MCN Facility Manual

PQMS1-MCN-POL-0025-V3

DOCUMENT AUTHORISATION			
Prepared by: John Zhu	Quality Assurance Officer	Signed: JZ	Date: 26/06/2018
Authorised by: Sean Langelier	General Manager	Signed: SL	Date: 26/06/2018
Additional authorisation if required			

FACILITY MANUAL

Contents

***Note**: Every attempt is made to ensure that this manual is accurate when existing policies are updated or if new policies are established. The key policies for MCN are published on the MCN website at www.nanomelbourne.com/access. If there is any discrepancy between policies and forms provided in this document and those published online, then the policies and forms online shall take precedence.*

1. MCN OVERVIEW

The mission of the Melbourne Centre for Nanofabrication (MCN) is to facilitate the integration of nanotechnology techniques into the Research and Development activities that support Australia's innovation and manufacturing economies.

The MCN is the Victorian node and headquarters of the Australian National Fabrication Facility (ANFF). The ANFF was established under the National Collaborative Research Infrastructure Strategy (NCRIS) to provide open access to state-of-the-art fabrication equipment and processes for the industrial, research and academic communities.

The MCN offers access to leading edge, state-of-the-art micro-/nano-fabrication and characterisation technologies and processes for all sectors of industrial, research and the academic community, both local and global.

The ANFF-Victorian Node comprises the MCN and a significant array of additional, supporting capabilities that are located in the laboratories of each of the partner institutions. The MCN is operated by Monash University on behalf of the stakeholders, as an unincorporated joint venture.

Current expertise is provided in the areas of advanced materials processing and biotechnology, leading to the development of a wide range of customised sensors, actuators, and devices applied to areas from biomedicine and energy to nano-electronics and the environment.

1.1. OPERATIONAL PURPOSE AND SCOPE

The MCN Facility Manual provides all personnel of the MCN Facility with a convenient reference that can be consulted to find out about the Facility, its staff and capabilities.

This Facility Manual outlines operating policies and procedures, occupational health and safety information, conduct, environmental responsibilities, chemical use, access to and use of equipment and associated procedures. These policies and procedures apply to all personnel on site at MCN.

If you have any questions or comments regarding this manual or this facility, please contact the Facility Manager.

2. ACCESS

2.1. BUSINESS HOURS

The main entrance is accessible from 9am until 5pm, Monday to Friday. A security fob will provide you with access via the main entrance into the access controlled (laboratory) areas. All laboratories have FOB activated doors that will prevent users from entering before 8.30am and exiting after 6pm unless the fob is enabled for out of hour's access. Should you require access to MCN outside of normal working hours, please refer to the **Out of Hours Work Policy** (PQMS1-MCN-POL-0032-V)

2.2. CONDITIONS OF ACCESS

A condition of access to the facility is to include the following acknowledgement on any publications or presentations resulting from work undertaken at the MCN Facility:

"This work was performed in part at the Melbourne Centre for Nanofabrication (MCN) in the Victorian Node of the Australian National Fabrication Facility (ANFF)"

For further information, refer to the MCN **Intellectual Property Policy** (PQMS1-MCN-POL-0029-V)

2.3. SECURITY & FOBS

Monash Security provides security services. All personnel on site may be recorded by CCTV cameras and must be able to produce identification upon request in addition to observing any direction given by a Monash Security representative including instructions to leave a restricted area that they have previously been authorized to enter.

Please notify MCN staff (or security, if after hours) immediately if you observe or become aware of unauthorised personnel working in a restricted area of the MCN (e.g. laboratories or cleanroom).

The MCN uses RFiD tag-enabled fobs to provide electronic (controlled) access. All users must complete an onsite OHS induction before a fob is issued. Fobs must only be used in accordance with the MCN Security Policy. Lost FOBS must be reported immediately for deactivation and users must NOT share their FOB with other users. For further information, please refer to the **MCN Security Policy** (PQMS1-MCN-POL-0028-V).

2.4. INDUCTION & TRAINING

All users must undertake training as indicated in the Training Matrix below.

		Service Chase Corridor Access	FIB-SEM Lab	PDMS Lab	Nanoparticle Lab	Chem/Biochem/Recomig Lab	Confocal Microscope	PC2 Lab	Cleanroom	EBL lab	FEG-SEM Lab
MCN General Induction	Monash OHSE Induction	X	X	X	X	X	X	X	X	X	X
	MCN general Induction	X	X	X	X	X	X	X	X	X	X
MCN Hazard Training (In-house)	Dangerous Goods Waste Management		X	X	X	X	X	X	X	X	X
	HF First Aid								AS NEEDED		
Hazard Based Training (RTO)	Biosafety 1 & 2							X			
	Cryogenics										
	Chemwatch MSDS										
	Gas Cylinder Safety										
	Laser Safety						X				
	Ergonomics/Manual Handling							X			
	Hydrofluoric Acid Safety								AS NEEDED		
	Dangerous Goods/Hazardous Substances	X	X	X	X	X	X	X	X	X	X
MCN Local Area Inductions	MCN PC2 Laboratory							X			
	MCN Cleanrooms								X	X	X
	MCN Non Cleanrooms			X	X	X					
	MCN FIB-SEM		X								
	MCN FEG-SEM										X
	MCN EBL lab									X	
	MCN Service Chase Corridor	X									
MCN Tool Training as required	ACLS Tool Specific Training		X	X	X	X	X	X	X	X	X
	Non-ACLS Tool Specific Training		X	X	X	X	X	X	X	X	X

The **OH&S Facility Induction is offered every first and third Monday** of the month at 10am (please check the website first to ensure that this session has not been rescheduled to another day/time at http://nanomelbourne.com/access). Users can attend the induction without the need to book (unless there is a large group). Users who have not yet completed the OH&S Facility Induction will not be able to undertake any work on site and must be under supervision at all times.

Users will be required to attend an annual Induction refresher session to retain access privileges. These sessions are held in March and September each year.

The MCN Dangerous Goods & waste management induction module is compulsory and must be attended prior to receiving laboratory and instrument inductions. This module is offered fortnightly.

In addition, local area and tool induction modules are provided by staff by appointment and are mandatory prior to accessing tools.

Training modules provided by registered training organisations (eg. NSCA) are offered twice per year and address OH&S training obligations for dangerous goods, cryogenics, laser safety, ergonomics, risk assessment, hydrofluoric acid awareness and first aid.

2.5. RECOGNITION OF PRIOR LEARNING

Hazard Based Training (RTO) modules (or their equivalent) completed elsewhere will be recognised provided the training was undertaken within the last three years. Users should lodge a copy of their certificate of attainment either at MCN Reception or via email at mcn-enquiries@nanomelbourne.com.

2.6. USER FEES

The Access and Pricing Policy outlines the hourly charges that are applied for use of all equipment at MCN. Use of MCN's facilities will be charged at the published rates unless otherwise agreed upon by the MCN Managing Director. For clarity, it is the users' responsibility to ensure they have sufficient funds available to cover all training and usage costs. For further information, please refer to the Access & Pricing (PQMS1-MCN-POL-0027-V).

For industry clients, please also refer to the MCN Policy for Laboratory Usage by Industry Policy (PQMS1-MCN-POL-0031-V).

2.7. GENERAL CONDUCT POLICY

The purpose of the MCN General Conduct Policy is to provide guidance to users of the MCN about their conduct while working at the MCN. Additionally, the policy provides a framework for addressing aspects of non-compliance, particularly where a user of the facility compromises principles of safety, cleanliness or access/security.

For further information, please refer to the General Conduct Policy (PQMS1-MCN-POL-0026-V)

2.8. UNDERGRADUATE STUDENTS

Supervisors of undergraduate students generally have a particular responsibility for safeguarding the Occupational Health and Safety of those in their charge. For this reason, the MCN has clearly defined terms for undergraduate student supervision whilst working on site.

For further information, refer to the Undergraduate Student Policy (PQMS1-MCN-POL-0033-V).

2.9. THIRD PARTY EQUIPMENT

Any third party equipment to be located at MCN must be approved by the MCN Facility Manager before being moved to MCN and must be operated in accordance with specifications of the policy and Standard Operating Procedures (SOPs) approved by the MCN Facility Manager. For further information, refer to the Hosted Equipment Policies for internal (PQMS1-MCN-POL-0039-V) and external (PQMS1-MCN-POL-0040-V).

2.10. VISITORS

All visitors to the laboratories or other controlled-areas must sign into the Visitors log book at reception and wear an identifying visitor badge at all times whilst onsite. The visitor log book also serves as the fire roll. Upon leaving the facility, visitors must sign out and return their visitor badge to reception. Staff/users hosting visitors are responsible for their safety including during a building emergency.

Visitors to MCN who have not completed the MCN general OH&S induction are not permitted to enter the controlled- access areas of MCN unless accompanied by a staff member or MCN Technology Fellow. Resident users of MCN are permitted to escort visitors into controlled-access areas by arrangement with an MCN staff member.

Visitors are NOT permitted to perform any work themselves on the MCN site. Visitors who are proceeding only to the meeting room, tea room or staff office area during normal business hours are not required to sign in.

All visitors after hours, must sign in to the Visitor Log Book at Reception

- Review the Visitors Emergency Guide (located at Reception and throughout the site) to identify the emergency escape routes and evacuation system for the MCN.
- Follow the direction of MCN staff, Monash Security or emergency response personnel

2.11. SITE TOURS

All site tours to the MCN laboratories must be by appointment and remain under the supervision of an MCN staff member, MCN Technology Fellow, or a Licensed User by prior arrangement. Licensed Users must seek approval from the Facility Manager or Director before bringing Visitors to the Laboratory areas of the site.

