

ANFF-Victoria Access and Pricing Policy

PQMS1-MCN-POL-0027-V21

1. INTRODUCTION

The purpose of this policy is to provide guidance and pricing information for accessing the Melbourne Centre for Nanofabrication (MCN) and other NCRIS-funded facilities which comprise the Victorian Node of ANFF (ANFF-Vic).

2. ORGANISATIONAL MATTERS AND POLICIES

The ANFF-Vic is one of 8 collaborative nodes of the Australian National Fabrication Facility (ANFF), a national network of micro- and nano-fabrication laboratories established through the National Collaborative Research Infrastructure Strategy (NCRIS).

As a condition of its funding support through NCRIS, the external user access to the node must be consistent with the general principles laid out in the national ANFF access and pricing policy.

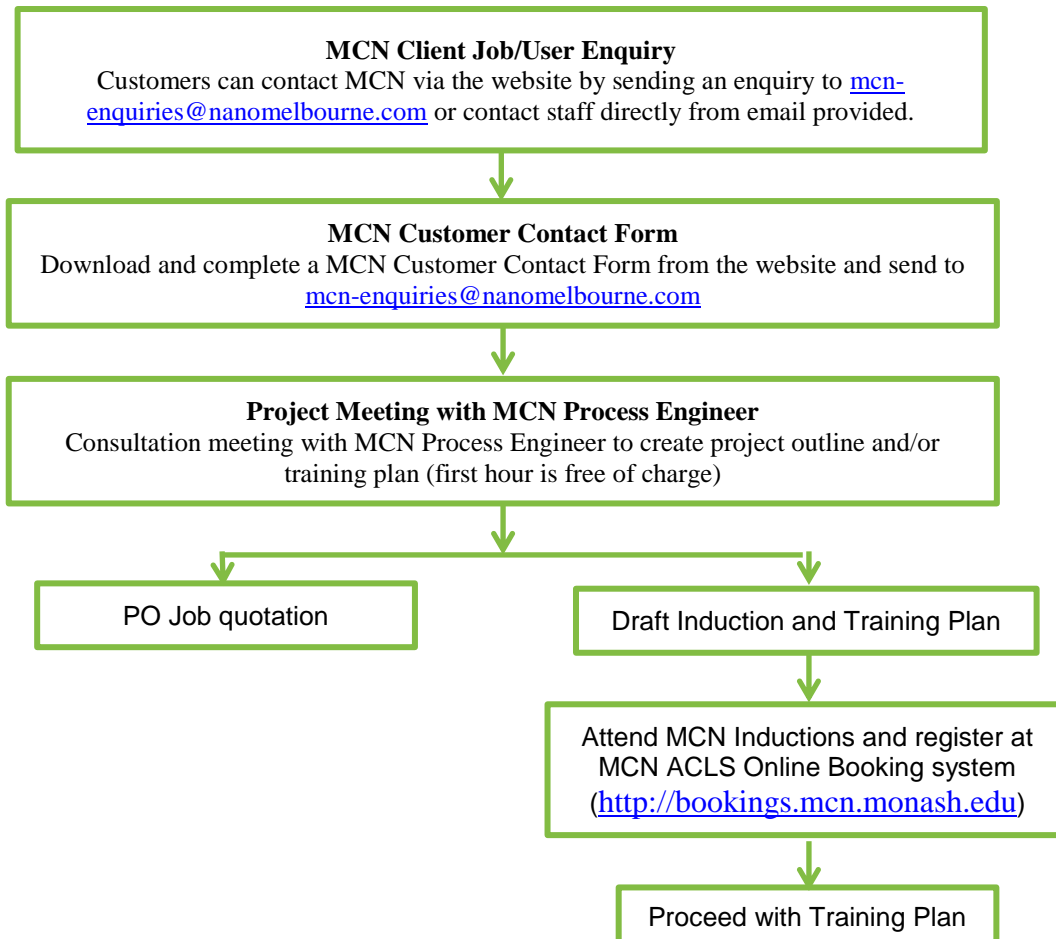
The MCN is operated by Monash University and as a result, all users must satisfy all Monash University policies and procedures including OH&S, out-of-hours and any other specific procedures of the MCN.

