with another user unless both are booked by other users.	<input type="checkbox"/>	
	(Mon-Fri) It is highly recommended to book at least 24hr in advance. (Sat-Sun) It is a must to book before Friday to ensure card access. Highly recommended for early booking to ensure sufficient LN2 in wet lab. (Public Holidays) It is a must to email us to book before the holiday to ensure card access. Highly recommended for early booking to ensure sufficient LN2 in wet lab. For urgent bookings, please contact the Cryo-EM staff.	<input type="checkbox"/>	
	Before starting experiment, please take photos and report to us later if there is any abnormal situation.	<input type="checkbox"/>	
	Highly recommend new experienced users to book a few times on Mon-Thu non-office hour sessions before weekend sessions.	<input type="checkbox"/>	
	Door Access	(Mon-Thu) Door access is restricted to the person who made the equipment booking and the trained user who will accompany, from 17:30 to 23:59 . (Fri-Sun) Door access is restricted to the person who made the equipment booking and the trained user who will accompany, from Friday 17:30 to Sunday 23:59 . (Public Holidays) Door access is restricted to the person who made the equipment booking and the trained user who will accompany, from the day before holiday 17:30 to the day of holiday 23:59 . Please add the name of trained user who will accompany in iLab event notes.	<input type="checkbox"/>
Door Access	(Mon-Thu) Test the card access from 17:30 to 18:00 on your booking day. (Fri-Sun) Test the card access from 17:30 to 18:00 on Friday . (Public Holidays) Test the card access from 17:30 to 18:00 on the day before holiday .	<input type="checkbox"/>	
	Enter the lab via the entrance next to subway.	<input type="checkbox"/>	
	Cards with RFID technology (e.g. Octopus card) may interfere with the card detection on the card reader.	<input type="checkbox"/>	
	It is not allowed to pass the student/staff card to non-experienced users to access the lab to use the time slot without supervision.	<input type="checkbox"/>	
	General Safety	No eating or drinking.	<input type="checkbox"/>

	Before entering the lab, check the oxygen and ethane sensors panel outside the room. If there is alarm, do not enter the room.	<input type="checkbox"/>		
	Always operate the Vitrobot with at least two trained Vitrobot users present in non-office hour.	<input type="checkbox"/>		
	Familiarize yourself with the fire escape route.	<input type="checkbox"/>		
	Locate and be aware of the emergency contact information and the first aid box.	<input type="checkbox"/>		
	Protection: <ul style="list-style-type: none"> • Proper clothing • Laboratory Coat • Nitrile Gloves • Safety Goggles • Cryogenic Gloves • Face Mask 	<input type="checkbox"/>		
	Always prioritize human safety over your samples!	<input type="checkbox"/>		
LN2 Handling Safety Guideline	Wear long trousers, closed-toe shoes, a long sleeve lab coat, and a face shield or protective goggles.	<input type="checkbox"/>		
	Maintain a safe distance from nitrogen gas to avoid inhalation.	<input type="checkbox"/>		
	Ensure that the coolant container is not overfilled with LN2 to avoid spillage when freezing on the Vitrobot.	<input type="checkbox"/>		
	Do not add LN2 into liquified ethane.	<input type="checkbox"/>		
	Always place the 4L Dewar on the floor near a corner to prevent it from falling off.	<input type="checkbox"/>		
	Exercise caution while transferring the coolant container and the 500ml LN2 bottle and use both hands for stability when transferring the coolant container.	<input type="checkbox"/>		
Ethane Handling Safety Guideline	Always handle ethane slowly and with caution.	<input type="checkbox"/>		
	Follow the proper procedure for turning on / off the ethane tank and ensure it is done carefully.	<input type="checkbox"/>		
	Avoid excessive turning of Main Valve 1 (half turn).	<input type="checkbox"/>		
	Pay attention to the on/off direction of the valve before making any adjustments.	<input type="checkbox"/>		
	Never point the ethane gas tip at any person or ethane sensor.	<input type="checkbox"/>		
	Always wear protective goggles or a face shield when handling ethane.	<input type="checkbox"/>		
	Maintain a safe distance from the ethane cup when turning it on or off to prevent spillage in case of mishandling.	<input type="checkbox"/>		
	Never leave the Cryo-EM lab unattended when the ethane tank or LN2 tank is in use!	<input type="checkbox"/>		
	Remember to turn off the ethane tank after use.	<input type="checkbox"/>		
Ethane, Oxygen Sensor Alarm	Stop the experiment immediately.	<input type="checkbox"/>		
	Remember to turn off ethane gas.	<input type="checkbox"/>		
	Open the doors of the Vitrobot and wet lab as well as the main entrance door, leave the lab.	<input type="checkbox"/>		
	Wait until the alarm stops before re-entering the lab.	<input type="checkbox"/>		
	If the alarm stops within 5 minutes, report to the CPOS staff the next day. However, if the alarm persists for an extended period, contact CBRE to reach out to the CPOS team.	<input type="checkbox"/>		
	To prevent an alarm from sounding during operation, it is important to avoid pointing the ethane gas tip directly at the ethane sensor.	<input type="checkbox"/>		