Wherever possible we will endeavour to accommodate requests for tours. However, tours need to be conducted in a way that results in a minimal impact on users.

If you are interested in arranging a group (or individual) tour of the facility, please email an enquiry to MCN- enquiries@nanomelbourne.com or phone 03 9902 4073.

2.12. STAFF CONTACTS

TITLE AND NAME	EMAIL ADDRESS	TELEPHONE
Managing Director		
Dr Nicolas Voelcker	nicolas.voelcker@monash.edu	
General Manager		
Dr. Sean Langelier	sean.langelier@nanomelbourne.com	03 9902 4100
Facility and OHS&E Manager		
Dr Paul Spizzirri	paul.spizzirri@nanomelbourne.com	03 9902 9653
		0407 203 145 (AH)
Client Services Manager		
John Zhu	john.zhu@nanomelbourne.com	03 9902 4616
Senior Process Engineers		
Bernie Orelup	bernie.orelup@nanomelbourne.com	03 9902 9655
General Enquiries	MCN-enquiries@nanomelbourne.com	03 9902 4073

2.13. REFERENCES

MCN Web Page - www.nanomelbourne.com

AC Lab System (ACLS) Equipment bookings - http://bookings.mcn.monash.edu/

3. OH&S ROLES AND RESPONSIBILITIES

MCN and its staff are committed to workplace safety, resource conservation, and managing our environmental impact. This is achieved by

- Ensuring activities conducted at MCN are compliant with legislative/regulated/best practice requirements
- Promoting EHS awareness through training, communication and participation
- Ensuring all users and visitors comply with Monash and MCN policies
- Assessing hazards to identify appropriate management strategies prior to implementation
- Using resources efficiently and minimizing landfill waste

Note: The MCN Occupational Health, Safety and Environmental Strategic Plan is located on the web site http://nanomelbourne.com/access

All users are responsible for monitoring and maintaining safety standards at MCN.

MCN staff are responsible for the day-to-day operation of the MCN facility, its instrumentation and services. It is essential that an MCN staff member is consulted immediately if users or visitors have any doubts or are unsure about the safe work practices employed at the MCN. It is also vital that staff are informed immediately of any issues such as damaged equipment, consumable replenishment, safety hazards or incidents, inappropriate behaviour by others, etc.

Safety is paramount for all users of this facility. Safe work practices must be adopted at all times and MCN staff must be alerted to any safety concerns. The population of the MCN building is comprised of staff, users, contractors and visitors who all have specific responsibilities when on this site. They are as follows:

3.1. STAFF AND USERS

All staff and users must:

- Follow the OHS policy and procedures of Monash University and the MCN
- Seek advice before starting new or unfamiliar work
- Be familiar with the emergency and evacuation procedures and routes
- Follow the directions of emergency response and health & safety staff
- Know the location of emergency equipment (if trained in its use)
- Wear appropriate clothing and footwear for the work you do
- Use (appropriately) and maintain any Personal Protective Equipment (PPE) provided
- Use a documented risk management process to manage OHS risks
- Not wilfully or recklessly endanger anyone's health and safety
- Immediately report Hazards or incidents to the Safety Officer

3.2. USERS

All Users must:

- Not bring a contractor on site without discussing this first with the Facility Manager
- Identify new procedures/chemicals/hazards being considered for use at the MCN to the Safety/Facility Manager (BEFORE bringing them on site). Through consultation, an appropriate solution for managing new hazard elements will be developed with you.

3.3. SUPERVISORS

If you supervise students, you are responsible for their health and safety. You must:

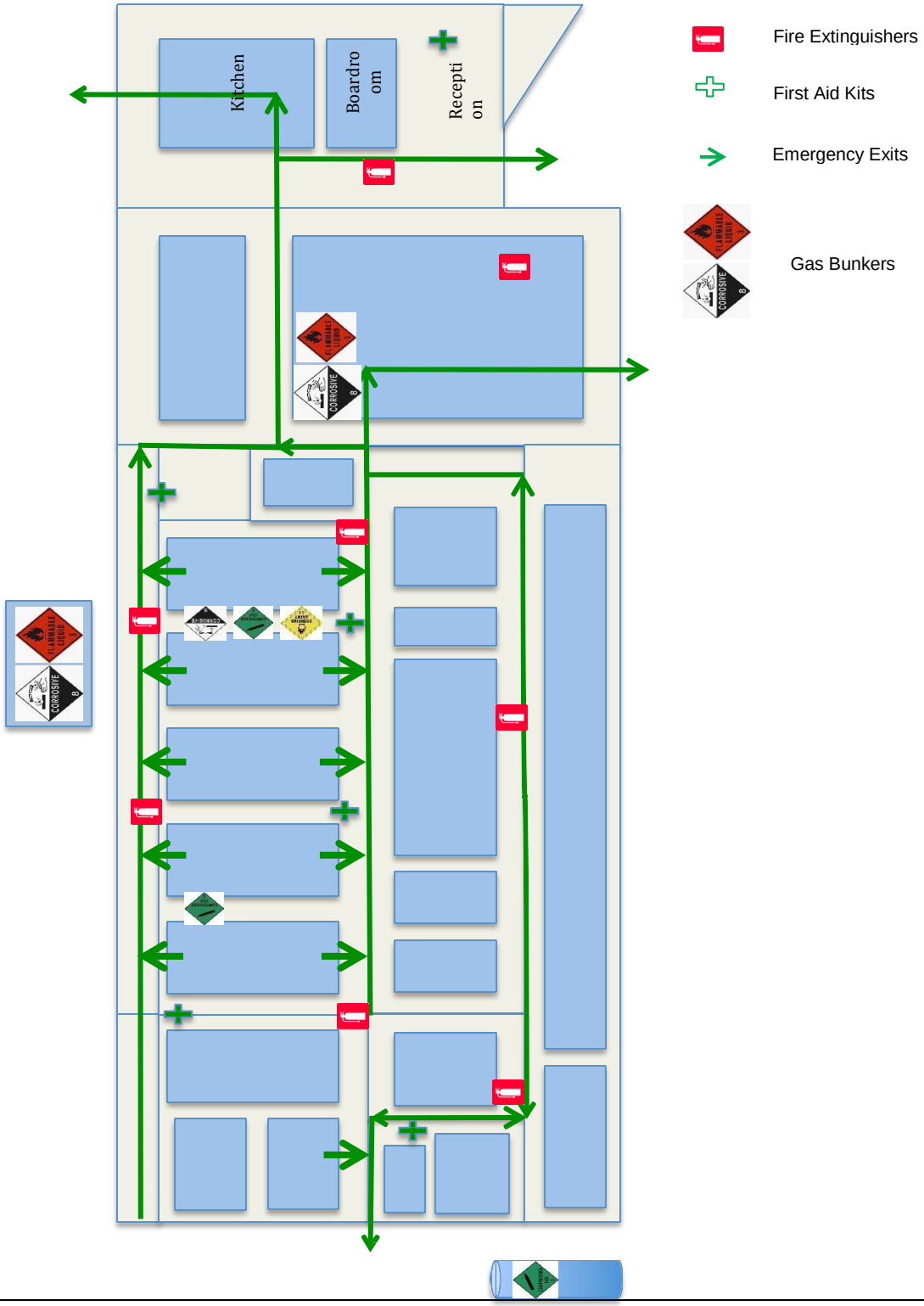
- Encourage appropriate attitudes towards OHS
- Ensure that you, your staff and students undertake recommended OHS training
- Use a documented risk management process to manage OHS risks
- Apply relevant OHS policy (MCN and Monash) and procedures
- Actively participate in OHS inspections and audits
- Include OHS performance in staff appraisals
- Appropriately authorize your staff/students who are applying to MCN to perform hazardous activities.

Note: You can delegate the supervision or training of staff and students to a suitably qualified person, but you are responsible for ensuring they are competent and have had the relevant training.

3.4. BUILDING LAYOUT & EVACUATION PLAN

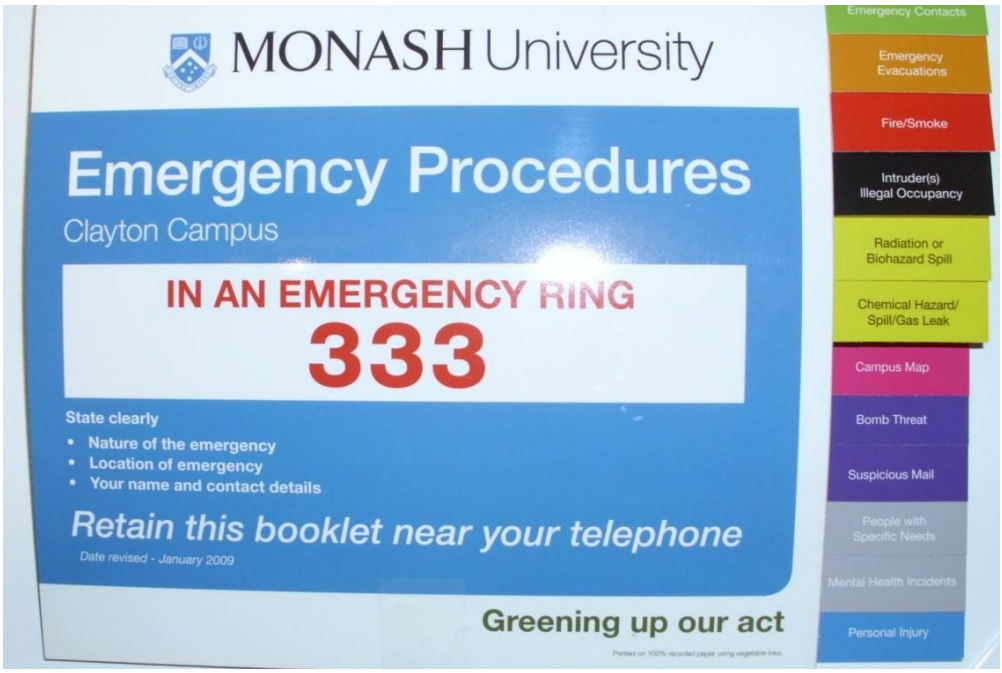
Emergency exit signs are displayed throughout the facility indicating the evacuation routes.