3. ACCESS FOR NEW USERS OR PROCESSING REQUESTS

1. The MCN Client Services Manager is the first point of contact for all potential users of this node. Process engineers at MCN can also be contacted directly by phone or by email (<http://nanomelbourne.com/access>), or a general request can be submitted to the process engineers at mcn-enquiries@nanomelbourne.com. Users may be directed to the process engineers via ANFF headquarters or via other nodes of the ANFF.
2. The most relevant process engineer (depending on nature of the project) will be assigned to assist each new user, and will liaise with other process experts at MCN to assess the scope and viability of the project(s) that is (are) proposed.
3. Once feasibility of the project has been established with a process engineer, a new user registration form (<http://bookings.mcn.monash.edu>) should be completed as a formal application for accessing the node (less than two pages). This form allows the user to briefly describe the work, the expected outcomes, funding source if applicable, the equipment and staff resources required (including estimated training time). The process engineer can assist the user in the preparation of this form if needed.
4. Submitted proposals from a new user will be processed by the Client Services Manager, by checking the completeness of contact and billing details, arranging for site induction if necessary, and provision of an account and password to the user for access to the online booking system.
5. If the work cannot be scheduled within a reasonable period due to other commitments at MCN, the application may be referred to the Access & Pricing Committee, chaired by the General Manager.
6. If the job proposal does not involve work in the MCN by a new user, the work will be undertaken by MCN staff at a price as set out in section C below.
7. In the case of a User Proposal for a new user, the user will be required to attend and pass the standard MCN OH&S induction procedure before they begin any work in the MCN.

8. In addition to other requirements, the user must make themselves aware of all MCN operational policies, as provided in the MCN User Manual or published online at <http://nanomelbourne.com/access>.
9. The MCN reserves the right to revoke job/user approvals with seven days written notice.
10. The MCN Access and Pricing Committee is responsible for ensuring that access to the node is in accordance with guidelines set out in the national ANFF access and pricing policy and as requested by the Department of Industry.
11. The MCN Access and Pricing Committee is composed of the ANFF-Vic/MCN Scientific Director, the General Manager, the ANFF CEO, the MCN Operations Manager (Chair) and representatives from the major stakeholder groups.
12. The MCN Access and Pricing Committee will review and advise the MCN Collaboration Committee on all pricing and access matters.

Below is a flowchart indicating the required access protocol



4. PRICING STRUCTURE

ANFF-VIC: MELBOURNE CENTRE FOR NANOFABRICATION (MCN)

Flagship Equipment		
	Academic/public funded	Industry
Vistec Electron Beam Lithography**	\$120 / hour (\$960 cap per 24hrs)	\$300 / hour (\$2400 cap per 24hrs)
Direct Write Photolithography Heidelberg MLA-150	\$120 / hour	\$300 / hour
Seki Diamond Deposition Systems	\$90 / hour (\$720 cap per 24hrs)	\$225 / hour (\$1800 cap per 24hrs)
Nanofrazor: Thermal Scanning Probe Lithography; direct laser sublimation**	\$90 / hour	\$225 / hour