Fire Alarm	Stop the experiment immediately.	<input type="checkbox"/>		
	Remember to turn off ethane gas.	<input type="checkbox"/>		
	Follow the designated fire escape route to safely exit the lab.	<input type="checkbox"/>		
	Do not re-enter the lab until it has been declared safe to do so by the appropriate authorities.	<input type="checkbox"/>		
	After returning to the lab, please help to close the TEM doors.	<input type="checkbox"/>		
Waste Disposal	Dispose LN2 waste in the appropriate manner: <ul style="list-style-type: none"> • LN2 in 500ml bottle – pour it into the designated LN2 waste container. • LN2 in purple foam box - pour it into the designated LN2 waste container. • LN2 in 4L dewar – pour it into grid storage LN2 tank, be careful do not overfill the tank. 	<input type="checkbox"/>		
	Pour water waste into the sink located in the fume-hood room	<input type="checkbox"/>		
	Dispose biological waste as follows: <ul style="list-style-type: none"> • Place the biological waste in the small container provided on the table. • Transfer the contents of the small container into the designated larger biological waste container in the room. 	<input type="checkbox"/>		
Sharp Handling	Use sharp box for the disposal of sharp objects such as needles or blades. Never dispose sharp objects in regular waste bins to prevent accidental injuries.	<input type="checkbox"/>		
	Handle Vitrobot tweezers with caution.	<input type="checkbox"/>		
	Vitrobot tweezers are only for grid! Never use it for other purposes.	<input type="checkbox"/>		
Incident Guidelines	LN2 / Ethane Burn <ul style="list-style-type: none"> • Light skin burn: Flush the affected area with warm water/tap water for at least 15 minutes or as instructed by medical professionals. • Severe burn or eye injury: Immediately call for emergency medical assistance. • Report the incident to the CPOS team and supervisor as soon as possible. 	<input type="checkbox"/>		
	Sharp Skin Wound <ul style="list-style-type: none"> • Locate and access the first aid box. • Rinse the wound thoroughly with clean water or sterile saline solution to remove any dirt or debris. Gently pat the area dry with a clean cloth or sterile gauze. • Depending on the severity of the wound, it may be necessary to seek medical attention for further assessment and treatment. • Report the incident to the CPOS team and supervisor as soon as possible. 	<input type="checkbox"/>		
Downgrade Policy	Misconduct during non-office hours may result in warning messages or the suspension of booking privileges during non-office hours.	<input type="checkbox"/>		
Part B (Operation)				
Grid Storage	Please be cautious and avoid dropping the string of the puck rack into the LN2 tank. It is highly suggested to put the puck rack on the table beside the storage tank.	<input type="checkbox"/>		