The Evacuation Assembly Area from all escape routes is located on the grass opposite the front entrance of the building (refer to diagram).



3.5. EMERGENCY PROCEDURES

There is a range of Emergency Response Procedures available for Staff/Users/Visitors to employ when visiting/working at the MCN. These procedures are outlined in the Monash Emergency Procedures Booklet (see below), which are located next to every telephone on site.



This booklet contains important information on how to respond to concerning behaviours in a systematic way to prevent the risk of escalation to a more serious incident. The booklet covers the following areas:

- Emergency Contact Information (Monash)
- Emergency evacuation
- Fire/Smoke
- Intruders/illegal occupancy
- Radiation or biohazard spill
- Chemical Hazard / spill / gas leak
- Bomb threat
- Suspicious mail
- People with specific needs
- Mental health incidents
- Personal injury

3.6. EMERGENCY RESPONSE ALARMS

The Melbourne Centre for Nanofabrication (MCN) employs TWO (2) different alarm systems to manage the site's Emergency Response. They are:

1. Conventional Emergency Evacuation (FIRE) alarms and
2. Gas Hazard alarms

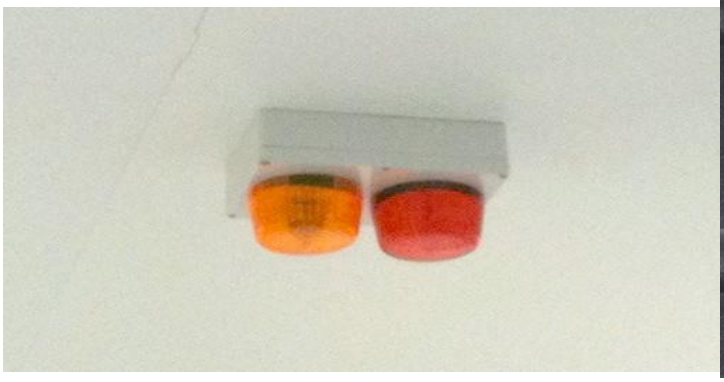
3.7. EMERGENCY EVACUATION (FIRE ALARM)

On hearing the FIRE ALARM (BLEEP, BLEEP, BLEEP) OR being instructed to evacuate by a Floor Warden (Yellow Cap)

1. Secure confidential/valuable items (IF TIME PERMITS)
2. Proceed to the nearest EMERGENCY EXIT and leave the building
3. Follow instructions from the Floor/Chief Wardens
4. Proceed to the ASSEMBLY area and remain there until given the ALL CLEAR to return to the building by the Chief/Floor Warden or Emergency Services Personnel (Fire Brigade, Police, Ambulance)
5. Present yourself to a floor warden for checking against the fire role (visitor logbook)

3.8. GAS HAZARD ALARMS

The MCN facility is fitted with around 40 sensors monitoring oxygen levels (oxygen depleted environments) and leaks from toxic gases. The alarms are self-contained and incorporate a red and orange strobe light along with an audible siren on the side (see below). These units are distributed throughout the site and are usually mounted on ceilings or high on walls.



ORANGE FLASHING LIGHT WITHOUT LOCAL SIREN

The Orange Flashing Light indicates a loss of containment pressure (negative) on the gas manifolds (service areas of the facility). This is NOT A SIGNAL TO EVACUATE.

Notify MCN staff immediately of this alert.

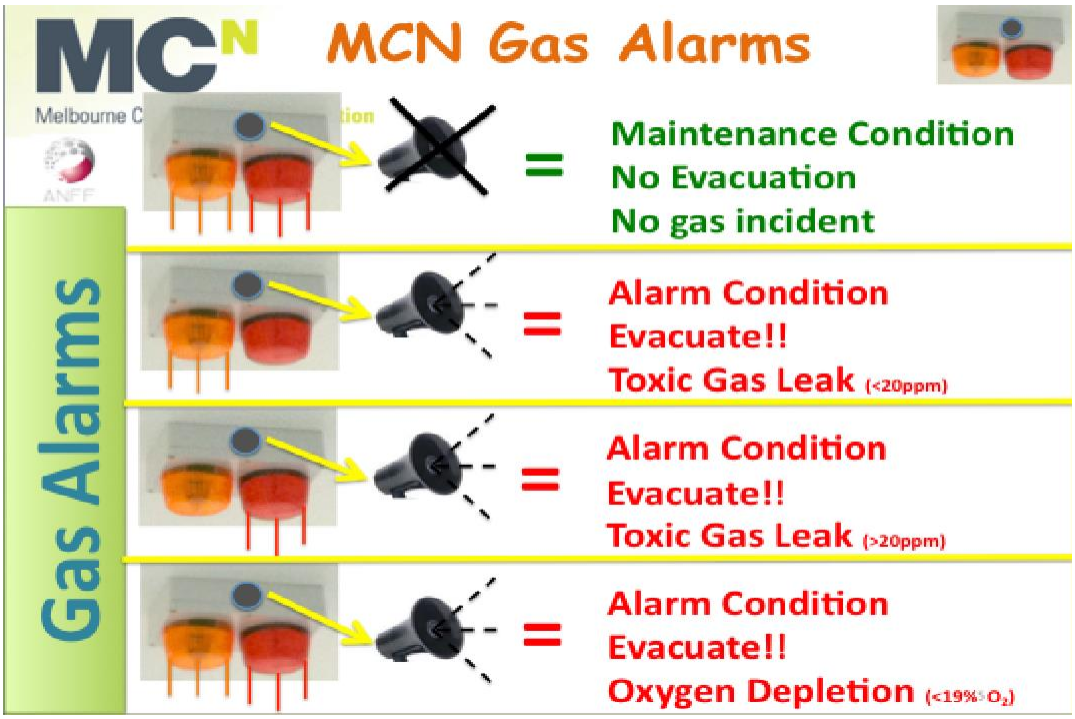
ORANGE/RED FLASHING LIGHT WITH LOCAL SIREN

The ORANGE/RED FLASHING LIGHT + SIREN (LOCAL) indicates the Low/High level detection of a toxic gas or oxygen deficiency approaching/exceeding the dangerous threshold.

On seeing the flashing ORANGE light and hearing the alert tone (Beep, Beep, Beep), staff/visitors and users should:

1. Stop working
2. Make safe your work/area and secure confidential/valuable items (if Time Permits)
3. EVACUATE THE BUILDING avoiding areas with significant bottled gas (or Nitrogen) in storage or use
4. Proceed to the nearest EMERGENCY EXIT and leave the building
5. Follow instructions from the Floor/Chief Warden
6. Proceed to the ASSEMBLY area and remain there until given the ALL CLEAR to return to the building by the Chief/Floor Warden or Emergency Services Personnel (Fire Brigade, Police, Ambulance).
7. Present yourself to a floor warden for checking against the fire role (visitor logbook).

Note that the gas hazard alarm siren is associated with the flashing strobe lights and IS NOT the same as the fire evacuation alarm siren.



The specific MCN response for Fire and Smoke is as follows: IN THE EVENT OF A FIRE OR SMOKE:

1. RESCUE AND OR REMOVE any person in danger ONLY if it is safe to do so
2. ALARM – Raise the alarm by informing the nearest MCN staff member (where possible) and by pressing one of the red Fire “Breakglass” buttons distributed around the site. You can also call 0-000 and ask for the fire brigade.
3. CONTAIN the fire by closing doors (don’t lock them) as you leave.

4. EXTINGUISH &/OR EVACUATE to your Assembly Area as instructed by Floor Wardens. Only attempt to extinguish a Fire IF you have been trained, IF it is safe to do so and IF you have someone else there to assist you.
5. Advise Monash Security on ext 333 (or 9905 3333) and provide them your name, location (151 Wellington Rd Clayton, Bld 222) and the type and extent of fire/emergency. They are able to send assistance and coordinate the emergency service response.
6. Remain at the ASSEMBLY AREA until given the ALL CLEAR to return to the building by the Chief/Floor Warden or Emergency Services Personnel (Fire Brigade, Police, Ambulance).
7. Present yourself to a floor warden for checking against the fire role (visitor logbook).

Note: While fire hoses are available on site, their use should be restricted to Emergency Services Personnel (Fire Brigade) only because there are no floor drains on site.