Tier 1 Equipment (Sorted by capability area)		
	Academic/Public funded	Industry
PRICING	\$90 / hour	\$225 / hour
Characterisation	Atomic Force Microscope (Bruker Dimension Icon)	
	Atomic Force Microscope (Bruker Dimension Icon-PFTUNA)	
	Bio Atomic Force Microscope (JPK Nanowizard II)	
	FEG-SEM (FEI NovaNano SEM 430)	
	FEG-SEM (FEI Apreo) <<coming soon>>	
	FIB-SEM (FEI Helios Nanolab600 Dual Beam FIB-SEM)	
Etching	Etcher 1 (Oxford DRIE – Bosch)	
	Etcher 2 (Oxford RIE – General)	
	Etcher 3 (Oxford Plasmapro Estrelas DRIE – Bosch) <<on order>>	
	Etcher 4 (ULVAC NLD-570 DRIE) <<coming soon>>	
Lithography	Mask Aligners (SUSS MA6 and EVG6200)	
	Nano Imprint System (EVG 520 IS)	
	Phabler (PhabeR-100C)	
	Nanoscribe (GT2)	
	Direct Write UV (IMP SF-100)	
Thin Film Deposition	ALD Systems (Cambridge Nanotech ALD FijiF200 & Savannah S100)	
	Electron Beam Evap (Intlvac Nanochrome II e-beam) **	
	Electron Beam Evap (Angstrom) ** <<coming soon>>	

Electron Beam Evap (ULVAC ei-5 dual source) <<coming soon>>
Furnace Stack Tube #4 (Silicon Nitride LPCVD)
Furnace Stack Tube #1 & #2 (Phosphorus/Boron Bubbler Doping)
Nickel Electroplating (Digital Matrix SA1000)
PECVD (Oxford Plasmalab 100 PECVD)
PECVD (Oxford PlasmaPro 100 PECVD System) <<on order>>
Sputter Systems (Intlvac Nanochrome & Anatech Hummer BC-20) **
Sputter System (AJA Combinatorial) <<coming soon>>

Tier 2 Equipment (Sorted by capability area)		
PRICING	Academic/Public funded	Industry
		\$60 / hour
Bio Capabilities	3D Printer (Stratasys J826)**	
Characterisation	Hyperspectral Imaging (Cytoviva Hyperspectral Imaging System)	
	Laser Doppler Vibrometers (Polytec MSA-400 & UHF-120)	
	Laser Confocal Scanning Microscope (Leica Stellaris 5)	
	Microspectrometer (Nikon Instrument with Ti-U and Princeton Lightfield)	
	Near-field scanning optical microscope (NeaSNOM)	
	Optical Profilometer (Bruker Contour GT-I)	
	Spectroscopic Ellipsometer (J.A.Woolam M-2000DI)	
	Tabletop SEM (Hitachi TM3030 SEM with Oxford EDX)	
	Confocal Raman Microscope (Witec Alpha300 M+)	
	Profiler Stylus (Bruker Dektak XT-A)	
	FTIR (Perkin Elmer Spectrum 3) <<on order>>	
Etching	Anodic HF Etcher	
Packaging	Dicing Saw (Disco DAD3350)**	
	Wire Bonders (F&S Bondtec 5832 Ball/Wedge)	
Thin Film Deposition	Hitech Oxidation Furnace (\$480 Academic / \$1200 Industry 24hr capped)	
	Furnace Stack Tube #1 & 2 (Phosphorus/Boron solid source Doping)	
	Furnace Stack Tube #3 (general purpose)	
	General Purpose Vacuum Chamber Furnace <<coming soon>>	

Tier 3 Equipment (Sorted by capability area)		
	Academic/Public funded	Industry
PRICING	\$40 / hour	\$100 / hour
	Zeta Potential (Anton Parr SurPASS)	
	Zetasizer (Malvern Zeta Sizer Nano)	
Characterisation	3D Scanner	
	DSA Mass Spectrometer (Perkin Elmer DSA-TOF)	
	Four-point probe station (Signatone WL- 1160)	
	MALDI imaging (Bruker Ultra-flexreme)	
	Mapping Stage Filmetrics System	
	Keithley Parameter Analyzer	
	Thin Film Stress Measurement System (FLX-2320-R)	
Etching	Metal Wet Etching Station (KOH, Cr, Au)	
	Plasma Barrel Asher	
	Fumehood for HF Etch	
	Fumehood for Piranha Etch	
Lithography	Flood Exposure Unit (ABM UV Flood Light Source)	
	Dual Track Robotic spin/bake/developer	
	Automated spin developer**	
	Critical Point Dryer (Quorum)	
	Robotic wet bench and IPA dryer	
Rapid Prototyping	CNC Milling	
	3D Printer (Autodesk Ember)**	
Thin Film Deposition	Cr Sputter Coating (Quorum Q300TT)	
	Sputtering and Carbon Thread Coater (Leica EM ACE600)	