	Please make sure you have enough space for grid storage. Do not place samples in another group's puck.	<input type="checkbox"/>		
Easi-Glow	NEVER click "SAVE PROGRAM SETTINGS"	<input type="checkbox"/>		
4L Dewar Schedule	AM Dewar: Available from 9 AM to 1 PM.	<input type="checkbox"/>		
	PM Dewar: Available from 1:30 PM to 5:30 PM.	<input type="checkbox"/>		
	Night Dewar: Available from 6 PM to 11 PM.	<input type="checkbox"/>		
Location of Tools	Ethane container: Beside the Vitrobot / beside hotplate.	<input type="checkbox"/>		
	Purple foam box: beside loading station.	<input type="checkbox"/>		
	Tweezers: in the case beside the Vitrobot.	<input type="checkbox"/>		
	Table lamp: besides centrifuge, avoid charging the lamp overnight and only charge it during the daytime to prevent electrical hazards.	<input type="checkbox"/>		
	500ml bottle and its cover: in the oven.	<input type="checkbox"/>		
	Humidifier: beside the Vitrobot.	<input type="checkbox"/>		
During The Run	Never set "MAN" for humidity.	<input type="checkbox"/>		
	Able to add or delete processes with different parameters.	<input type="checkbox"/>		
After The Run (checked by both operator and the second person)	Turn off Vitrobot and Easi-Glow.	<input type="checkbox"/>		
	Turn off the ethane tank to prevent any potential leaks or accidents.	<input type="checkbox"/>		
	Shut down the Vitrobot following the proper procedures.	<input type="checkbox"/>		
	Remove the filter paper and dispose of it in the designated waste bin.	<input type="checkbox"/>		
	Follow the two-step process for emptying the humidifier.	<input type="checkbox"/>		
	Place the Vitrobot tweezers back in the case.	<input type="checkbox"/>		
	Place the coolant container on the table to ensure proper ventilation and dryness.	<input type="checkbox"/>		
	Place the thermos bottle and its lid in the oven to dry.	<input type="checkbox"/>		
	Tidy and clean the bench area.	<input type="checkbox"/>		
	Sign the logbook.	<input type="checkbox"/>		
	Remember to take away all your personal belongings.	<input type="checkbox"/>		
	Turn off the light and lock the door.	<input type="checkbox"/>		
Make sure the main entrance door is properly closed.	<input type="checkbox"/>			

Remarks for staff:

If the user can be processed for experience user training if:

- book and use the instrument 10 times within 6 months. (For Cryo-EM Core)
- has no misbehavior in the last 3 months (with at least 5 bookings).

Evaluation will be conducted after the training for 5-working days.

Fail the evaluation if:

- Fail any black item.
- Fail any 2 white items in either Part A or Part B.

If the user fails, he / she can apply again 3 months later.

Dear User,

This document is written to address the lab regulation & safety concerns when you are qualified to be an experienced user for any instruments within the LKS Cryo-EM Laboratory.

Please read through the Health and Safety section of the Operation Manual and be alerted in the lab area always.

When completed, sign the form below and return it to the LKS Cryo-EM Laboratory at LLG03 of Laboratory Block, Li Ka Shing Faculty of Medicine, HKU.

-
- I confirm that I have been notified of any potential hazards and are reminded to be aware of all health and safety issues in LKS Cryo-EM Laboratory, in which the instrument of which I am an experienced user resides.
 - I am aware of all regulations and users' responsibility for LKS Cryo-EM Laboratory.
 - I am aware of the no tolerance policy of any abused use in non-office hours booking.

Name:

Staff / Student No.:

Department:

P.I. Name:

Signature: _____ **Date:** _____

CPOS Cryo EM

EXPERIENCE USER CHECKLIST (Vitrobot)