3.9. EMERGENCY RESPONSE RESOURCES

FIRE EXTINGUISHER LOCATIONS

- Reception – Ground floor, within fire hose reel cabinet
- Cleanroom – Bay 1 corridor and Class 100 airlock
- Chase 1 and 3
- Loading Bay
- User workstations/corridor – G52 and G42 entrances
- Plant Room – Level 1
- Sick Bay – Level 1

FIRST AID KIT LOCATIONS

- Cleanroom Chases
- Cleanroom - located along the corridor opposite Bay 2 and Bay 4
- Laboratories – Utility stations at both ends of the corridor
- Reception

3.10. MCN EMERGENCY RESPONSE CONTACTS

SAFETY OFFICER AND CHIEF WARDEN

Paul Spizzirri

FIRE WARDENS	29653 or 0407 203 145
Sean Langelier	24100

BREATHING APPARATUS

Paul Spizzirri	29653
Yang Lim	29616
Lachlan Hyde	24615

FIRST AID OFFICERS

Sean Langelier	24100
Yang Lim	29616
Bernie Orelup	29655

3.11. STEP BY STEP ACCESS PROCEDURE

Since becoming fully operational in 2011, MCN has welcomed an average of 270 users per year, some accessing the facility for months at a time, others just for a few hours.

We are delighted to offer access to postgraduate students and staff from research institutions and industry clients around Australia and across the world.

There are four simple stages in to the registrations process to become an MCN user. If you wish to engage an MCN staff member to perform work for you, you may only need to take part in step 1.

Step 1: New customer form

MCN is pleased to offer all new users and clients a free, one-hour consultation to assess project feasibility and to plan the processes and training which will be required by the client at MCN. The consultation is confidential and obligation-free.

To prepare for this consultation, please complete a project inquiry form. The ability for MCN staff to prepare for the consultation session is influenced by the information that can be provided in this form. A member of the MCN staff will respond to your request within two working days.

Step 2: Book a consultation

A MCN staff member will contact you to book a time for your consultation, whereby they will help you to create a training plan designed to best meet your project needs.

Step 3: Attend induction

As the first step in your training plan will outline, all new clients are required to attend an MCN facility induction in order to perform independent work at the MCN. Details of the induction times can be found here.

Step 4: Register at MCN Booking System

For all new users, please http://bookings.mcn.monash.edu/ at the MCN ACLS booking system with as much information as possible.

Step 5: Begin instrument training

Please contact the relevant staff members outlined in your training plan to begin appropriate instrument training.

Further information regarding our access policies can be found on the policies page of this website.

4. TRAINING

Training needs should be discussed during your initial contact with MCN as licensed users can only use equipment.

4.1. RESPONSIBILITIES

In order for equipment training to be as effective as possible, the following outlines the responsibilities of the Trainer and the Trainee.

4.2. TRAINER'S RESPONSIBILITIES

- To teach the Trainee how to operate the equipment safely, effectively and without damage.
- To instruct the Trainee in the basic principles of operation of the equipment and to teach the Trainee how to perform basic adjustments in order to achieve reasonable performance.
- To teach the basic techniques relevant to the Trainee and their project.
- To provide advice to the Trainee on optimisation of the equipment for its performance.
- To seek feedback from the Trainee on opportunities for improvement in training.

4.3. TRAINEE'S RESPONSIBILITIES

- To arrange for training with a Process Engineer by appointment.
- To always seek help if you are unsure of the correct operating procedure or if the equipment is not working properly.
- To always follow the Trainer's instructions on the operation of the equipment. To take detailed notes to allow follow up.
- To learn the theory of the technique being taught and related techniques by consulting books and the scientific literature. MCN staff can suggest suitable references.
- To become proficient in operating the equipment in a safe manner.
- Training sessions are not intended to yield scientific results but rather to teach the Trainee as described above. However, should publishable data be obtained and analysed by the Trainer, the Trainee must ensure the Trainer is invited to be a co-author on the publication.

4.4. ADDITIONAL TRAINING

After you have completed your initial training and as your work progresses, you may require additional training. This could be in the application of more advanced techniques, in the operation of other equipment or in the access of additional areas. To arrange additional training, please contact the relevant Process Engineer.

4.5. EQUIPMENT LICENSES

Most pieces of equipment have a document detailing its Standard Operating Procedure (SOP) and a list of trained users.

Users may only use instruments and/or processes as authorised by the respective Process Engineer(s). MCN offers two levels of access as detailed below. If you require additional time on any instrument, please contact the relevant Process Engineer.

LICENSE GROUP	MAX HOURS/DAY	MAX HOURS/MONTH
Standard	8	32
Out of hours*	24	32

*Users who have out of hours licenses will be able to make bookings outside of the normal working hours (i.e. before 9am and after 5pm) in accordance with the MCN Out of Hours Work Policy (PQMS1-MCN-POL-0032). All other trained users will only be able to make bookings during normal business hours (9am to 5pm).

Note: Trained users are not permitted to train other users.

All equipment licenses will expire at the end of each year and a renewal reminder will be sent to all users late in the year with directions to renew the license. This ensures our user records are kept up to date. If more than three months have lapsed since you last used an instrument then you will be required to arrange a training session to refresh your memory of the instrument's operation and to bring you up to date with any changes in operating procedures.

5. ACLS – ONLINE BOOKING SYSTEM

The ACLS online booking system is used to book/access equipment and you must be a licensed user to access the booking system. It is MANDATORY that all equipment as shown in the table below be booked using ACLS (AC Lab Systems) prior to use in accordance with the MCN Access & Pricing Policy, Section C. For further information, please refer to the Access & Pricing Policy (PQMS1-MCN-POL-0027-V).

5.1. EQUIPMENT AVAILABLE TO BOOK AT MCN

AC/DC Sputtering	LS55 Luminescence Spectrometer
ALD - Fiji F200	MALDI
Artec 3D Spider	Malvern Naosizer
Bay 5 Vacuum Oven	Mask Aligner/NIL
Cleanroom AFM	MSA 400 Vibrometer
Confocal	NanoBuilder FIB Pre PC
Contact Angle Measurement Instrument	NanoFrazor
CytoViva Hyperspectral	Nanoprint 360
Design House PC1 and PC2	neaSNOM
Diamond Dep-1 (BOD)	Nickel Electroplating
Diamond Dep-2 (NY)	Objet 3D Printer
Disco DAD321 Dicing Saw	PC2Lab
DRIE 1-Si only	PDMS Lab
DRIE 2-Multi-purpose	PECVD
Dynatec Dicer/Scriber	PICO DEVELOP STATON
E-beam evaporator	PICO TRACK SYSTEM
EBL	Piranha Etch Station
EBL Coater	Plasma Asher
EBL data preparation PC	Polymer Glove Box(Yellow)
EBL Sample Preparation Fumehood	Polymer solar cell-thermal dep
Ellipsometer	Polymer Solar Cell-ALD
Ember 3D printer	Porous Silicon Etching

F&S Bondtec Wedge Bonder 5832	Profilter (Ambios XP200)
F50 Thin Film Mapper	RF/DC Sputter
FEG-SEM	Signatone Probe Station
FIB-SEM	Sputter AU
Glass Puller	Sputter Pt for FEG-SEM
Glovebox (Biolab)	Sutter Micropippette Puller
Gold Electroplating	SVCS Furnace B-dope
HF etch station	SVCS Furnace General
Hitech Furnace	SVCS Furnace P-dope
Hot Embosser	SVCS Furnace Silicon Nitride
IMP SF-100 WRITER	Tabletop SEM
Ionscope	UHF 120 Vibrometer
IPA Dryer	UV-Ozone Cleaner
Jandel 4-Point Probe Station	UV Flood Light Source
K$S Ball Bonder	UV VIS Spectroscopy
K&S Wedge Bonder	Wedge Bonder-West Bond 7476E
Light Field Microspectroscope	Zeta Potential Analyzer

Only appropriately licensed users will be able to make instrument bookings online through the ACLS booking system. Users who do not possess the appropriate license(s) or those requiring assistance from MCN staff need to contact the relevant Process Engineer to organise a booking.

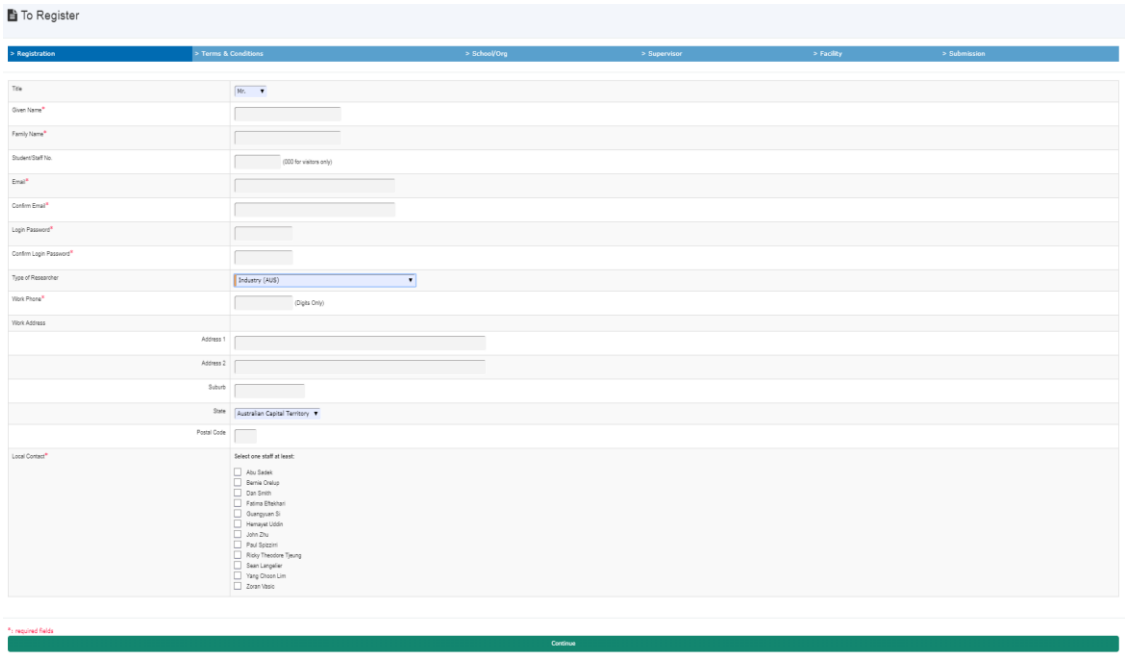
5.2. ACCOUNT REGISTRATION

All new MCN users should complete the user registration form on the MCN ACLS booking system http://bookings.mcn.monash.edu/. It is the user's responsibility to ensure that you or your supervisor has sufficient funds to cover the cost of all bookings.