Tier 4 Equipment (Sorted by capability area)		
	Academic/Public funded	Industry
PRICING	\$25 / hour	\$63 / hour
Lithography	Fumehood for Photo-Lithography Processing**	
	Spinner SUSS 6-inch wafer**	

	Spinner/Hotplate SUSS Delta 90**
	HG programmable hotplates
Characterisation	Stylus Profilometer (Ambios)
	UV-VIS Spectrophotometer (Agilent Cary 60)
General Lab Equipment	HG Programmable Hotplate
	UV/Ozone Cleaner Samco UV
	PC for EBL Data Preparation
Laboratories	General laboratories
	PC2 Laboratory (10k annual recoveries cap per supervisor)
	PDMS Laboratory
	Cleanroom Laboratory (bespoke arrangements)

** Denotes that linked consumables surcharges may apply, see Table 1 below

Please note: (1) ALL tools require BOOKING in ACLS in order to schedule all users effectively. (2) Academic/public funded rate is only available to Australian academics. Users from academic institutions outside of Australia will be subject to industry pricing.

Other Charges		
	Academic/Public Funded	Industry
MCN Staff Time – Assisted Work	\$80 / hour	\$200 / hour
MCN Staff Time – Training	\$50 / hour	\$125 / hour
General Residency (by arrangement) <i>see details below*</i>	\$643 / month	\$1608 / month
Full Access Residency (by arrangement) <i>see details below*</i>	\$2570 / month	\$6425 / month
Private Industry Laboratory (by arrangement) <i>see details below</i>	\$5000 / month	\$5000 / month

General Residency includes: allocation of dedicated desk and laboratory space at MCN and access to all tier 3 equipment and laboratory use. It does NOT include use of any tier 2, tier 1 or flagship equipment. All residencies must be for a minimum of 3 months at each interval and paid in advance.

Full Access Residency includes: general residency plus access to all Tier 1-3 Equipment. It does NOT include use of any Flagship equipment. All residencies must be for a minimum of 3 months at each interval and paid in advance.

Private Industry Laboratory: 30sqm, FOB-accessible laboratory with dedicated fume cupboard, essential services, bench space for 3-6 staff and ample storage. Prospective tenants commit to a minimum 12-month lease and must maintain at least one Full Access Residency for term of lease.

Additional charges related to facility modifications and/or consumables may apply depending on nature of proposed activity. Contact MCN's [Infrastructure and OHS Manager](#) for further details.

** Prospective commercial residents must be adequately insured for liability/indemnity. Dedicated laboratory bench space allocations —within shared a shared lab— for Residency package holders is subject to availability. Limited private office space may also be available for Full Access Residency clients at a 10% premium (minimum of 12-month commitment required)*

Table 1. Linked consumables charges associated with certain MCN equipment.

Linked Consumables Charges	
PVD precious metals (Au, Ag, Pt, Pd)	Market rate per \$/nm (see staff or ACLS for details)
Photoresist (per sample)	AZ series (\$7), SU8 series (\$12)
Standard EBL resist (per sample)	PMMA/MMA (\$3/piece; \$6 per 4" wafer; \$13 per 6" wafer)
Specialty EBL resist (per ml)	ZEP (\$50), HSQ (\$18); see staff for purchase
Nanofrazor TSPL resist (per ml)	PPA (\$113); see staff for purchase
Stratasys J826 3D printer (per g)	Full Cure 706 (\$0.20/g), Vero Clear/Colour (\$0.68/g), Vero Contact Clear (\$0.75/g)

Table 2. Mask Fabrication Charges.