Part A (General Policy and Safety)	
General Policy	The Vitrobot sessions are from Monday to Sunday 10:00-12:00, 13:30-15:30, 15:30-17:30, 18:00-20:00 and 20:00-22:00. Avoid booking the same Vitrobot with another user unless both are booked by other users.
	(Mon-Fri) It is highly recommended to book at least 24hr in advance. (Sat-Sun) It is a must to book before Friday to ensure card access. Highly recommended for early booking to ensure sufficient LN2 in wet lab. (Public Holidays) It is a must to email us to book before the holiday to ensure card access. Highly recommended for early booking to ensure sufficient LN2 in wet lab. For urgent bookings, please contact the Cryo-EM staff.
	Before starting experiment, please take photos and report to us later if there is any abnormal situation.
	Highly recommend new experienced users to book a few times on Mon-Thu non-office hour sessions before weekend sessions.
Door Access	(Mon-Thu) Door access is restricted to the person who made the equipment booking and the trained user who will accompany, from 17:30 to 23:59 .
	(Fri-Sun) Door access is restricted to the person who made the equipment booking and the trained user who will accompany, from Friday 17:30 to Sunday 23:59 .
	(Public Holidays) Door access is restricted to the person who made the equipment booking and the trained user who will accompany, from the day before holiday 17:30 to the day of holiday 23:59 .
	Please add the name of trained user who will accompany in iLab event notes.
	(Mon-Thu) Test the card access from 17:30 to 18:00 on your booking day. (Fri-Sun) Test the card access from 17:30 to 18:00 on Friday . (Public Holidays) Test the card access from 17:30 to 18:00 on the day before holiday .
	Enter the lab via the entrance next to subway.
	Cards with RFID technology (e.g. Octopus card) may interfere with the card detection on the card reader. It is not allowed to pass the student/staff card to non-experienced users to access the lab to use the time slot without supervision.
General Safety	No eating or drinking.
	Before entering the lab, check the oxygen and ethane sensors panel outside the room. If there is alarm, do not enter the room.
	Always operate the Vitrobot with at least two trained Vitrobot users present in non-office hour.
	Familiarize yourself with the fire escape route.
	Locate and be aware of the emergency contact information and the first aid box.
	Protection: <ul style="list-style-type: none"> • Proper clothing • Laboratory Coat • Nitrile Gloves • Safety Goggles • Cryogenic Gloves • Face Mask
	Always prioritize human safety over your samples!
LN2 Handling Safety Guideline	Wear long trousers, closed-toe shoes, a long sleeve lab coat, and a face shield or protective goggles.
	Maintain a safe distance from nitrogen gas to avoid inhalation.

	<p>Ensure that the coolant container is not overfilled with LN2 to avoid spillage when freezing on the Vitrobot.</p> <p>Do not add LN2 into liquified ethane.</p> <p>Always place the 4L Dewar on the floor near a corner to prevent it from falling off.</p> <p>Exercise caution while transferring the coolant container and the 500ml LN2 bottle and use both hands for stability when transferring the coolant container.</p>
Ethane Handling Safety Guideline	<p>Always handle ethane slowly and with caution.</p> <p>Follow the proper procedure for turning on / off the ethane tank and ensure it is done carefully.</p> <p>Avoid excessive turning of Main Valve 1 (half turn).</p> <p>Pay attention to the on/off direction of the valve before making any adjustments.</p> <p>Never point the ethane gas tip at any person or ethane sensor.</p> <p>Always wear protective goggles or a face shield when handling ethane.</p> <p>Maintain a safe distance from the ethane cup when turning it on or off to prevent spillage in case of mishandling.</p> <p>Never leave the Cryo-EM lab unattended when the ethane tank or LN2 tank is in use!</p> <p>Remember to turn off the ethane tank after use.</p>
Ethane, Oxygen Sensor Alarm	<p>Stop the experiment immediately.</p> <p>Add enough LN2 into the coolant container if you are in the middle of freezing. Cover the container is properly if needed.</p> <p>Remember to turn off ethane gas.</p> <p>Open the doors of the Vitrobot and wet lab as well as the main entrance door, leave the lab.</p> <p>Wait until the alarm stops before re-entering the lab.</p> <p>If the alarm stops within 5 minutes, report to the CPOS staff the next day. However, if the alarm persists for an extended period, contact CBRE to reach out to the CPOS team.</p> <p>To prevent an alarm from sounding during operation, it is important to avoid pointing the ethane gas tip directly at the ethane sensor.</p>
Fire Alarm	<p>Stop the experiment immediately.</p> <p>Add enough LN2 into the coolant container if you are in the middle of freezing. Cover the container is properly if needed.</p> <p>Remember to turn off ethane gas.</p> <p>Follow the designated fire escape route to safely exit the lab.</p> <p>Do not re-enter the lab until it has been declared safe to do so by the appropriate authorities.</p> <p>After returning to the lab, please help to close the TEM doors.</p>
Waste Disposal	<p>Dispose LN2 waste in the appropriate manner:</p> <ul style="list-style-type: none"> • LN2 in 500ml bottle – pour it into the designated LN2 waste container. • LN2 in purple foam box - pour it into the designated LN2 waste container. • LN2 in 4L dewar – pour it into grid storage LN2 tank, be careful do not overfill the tank. <p>Pour water waste into the sink located in the fume-hood room</p> <p>Dispose biological waste as follows:</p> <ul style="list-style-type: none"> • Place the biological waste in the small container provided on the table. • Transfer the contents of the small container into the designated larger biological waste container in the room.
Sharp Handling	<p>Use sharp box for the disposal of sharp objects such as needles or blades. Never dispose sharp objects in regular waste bins to prevent accidental injuries.</p> <p>Handle Vitrobot tweezers with caution.</p>