5.3. COMPLETING THE ACLS ONLINE REGISTRATION FORM

Please ensure you fill in all five required pages of information inclusive of personal information (please use the email address from the universities or the institutes) terms and conditions, school/organization information, supervisor information and MCN facilities requested, before submitting the registration form.

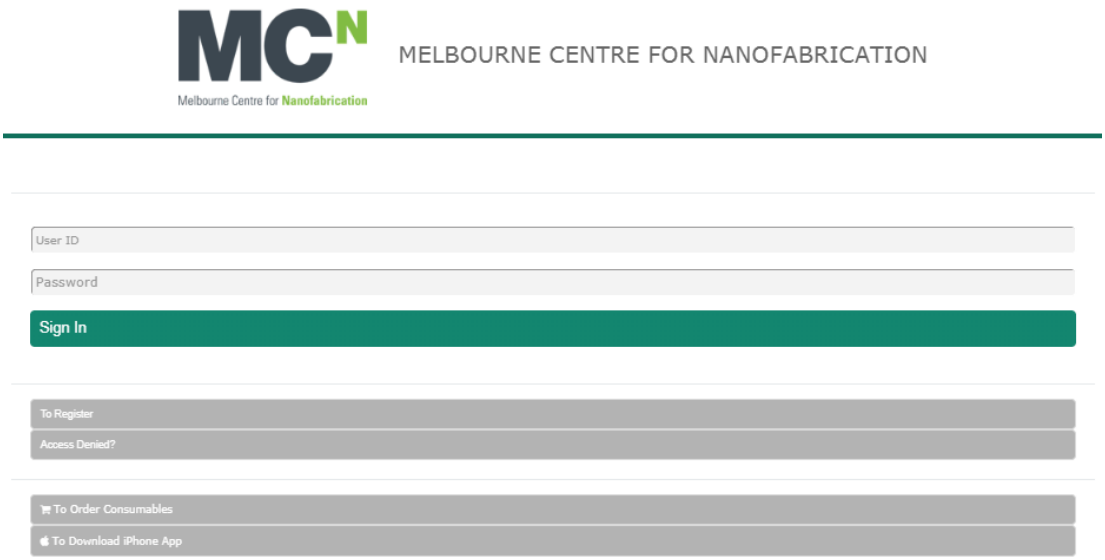
All new user account requests will be sent to the MCN Facility Manager for verification and approval. All users will receive an automated email notification containing their selected username and password once their user accounts have been approved and activated.



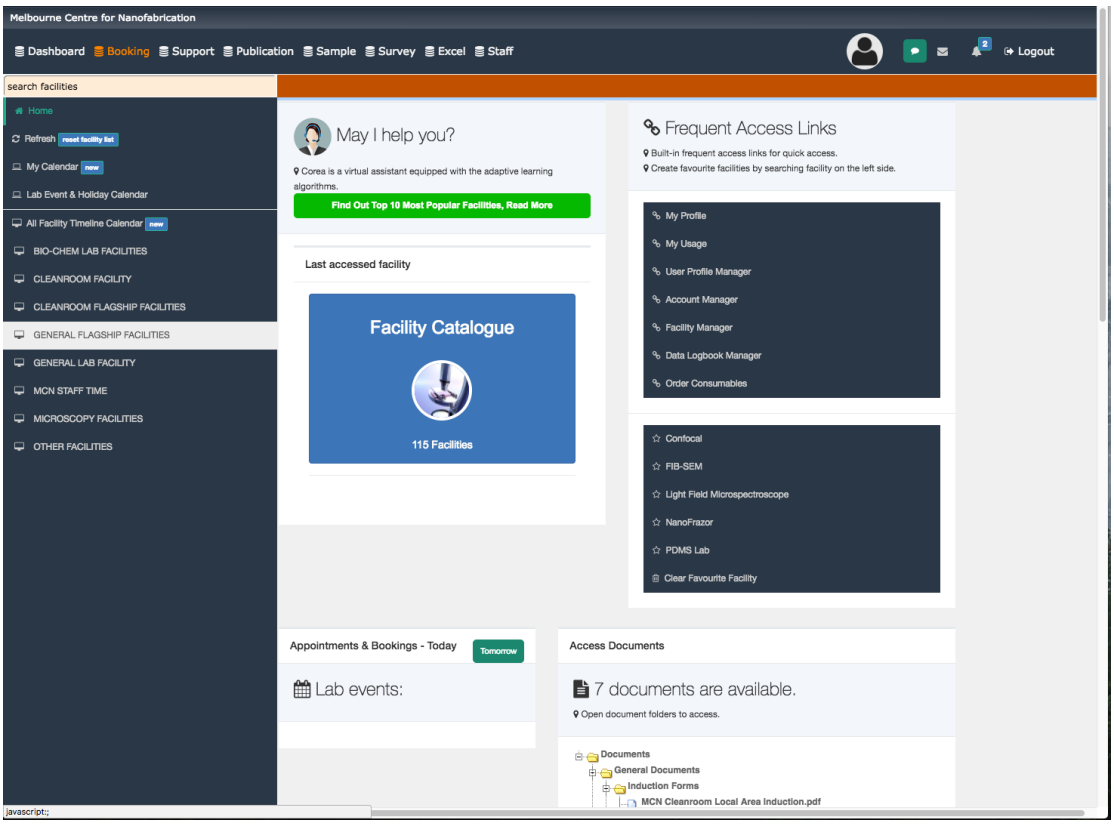
Screenshot of MCN ACLS online user registration form

5.4. ONLINE INSTRUMENT BOOKINGS

To make an online booking, log in to the MCN ACLS system http://bookings.mcn.monash.edu/ using your username (email address (from universities or institutes) used for registration) and password. A screenshot of the login screen for the MCN ACLS system is shown below for reference.

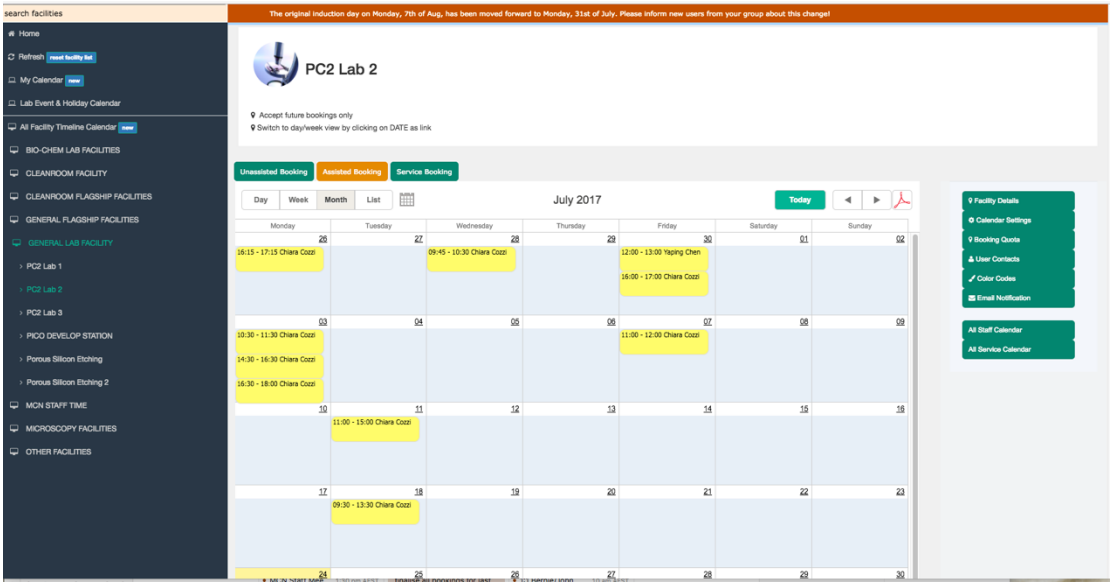


After logging in, you should see a few tabs on the top of the window below Melbourne Centre for Nanofabrication. One of them is Booking. Click on this tab. Select the instrument (from the drop down list) and day that you would like to book, and select “Weekly” (to view the booking calendar for the whole week around the date selected), “Daily” (to view the booking calendar for only the day selected) or “Session” (to view the booking calendar for only the day selected and to record any notes specific to your booking).