Mask Fabrication Charges			
*Plate Size	Min Feature Size	Academic/Public Funded	Industry
5"	>1.5 um	\$360	\$720
	<1.5 um	\$520	\$1040
7"	>1.5 um	\$760	\$1120
	<1.5 um	\$920	\$1440

*Standard for plates will be Soda Lime Glass; surcharge will be added for Quartz or other material.

Variations to published access rates MCN reserves the right to periodically modify tier pricing from those listed in this policy. In these instances, and for a defined period of time, an updated pricing schedule will be advertised with advanced notice (e.g. seasonal sale).

ANFF-VIC: BIOINTERFACE ENGINEERING HUB (SWINBURNE) — see [here](#)

Capability	Academic/Public Funded	Industry
Variable Angle Spectroscopic Ellipsometer (JA Woollam 2000XI)	\$90 / hour	\$225 / hour
Quartz Crystal Microbalance with Dissipation (Q-Sense E4) [#]	\$90 / hour	\$225 / hour
Plasma Polymer Reactors (Custom)	\$40 / hour	\$100 / hour
Multivessel Dip Coater (KSV-NIMA)	\$40 / hour	\$100 / hour
Biointerface Staff Assistance	\$60 / hour	\$150 / hour
Doppler Velocimetry	Quote on request	Quote on request
Mask Aligner (AOI)	\$90 / hour	\$225 / hour
Swinburne NanoLab Facilities <ul style="list-style-type: none"> Electron Beam Lithography (Raith 150two) Ion Beam Lithography (Raith IonLiNE) Reactive Ion Etching (Samco RIE-101iPH) Physical Vapour Deposition (K.J. Lesker AXXIS) Nano-imprint Lithography (Nanonex NXB200) 	\$50 / hour internal \$100 / hour external	\$125 / hour
Swinburne Biological Facilities <ul style="list-style-type: none"> Confocal Microscopy Cell culture biocabinets Epi-Fluorescence Plate Reader Spectrophotometer 	Quote on request	Quote on request

[#]Additional consumables costs will apply

ANFF-VIC: CENTRE FOR MATERIALS & SURFACE SCIENCE (LA TROBE) — see [here](#)

La Trobe Flagship Equipment (Sorted by capability area)		
	Academic/Public funded	Industry
PRICING	\$150 / hour	Quote on request
Surface Analysis	ToF-SIMS (DSC/GCIS)	
	XPS Nova/Ultra	
	Scanning Auger Nanoprobe (PHI 710 Auger Nanoprobe)	

La Trobe Tier 1 Equipment (Sorted by capability area)		
	Academic/Public funded	Industry
PRICING	\$50 / hour	Quote on request
Surface Analysis	Scanning Probe Microscopy (Asylum Research MFP-3D-SA and BIO)	

	SEM (Zeiss Leo 1455)
Characterisation	Contact Angle Meter (DataPhysics OCA20)
	XRD D2 Phaser
	pXRF

La Trobe Other Instruments and Charges

Instrument	Academic/Public funded	Industry
X-ray μ CT (Xradia XCT200)	\$250 / hour (\$1200 cap >5 hours)	Quote on request
X-ray μ CT – scan > 5hr	\$1000/scan	Quote on request
La Trobe Staff Assistance	\$65 / hour	Quote on request

ANFF-VIC: LTCC & MICRO NANO RESEARCH FACILITY (RMIT) — see [here](#)

LTCC (Low Temperature Co-Fired Ceramics)

	Academic/Public funded	Industry
PRICING	\$35 / hour	Quote on request
Custom Green Tape Ceramics Production	Ball Mill (micro powder)	
	Ball Mill (nano powder)	
	Polymer Binder Preparation	
	Tape Caster	
	Laser Machining System	
	Silk Screening	
	Green Tape Stacker/Aligner/Trimmer	
	Isostatic Press	
Firing Furnace		