	Vitrobot tweezers are only for grid! Never use it for other purposes.
Incident Guidelines	LN2 / Ethane Burn <ul style="list-style-type: none"> • Light skin burn: Flush the affected area with warm water/tap water for at least 15 minutes or as instructed by medical professionals. • Severe burn or eye injury: Immediately call for emergency medical assistance. • Report the incident to the CPOS team and supervisor as soon as possible.
	Sharp Skin Wound <ul style="list-style-type: none"> • Locate and access the first aid box. • Rinse the wound thoroughly with clean water or sterile saline solution to remove any dirt or debris. Gently pat the area dry with a clean cloth or sterile gauze. • Depending on the severity of the wound, it may be necessary to seek medical attention for further assessment and treatment. • Report the incident to the CPOS team and supervisor as soon as possible.
Downgrade Policy	Misconduct during non-office hours may result in warning messages or the suspension of booking privileges during non-office hours.
Part B (Operation)	
Grid Storage	Please be cautious and avoid dropping the string of the puck rack into the LN2 tank. It is highly suggested to put the puck rack on the table beside the storage tank.
	Please make sure you have enough space for grid storage. Do not place samples in another group's puck.
Easi-Glow	NEVER click "SAVE PROGRAM SETTINGS"
4L Dewar Schedule	AM Dewar: Available from 9 AM to 1 PM.
	PM Dewar: Available from 1:30 PM to 5:30 PM.
	Night Dewar: Available from 6 PM to 11 PM.
Location of Tools	Ethane container: Beside the Vitrobot / beside hotplate.
	Purple foam box: beside loading station.
	Tweezers: in the case beside the Vitrobot.
	Table lamp: besides centrifuge, avoid charging the lamp overnight and only charge it during the daytime to prevent electrical hazards.
	500ml bottle and its cover: in the oven.
	Humidifier: beside the Vitrobot.
During The Run	Never set "MAN" for humidity.
	Able to add or delete processes with different parameters.
After The Run (checked by both operator and the second person)	Turn off Vitrobot and Easi-Glow.
	Turn off the ethane tank to prevent any potential leaks or accidents.
	Shut down the Vitrobot following the proper procedures.
	Remove the filter paper and dispose of it in the designated waste bin.
	Follow the two-step process for emptying the humidifier.
	Place the Vitrobot tweezers back in the case.
	Place the coolant container on the table to ensure proper ventilation and dryness.
	Place the thermos bottle and its lid in the oven to dry.
	Tidy and clean the bench area.
	Sign the logbook.
	Remember to take away all your personal belongings.
	Turn off the light and lock the door.
Make sure the main entrance door is properly closed.	