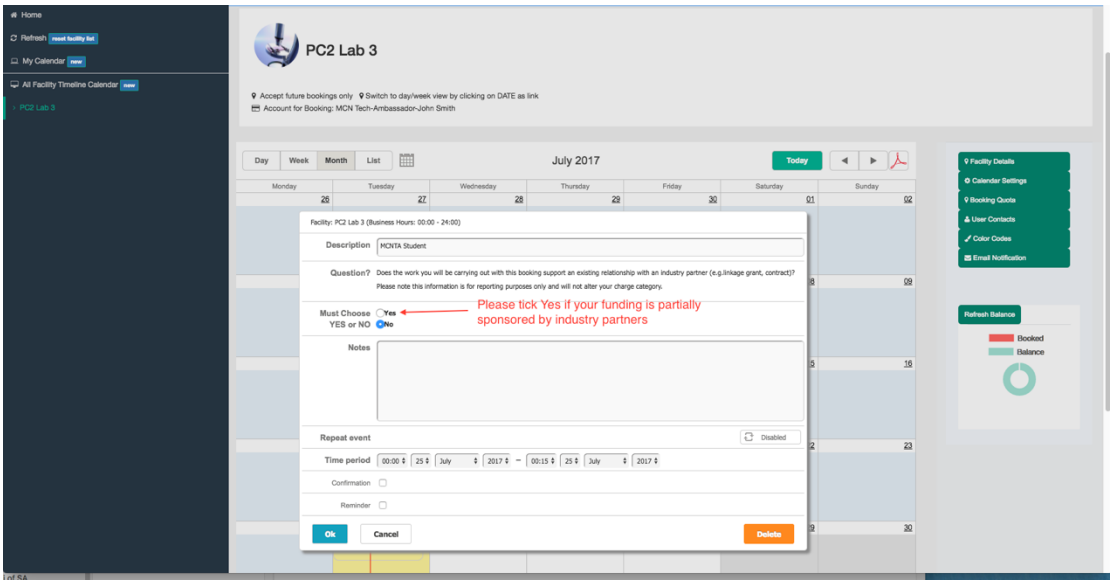
5.5. FACILITY BOOKINGS:

Facility Booking is to book events for yourself. Select Facility, Day, Week or Month, click on the date or the time that you plan to make a booking



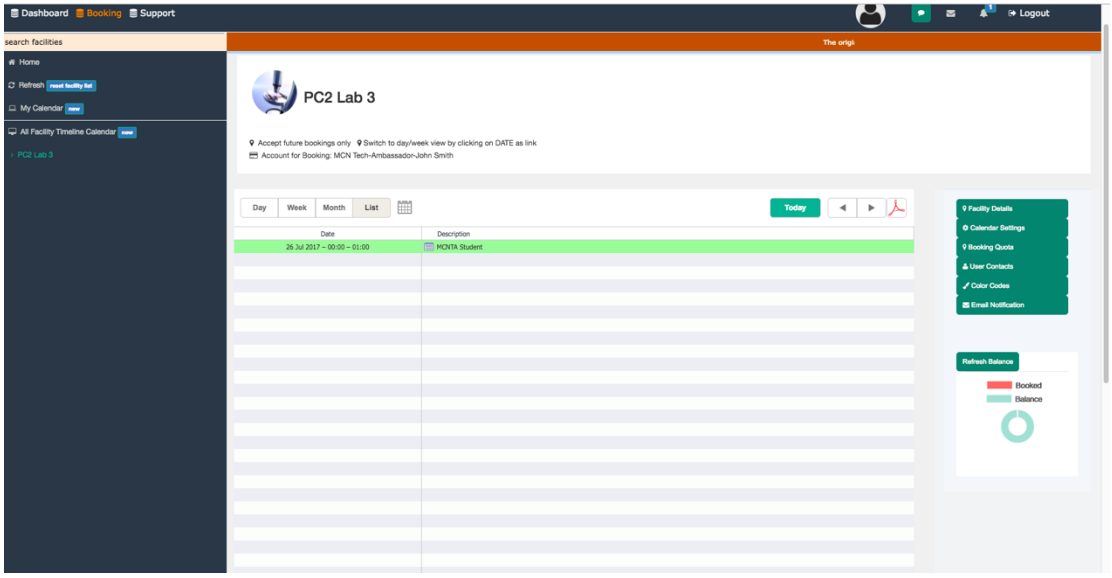
Screenshot of MCN ACLS "Facility Booking" page

Color codes gives you a quick presenation about the different types of bookings. The click-to-expand information box on the right handside shows you the booking controls and permissions.



The system blocks the dates in blue, which you are not permitted to book. Clicking on those 'blocked dates' won't have any effects. You can easily navigate the calednar to day and week view. '**List'** view shows you the summary of bookings made in the selected month.

Please tick the Yes Box if your booking is for works partially funded by industry partners.



You are able to print the calendar to PDF in any views by clicking on ‘PDF’ button.

5.6. SAVING BOOKINGS:

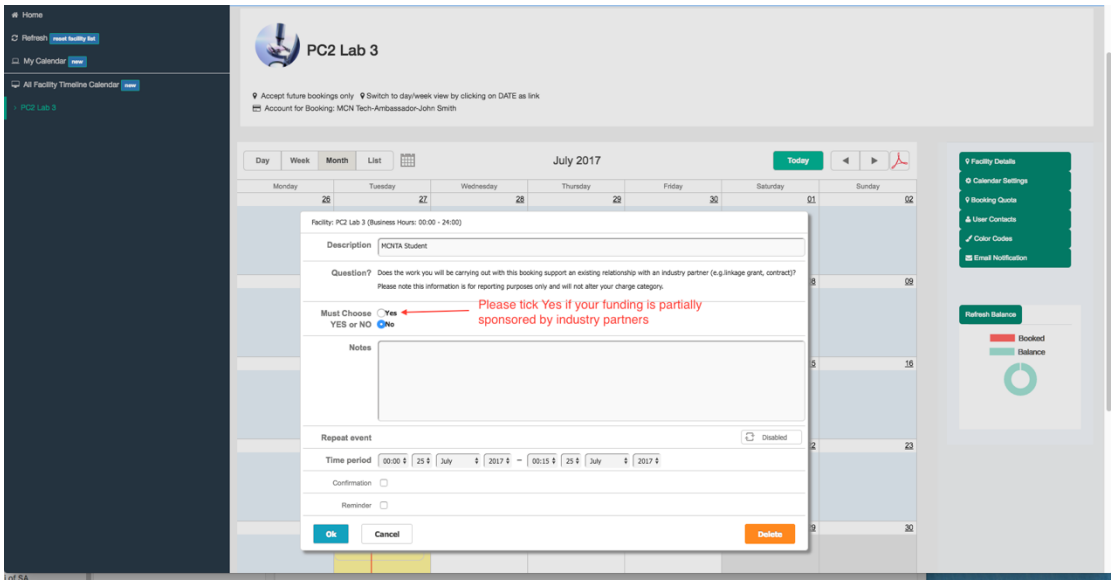
Bookings will be saved automatically after you click the Blue OK button.

Each booking tool comes with its own template, but the method of creating, editing and saving bookings is the same.

Booked events can only be changed or cancelled through its own booking tool. For example, individual training bookings can be changed only through the ‘Individual Training Booking’ tool.

5.7. BOOKING TEMPLATES:

User Booking:



5.8. CANCELLING AN ONLINE INSTRUMENT BOOKING

Bookings can only be cancelled a minimum of 24 hours before your booked session or by arrangement with a Process Engineer. The procedure for cancelling a booking more than 24 hours in advance is similar to the procedure for making a booking. Navigate to the day of your booking as above and simply uncheck the boxes against the timeslots previously reserved.

5.9. ACLS BOOKING RULES

Please note that users are billed based on booked time. Kindly observe the following simple rules so that we can optimize access for everyone.

- You must attend, ON TIME, every session you are booked for, unless there are exceptional circumstances beyond your control (such as illness).
- If you are unavoidably delayed in starting a session, you MUST contact the relevant Process Engineer. Users who fail to notify MCN of a delay within 30 minutes of their scheduled start time may have their session reassigned to another User. Persistent lateness may result in a reduction or suspension of booking entitlements.
- You must fill in the instrument logbook at the start and end of your session. Note any unusual conditions or equipment problems. Report serious problems in writing and in person to the Process Engineer or Facility Manager if the Process Engineer is not available. Failure to fill in logbooks correctly can result in a reduction in your booking entitlement or license.
- Bookings are NOT transferable, i.e. equipment can only be used by the person who booked it.
- If instrument time is available, you can extend your session outside the booked time (subject to your license) but please contact the Process Engineer to have the booking adjusted.
- Bookings must allow sufficient time for clean-up and data transfer prior to the next user.

5.10. PROCESS ENGINEERS AND TRAINERS

The Process Engineer is the staff member responsible for overall management of the instrument, its performance and maintenance. This includes training and issuing of licenses; operating procedures, bookings, day-to-day operation and maintenance of the instrument.

6. STORAGE OF MATERIALS AND DATA

6.1. SAMPLES AND MATERIALS

6.1.1.INSTRODUCTION AND AIM

MCN prides itself in providing state of the art Nano-fabrication capabilities to our customers in a safe and clean facility. The purpose of this policy is to provide guidance information for accessing “User Sample Storage” area in Chase 7 of Cleanroom Class 100. This document will establish the guidelines to effectively implement a rostered User Sample Storage throughout the year.

6.1.2. POLICY

MCN users are permitted to store samples in the cleanroom only with prior consent to allow for mid-stream processing and only in dedicated containers in “User Sample Storage” area in the Chase 7 of Cleanroom Class 100.