Micro Nano Research Facility (MNRF) Capabilities

	Academic/Public funded	Industry
PRICING	\$50 / hour	Quote on request
Lithography/Thin Film Deposition	Heidelberg MLA 150 – direct write laser lithography	
	Suss RC8 Gyrosett Spinner	
	Lesker Electron Beam Evaporator	
	Lesker Sputterers	

OTHER CHARGES		
	Academic/Public Funded	Industry
MNRF Staff Assistance	\$60 / hour	\$60 / hour
Training	\$60 / hour	\$60 / hour

ANFF-VIC: MATERIALS CHARACTERISATION & FABRICATION PLATFORM (UNIV of MELBOURNE) — see [here](#)

MCFP Capabilities		
Instrument	Academic/Public funded	Industry
Contact Angle Measurement	\$30 / hour	Quote on request
Cypher AFM	\$25 / hour	Quote on request
MFP3D AFM – Acoustic Hood	\$25 / hour	Quote on request
NanoSight NS300	\$50 / hour	Quote on request
Nikon A1R+ Confocal Microscope	\$50 / hour	Quote on request
Reinshaw RM 1000	\$30 / hour	Quote on request
He Ion Microscope	\$80 / hour	Quote on request
Hitachi FlexSEM	\$30 / hour	Quote on request

ANFF-VIC: INSTITUTE FOR FRONTIER MATERIALS HUB (DEAKIN) — see [here](#)

IFM Advanced Fibres and Textiles Capabilities		
Instrument	Academic/Public funded	Industry
2-Meter Electrospinning Line	\$50 / hour	\$100 / hour
Holmark Electrospinning Rig	\$10 / hour	\$20 / hour
Dissol Wet Spinning Line (Large)	\$20 / hour	\$20 / hour
Dissol Wet Spinning Line (Small)	\$10 / hour	\$20 / hour
Lab Designed Spinning Rig	\$10 / hour	\$20 / hour
Porometer 3GZH Quantachrome	\$25 / hour	\$50 / hour
Wayne Single-Screw Extruder	\$20 / hour	\$40 / hour
Uster Tensorapid-4	\$20 / hour	\$40 / hour
Aglient UTM150 Fibre Tensile Tester	\$30 / hour	\$60 / hour
Favimat – Fiber Tester	\$30 / hour	\$60 / hour
Sifan 4 – Fibre Analyser	\$20 / hour	\$40 / hour
Ahiba IR Pro	\$20 / hour	\$40 / hour

Burst Tester; Direct Cover/Twist	\$20 / hour	\$40 / hour
Lab Miniextruder	\$10 / hour	\$20 / hour
OFDA	\$20 / hour	\$40 / hour
Sweating Guarded Hotplate	\$20 / hour	\$40 / hour
30kN Instron	\$20 / hour	\$40 / hour

ANFF-VIC: Biomedical Materials Translation Facility Hub (CSIRO) — see [here](#)

BMTF Capabilities		
Instrument	Academic/Public funded	Industry
Parylene Coater	\$500/run*	Quote on request
Aerosol Spray Coater	\$50 / hour	Quote on request
X-ray μ CT Scanner (ZEISS Xradia 515 Versa)	\$250 / hour (\$1200 cap >5hours)	Quote on request
X-ray μ CT Scanner (ZEISS Xradia 515 Versa) scan > 5hr	\$1000/scan	Quote on request
Staff Support	\$250 / hour	Quote on request

*Consumables charges will apply

ANFF-VIC: GENERAL POLICIES

All training requests are conducted at the sum cost of ANFF-Vic staff assistance plus the relevant tool costs.

All job requests for independent completion by a process are conducted at the sum cost of staff assistance plus the relevant tool costs.

Small volumes of basic consumables are included in the price for major and minor equipment; however, large volumes or specialised consumables (e.g. substrate materials) will be at full cost to the user and must be arranged with a process engineer. Any retooling will be charged to the user at cost.

In addition to all other induction, operational health and safety and training requirements, researchers who wish to gain unassisted status must complete (and be assessed for competency against) application-specific training provided by the ANFF-Vic process engineers.