The following policies apply:

- Users must first register at the reception by filling the required information in the log sheet of “List of Users with a Storage Container in Chase 7”
- Upon successful registry, user will be provided with a yearly color-coded sticker and a registry label to be filled with their details.
- The registry label with the sticker must be attached visibly to the selected empty container in Sample Storage Area in Chase 7.
- Only **one container** per user is allowed. Users can switch their container to a larger one at any time and transfer their Registration Sticker to the new container.
- Stickers must get renewed **Before** MCN’s Annual Cleaning in early November. The new stickers can be obtained from the reception upon MCN announcement.
- A new “List of Users with a Storage Container in Chase 7” must be accumulated per year.
- MCN staff will sort the Sample Storage Area annually during MCN annual cleaning.
- Any container with an old year sticker will be moved to the Chase 6 White-tag Sorting Area.
- The owners, the user and the supervisor, of the white-tagged containers will be contacted for collection of their samples.

6.1.3.APPENDIX

- List of Users with Storage Container in Chase 7

List of Users with a Storage Container in Chase 7

Name	Organization	Supervisor	Email	Mobile	Setup Date	Expiry Date

- "Registry Label" Template

NAME:

ORGANIZATION:

EMAIL:

Yearly Sticker HERE

- Yearly Color-Coded Example (2017)

MCN can assist you if you need to store your samples under special conditions, for example, vacuum or inert gas.

6.2. DATA STORAGE AND TRANSFER

Data storage is the responsibility of users. Users must remove their data from MCN computers within a reasonable timeframe, (fortnightly). MCN encourages researchers to use Eduroam or CloudStor to transfer research data from the MCN computers to their own storage media.

MCN **does NOT permit the use of personal memory sticks (USB's)** on any instrument computer. Communal memory sticks are available from the Process Engineers.

7. LABORATORY SAFETY

These Laboratory Safety guidelines comprise part of the Facility OH&S Induction that all users are required to complete. These apply to all personnel using the facility. Individuals will receive training and competency based assessment for specific equipment at the MCN, in addition to associated information, policies and procedures.

MCN follows the Monash University OH&S Risk management protocols. For general information, refer to the following website

http://www.monash.edu/ohs/information-and-documents/risk-management

When any hazard is identified with either your samples or the experimental processes to be used, a Risk Assessment (RA) must be prepared and signed by the user, Supervisor and Facility Manager. Uncontrolled hazards must be reported using the Monash University online Incident and Hazard Reporting system (S.A.R.A.H)

http://www.monash.edu/ohs/reporting

A Standard Operating Procedure (SOP) must be prepared for every activity, when a suitable SOP does not already exist within MCN. In addition, an assessment of hazard level (or Risk Assessment) should be performed for all tasks and the level of risk reduced where possible to medium and low levels

SOP Templates contact MCN Process Engineers/Facility Manager. All Risk Assessments and SOPs for processes with risks that remain as medium or high must be checked and counter-signed by the Safety Officer or Deputy Safety Officer.

7.1. GENERAL RULES

- If in doubt, always seek help!
- Mobile phones may be used however they should not be kept underneath cleanroom gowns where they cannot be accessed without opening the gown up.
- Eating, chewing, drinking is strictly prohibited within the labs and cleanrooms.
- Headphones are not permitted while in the labs or cleanrooms.
- Only operate equipment for which you hold a valid license.
- All doors and emergency exits must be kept clear.
- Do not tamper with fire extinguishers, first aid kits and other emergency equipment.
- Children under 16 are not permitted in any laboratory unless by prior agreement with the Facility Manager.

- No running in the building.
- MCN is equipped with very sensitive smoke and fire detectors. Any work that may generate smoke or dust must be carried out in a fume cupboard.
- MCN is a NON SMOKING area. The patio area outside the kitchen is also a NO SMOKING area. People wishing to smoke should move at least 30m meters away from the building.
- A list of emergency contact personnel is displayed on the MCN Emerroles posters which are located on notice boards throughout the building.
- Closed toe footwear must be worn in all laboratories and cleanrooms. Ballerina shoes and runners which are not fully sealed (e.g. mesh type runners) are not appropriate for labs.
- Food and drink are not to be consumed anywhere except in the upstairs office areas, MCN tea room and the Board room. Hot desk users may consume drinks at the desk (i.e. not in the labs) so long as the bottle or cup has a cap.

7.2. PERSONAL PROTECTIVE EQUIPMENT (PPE)

All personal protective equipment is supplied by the MCN and must be worn when working in MCN laboratories. Additional PPE provided in some areas (e.g. cleanroom garments, laboratory coats, long trousers, protective aprons, safety glasses, full-face safety visor, gloves) must be worn wherever indicated. Consult with an MCN Process Engineer if unsure.

Please wash gloves and remove them before touching pens, notebooks, door handles, light switches, phones or other communal items in ALL labs. Due to latex sensitivities, the MCN no longer provides latex gloves for laboratory use.

As an alternative, Nitrile gloves are available in all areas but ensure that you have established the chemical suitability of the gloves that you use prior to working with chemicals. Personal protective clothing and equipment must not be worn in office areas, toilets or meals areas.

7.3. BIO – CHEM LABORATORY USE

Conduct for use of the non-Cleanroom labs is outlined in the Biology/Chemistry Laboratory Usage Policy (PQMS1-MCN-POL-0030-V).

8. CLEANROOM USE

8.1. ACCEPTABLE - CLEANROOM ITEMS

Special Cleanroom notepads and paper are available on request (located in the cleanroom store – ask a Process Engineer to access the store).

Equipment should be checked for cleanroom compatibility and properly cleaned (decontaminated) before being taken into the cleanroom. MCN staff must be contacted if any instruments or material is to be taken into the cleanroom. Contact MCN Staff if you have any queries before entering the cleanroom.

8.2. PROHIBITED - CLEANROOM ITEMS

Regular paper products of any description

No food or drink

No fibrous materials or natural products (eg wood etc)

8.3. CHEMICAL USAGE

Before any chemical that is not currently available at the MCN is brought into the cleanroom, MCN staff must be consulted, and appropriate procedures must be adhered to.

8.4. ENTRY INTO CLEANROOM

Full cleanroom apparel must be worn in all areas of the cleanroom. This consists of full suit, hood, overshoes, safety glasses and gloves. Users must be fully conversant with the gowning procedure prior to entry – training is provided as part of the Cleanroom local area induction.

DO'S	DON'Ts
• Change gloves whenever they get dirty or torn	• Lean on equipment
• Pay attention to safety signs and protocols	• Touch building hardware, oily machinery or Wafer loading areas
• Read all chemical labels including waste labels to ensure that you are disposing of waste into the correct drum	• Touch your face or skin with gloves on
• Report defective clothing to the cleanroom staff	• Use paper, pencils or markers that leave dust or lint
• Use a fresh pair of gloves whenever handling wafers	• Wear cosmetic, powders or colognes
• Use cleanroom paper and dust free ballpoint pens	
• Wipe down wafer handling area with isopropanol/methanol	

9. CHEMICAL HANDLING

9.1. FUME CUPBOARDS

Work with the sash open far enough to perform the procedure comfortably.

Do not leave any unnecessary glassware, chemicals, and equipment in the fume cupboard.

Never use a fume cupboard if the extraction fan or backwash is not working. Report any faults immediately to a staff member.

9.2. CHEMICALS

In accordance with the general rules of MCN, every operation involving the use of a hazardous substance or dangerous good must be assessed for risk and Users must have signed and completed a Risk Assessment in order to perform process. MSDS's must be present for all procured reagents and chemicals produced in quantities above 100g. All processes must be carried out in accordance with the Risk Assessment. No new processes, or alterations to existing processes, will be carried out without consultation with the Facility Manager and subsequently generating a new RA.

9.3. GENERAL CHEMICAL HANDLING

- NEVER 'experiment' or alter any processes without consulting a suitably qualified person
- ALWAYS wear PPE (e.g. face shields, gloves, acid-proof gowns etc.) as specified in the RA
- NEVER mix chemical waste since this may give rise to hazardous compounds and/or reactions. Ensure that all chemical wastes are disposed of correctly (refer to the MCN Waste Management Plan)
- All storage containers including beakers, bottles and process tanks must be properly labelled and labels should be replaced when damaged or defaced
- Labels must state the chemical name (e.g. acetone), hazard class (e.g. flammable) symbol. Where it is not practicable to label the container, a warning sign with the same minimum information may be placed adjacent to the container, such that there is no doubt as to the contents.
- When labelling etches use the descriptive name (pump etch, mesa etch etc) and list the constituents
- Certain chemicals react violently when mixed and must not be stored together (e.g. sulphuric acid and hydrogen peroxide). Others may react to give hazardous products and these must not be stored together either (e.g. cyanides and acids).
- DO NOT use incompatible substances in the same workstation. Refer to the compatibility charts posted on the storage cabinets.
- Every process should be designed so as to eliminate exposure of personnel to hazardous materials and reactions. Where this is genuinely not possible, advice from Monash OH&S must be obtained before the process is used
- Medical advice should be sought at the first signs of illness or distress.
- Appropriate hazard warning signs should be placed at areas where chemicals are used or stored and on or near equipment containing chemical substances
- DO NOT carry glass bottles or containers by hand. Always use a carrying cradle.

- It is important that all personnel know the substances they are using, their properties, and modes of action on the body and the early symptoms of health damage.
- All glassware is to be washed using the Miele laboratory dishwashers located in either the cleanroom or Bio/Chemistry laboratory.

9.4. EMERGENCY STOP BUTTONS

All laboratories are fitted with an Emergency Stop button. Pressing this button will cut all power to GPOs in these rooms. Fume cupboards are also fitted with Emergency Stop buttons that will cut power to that fume cupboard. The Emergency Stop Buttons are located near the door and light switches for the lab and near the emergency exits in each of the cleanroom bays.

9.5. UPS POWER

All red general power outlets (GPOs) are supplied from by an emergency generator located in the electrical plant room.

9.6. OXYGEN SENSORS AND ALARMS

There are different alarm systems installed within the MCN facility. It is vital that users understand these systems and the appropriate response to these alarms.

There are two types of gas alarms within the cleanrooms. One is to indicate a toxic gas leak and the other is to signify a low oxygen level possibly caused by a displacement of oxygen from an inert gas leak. The status is indicated by a system of red and amber lights with no lights illuminated signalling no detection. Refer to the Alarm section of this document for further information. If an oxygen alarm is operating, you must not enter the area.

9.7. SHARPS AND BREAKAGES

All broken glassware and other sharp objects are to be placed into the sharps, sludge waste bucket or chemically contaminated wheelie bin. Broken glassware does not need to be decontaminated by the user, however, MCN staff will need to be alerted to the contaminant so that appropriate action may be taken.

10. LIQUID NITROGEN

(Not currently available at MCN). Liquid nitrogen may be used in many parts of the MCN and its risks are to be understood by all users. Liquid nitrogen can cause severe burns and the eyes are particularly vulnerable. Always wear the apron, full-face visor, insulating gloves and closed footwear when filling dewars from the liquid nitrogen storage vessels or when transferring and pouring liquid nitrogen from the dewars. Runners with mesh uppers and sandals are not acceptable when handling liquid nitrogen.

- Never handle liquid nitrogen whilst wearing disposable gloves.
- Liquid nitrogen boil-off can displace oxygen so there is a risk of asphyxiation, thus minimize spillage and decant in well-ventilated areas.
- Thermal shock can cause materials to fracture: only use the provided dewars or talk to staff if an alternative is required. As liquid nitrogen gasifies, there is a large volume increase - never store liquid nitrogen in sealed vessel.
- Liquid nitrogen must not be removed from MCN. Be aware that liquid nitrogen will cause liquid oxygen to form on cold surfaces by condensation from the atmosphere.

10.1. COMPRESSED GASES

The following compressed gases are within MCN:

- Nitrogen
- Argon
- Oxygen
- Tetrafluormethane
- Trifluoromethane
- Sulphur hexafluoride
- Ammonia
- Chlorine
- Silicontetrachloride
- C4F8
- Helium
- Forming Gas – 4% Hydrogen in Nitrogen
- Hydrogen

10.2. GAS LEAKS

All labs and cleanroom bays have reticulated nitrogen supplies. Risk of asphyxiation can occur if there is a major nitrogen leak and the air conditioning is not operating, for example, during a power failure.

11. HAZARDS AND INCIDENTS

Any occurrence that leads to or potentially leads to injury or danger to health must be reported to the Facility Manager. The Incident Report Form should be completed online via Monash Safe And Risk Analysis Hub (S.A.R.A.H) with the aid of the MCN Process Engineer/Facility Manager.

http://www.monash.edu/ohs/reporting

11.1. CHEMICAL AND BIOLOGICAL SPILLS

Chemical spill kits are located throughout the labs and cleanrooms. Biological spill kits are located in the PC2 and re- configurable labs. The locations will be pointed out during the induction; contents and instructions for the use of spill kits are located on the kit however, if in doubt, consult with an MCN staff member.

YOU MUST NOT ENTER OR REMAIN IN A LABORATORY IF YOU SUSPECT THE AIRCONDITIONING IS INOPERATIVE.

***Note**: Contact an MCN staff member if gas cylinders need to be changed. Users must not attempt to change any cylinders. In all cases, if there is doubt as to the hazards or of the method of disposal of any spill, evacuate the area and alert MCN staff.*

11.2. INCIDENT REPORTS

Significant spills requiring clean-up are classified as Incidents and must be reported immediately to the Facility Manager. An online incident report should be completed to determine if it can be prevented in future.

If a spill does occur it is important that all users recognise the hazardous properties of the chemicals. If in any doubts as to the correct method of dealing with a spill, evacuate the immediate area and obtain advice from the Facility Manager. The area should be isolated and users alerted to the spill and prevented from entering the area.

It may be possible to deal with small spills (eg. 2L) using the spill kits available however; this will depend on the nature of the reagent. Larger spills may require a response by external contractors or the HAZMAT team of the Fire Brigade. Under these conditions, the building would normally be evacuated.

Where larger spills occur or particularly hazardous chemicals (e.g. hydrofluoric acid) are involved, evacuate the area and contact the Facility Manager to co-ordinate the clean up. Minor spills may be dealt with by using one of the methods recommended below.

11.3. ACIDS

Special requirements must be followed in the event of a hydrofluoric acid (HF) spill. In the event of an HF spill, immediately contact an MCN staff member.

If a minor acid spill occurs (other than HF and low volume) in the fume hood, put on protective clothing as recommended in the MSDS and flush the spill with copious amounts of water, turning on the taps and wash-down facility as well. Note that concentrated acids will generate a great amount of heat when mixed with water, so it is important that large quantities of water are used.

If the spill occurs on the floor, follow the procedure detailed below:

- Wear appropriate PPE (as used during the handling of the reagent)
- Use the neutralizer spill kit to react with acids/bases rendering them harmless.

- Once neutralized, absorbent pillows may be used to contain/absorb the spill
- The absorbent spill kit should be used to collect the neutralized liquid for removal
- When all liquid is absorbed, place pillows and socs in a hazardous waste bag, seal and label.
- Absorber material should be put back in the spill response bucket for removal
- Wipe/Mop the floor with a damp cloth

Care should be exercised in the Class 100 cleanroom especially where a grill perforates the raised floor as the solution can seep through to the sub floor area. In this situation, please contact an MCN staff member to coordinate the clean-up, paying particular attention to electrical sockets.

11.4. HYDROFLUORIC ACID

Hydrofluoric acid is managed using certified training and the management policy found on the Monash web site at http://www.monash.edu/ohs/information-and-documents/all-information-sheets/hydrofluoric-acid

SOLVENTS

The major hazard of a solvent spillage is fire, but some solvents may have narcotic or other physiological properties as well. Consult the appropriate Material Safety Data Sheets if in doubt as to the hazard of any specific compound. When dealing with large solvent spills, breathing apparatus MUST be worn, therefore evacuate the area and alert MCN staff. At all times bear in mind the risk of fire, therefore, immediately ensure that all sources of ignition within a radius of 6 metres are extinguished or turned off. This includes all electrical equipment. Evacuate the area. If it is safe to do so, follow the instructions for acid spills.

11.5. SOLIDS

Collect solid spills by careful brushing and always wear a dust mask/breathing apparatus if the solid is toxic or irritant. Collected solids should be treated with care and placed in a hazardous waste bag, which should be sealed and labelled with contents, origin and dated. MCN staff via Chemsal may then dispose of the bag and contents. Solid wastes contaminated with a known dangerous goods class can be disposed of using the solid waste DG wheelie bins found on site.

11.6. EMERGENCY FIRST AID

Any chemical contact is potentially hazardous and it is vital to act quickly. Flood the affected area with water, unless the MSDS specifically says not to, for at least 10 minutes and seek assistance from a first aider. If liquids, particularly corrosive or toxic liquids, are spilled on the clothes, immediately flood with water and remove the clothing at the same time. (Any HF spill requires special attention and should be immediately referred to emergency personnel.) Beware of spreading the chemical to unaffected areas of the body. Small splashes can usually be effectively dealt with just by washing, but with a large amount of contamination, medical advice MUST be sought immediately.

11.7. EMERGENCY EYE WASH AND SHOWERS

Emergency showers and eyewashes are located within every clean room bay and near every door in the bio-chem lab with the exception of G42. The showers and eyewashes are connected to an internal alarm system and use will trigger the alarm to alert staff to an emergency.

If activated accidentally, please notify the facility manager immediately to stop the alarm.

In any case, seek medical advice to ensure all proper treatment as it is important to realise that some chemicals may be absorbed through the skin and may give rise to toxic effects some time later. Exposure to certain chemicals (e.g. solvents) may present no symptoms at the time of exposure but may lead to serious skin problems after a period of time or repeated exposure. Certain highly corrosive or toxic chemicals have specific treatments (e.g. hydrofluoric acid burn calcium gluconate gel). Note that these are only first aid measures and must be treated as such.

Eye contamination by any chemical is very serious. Flush the affected eye with copious amounts of water, holding the eye open and with the head in such a position that the chemical is not washed into the other eye. Do not attempt to remove contact lenses at this point.

Severe damage to the eyes can occur very quickly and may be irreversible. Seek assistance from a first aider and/or call for assistance on 333.

12. REFERENCES

12.1. INTERNAL

N/A

12.2. EXTERNAL

www.nanomelbourne.com/access- Contact Melbourne Centre for Nanofabrication

http://bookings.mcn.monash.edu/ ACLS Online Booking System

http://www.monash.edu/ohs/information-and-documents/risk-management - Monash University OH&S and Risk Management System

http://www.monash.edu/ohs/information-and-documents/all-information-sheets/hydrofluoric-acid - Hydrofluoric Acid Management

13. DOCUMENT HISTORY AND CONTROL INFORMATION

DOCUMENT HISTORY			PQMS1-MCN-POL-0025-V3
Version no.	Date of Issue	Reviewed by: name	Amendments
1	26/07/2017	Bernie Orelup	Created to PQMS format
2	26/07/2017	Sean Langelier	Some policy modifications
3	26/06/2018	Sean Langelier	Removed Appendices and updated hyperlinks