Discounts are available at MCN through setup of non-refundable pre-paid accounts for instrument utilisation. Discounts do not apply to residencies, consumables or staff assistance.

PRE-PAID PURCHASE	DISCOUNT
\$2,000 pre-paid account	15%
\$5,000 pre-paid account	20%
\$10,000 pre-paid account	25%
\$25,000 pre-paid account	30%

ANFF-VIC: REPORTING REQUIREMENTS

Users are requested to acknowledge this access program in publications as follows:

“This work was performed in part at the **[insert name]** Node of the Australian National Fabrication Facility. A company established under the National Collaborative Research Infrastructure Strategy to provide nano- and micro-fabrication facilities for Australia’s researchers.”

The ANFF-Victoria logo (available from the www.nanomelbourne.com website) should also be included on the acknowledgements slide of any presentation. In addition, users funded by travel grants will need to meet the requirements of that grant.

5. APPENDICES

N/A

6. REFERENCES

The ANFF Ltd. Access and Pricing Policy.

(http://www.anff.org.au/sites/all/files/access_and_pricing_policy.pdf?q=3)

7. DOCUMENT HISTORY AND CONTROL INFORMATION

DOCUMENT HISTORY			PQMS1-MCN-POL-0027-V1
Version no.	Date of Issue	Reviewed by: name	Amendments
1		Dr Dwayne Kirk	Created to PQMS format

2	8/10/15	Dr Paul Spizzirri	Amended pricing, reporting requirements content and general content update for VIC nodes.
3	30/3/17	Tom Eddershaw	Amended pricing, restructured La Trobe listing.
4	01/05/17	Dr Sean Langelier	Sale pricing and precious metals charging info added
5	30/08/17	Dr Sean Langelier	Surcharge for ZEP EBL resist added to flagship pricing, note that pre-paid accounts non-refundable
6	26/03/18	Dr Sean Langelier	Removal of JV-only prepaid requirement
7	06/08/18	Dr Sean Langelier	Fixing of discount price structure per ANFF-VIC Access and Pricing Committee
8	14/08/18	Dr Sean Langelier	Rounded hourly rates for simplicity
9	06/11/18	Dr Paul Spizzirri	Change billing for HF etching station from non-billable to Tier 3 (billable)
10	09/05/2019	Bernie Orelup	Created for GRC
11	08/11/19	Dr Sean Langelier	CPI pricing, addition of tier 4 charge category, addition of charges to some instruments
12	04/06/20	Dr Sean Langelier	Linked consumables charges and other misc. edits
13	10/12/20	Dr Sean Langelier	Migration of basic Laboratories to T4; annual capping introduced on PC2
14	24/11/21	Dr Sean Langelier	Adding new instruments pricing as follows 1. PhableR -Tier 1 2. Nanoscribe- Tier 1 3. Crhical Fpoint Dryer-Tier 3 4. Leica Stalaris Confocal system-Tier 2 5. Witec Confocal Raman Microscope-Tier 2 6. Keithley Parameter Analyzer-Tier 3 7. Remove-Gold Electroplating (Digital Matrix PMT16)
15	14/02/22	Dr Sean Langelier	Updated MCN instrument list; addition of various ANFF-VIC hub in-kind capabilities; adjustments to hub pricing
16	22/11/22	Dr Sean Langelier	CPI increases to instrument pricing; increased staff assistance rate; private industry lab
17	17/01/23	Dr Sean Langelier	Introduction of training discount
18	3/02/23	Dr. John Zhu	Adding new instrument Profiler Sytus Bruker DektaXT-A as a Tier 2 instrument
19	22/3/23	Dr. John Zhu	3D printer consumables cost changes
20	01/08/23	Dr Sean Langelier	MCN Pricing adjustment to due to significant increases to facility operations; pricing effective from the August 2023 billing cycle.
21	22/8/23	Bernie Orelup	Adding Mask Fabrication Charges

DOCUMENT END