

DOCUMENT AUTHORISATION			
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**ANFF-Victoria Access and Pricing Policy**

PQMS1-MCN-POL-0027-V5

## 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.

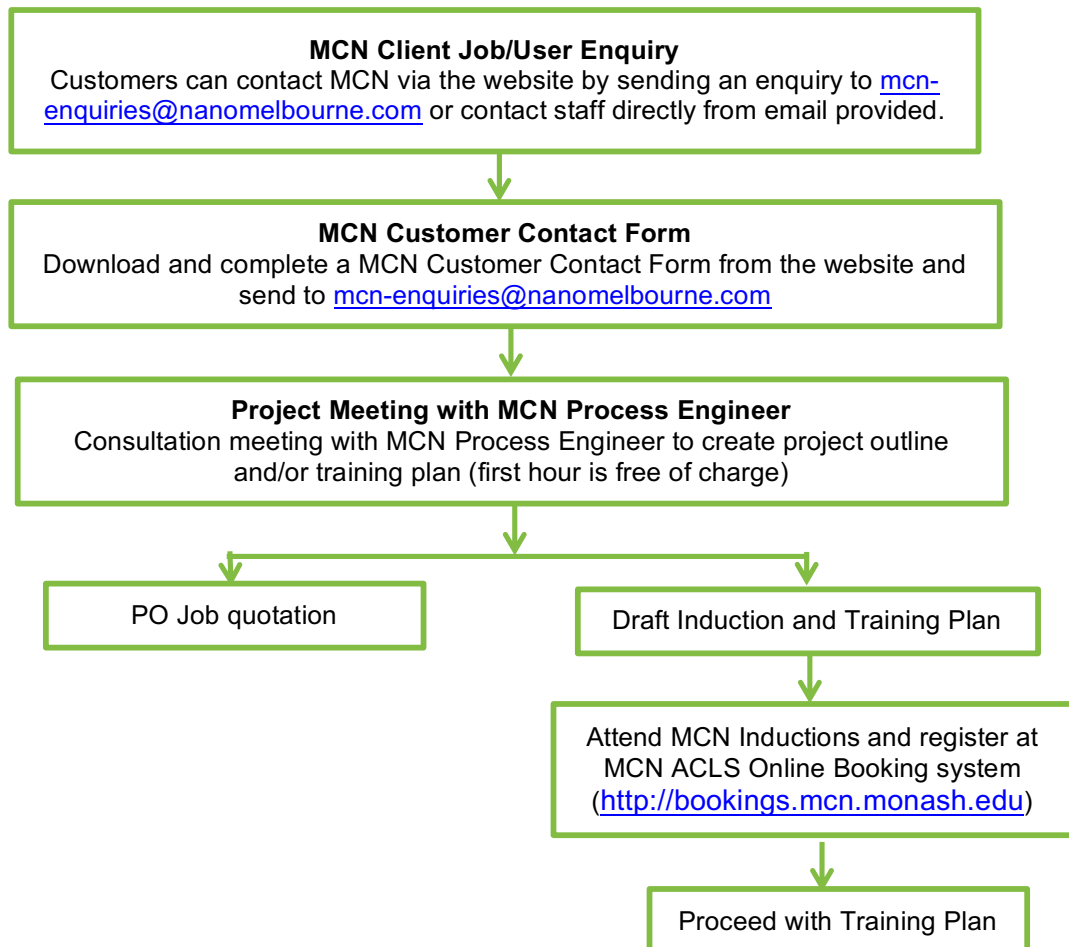
The MCN is operated by Monash University and as a result, all users must satisfy all Monash University policies and procedures including OH&S, out-of-hours and any other specific procedures of the MCN.

## 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](mailto: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 (Chair), the ANFF CEO, the MCN Facility Manager 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 (EFFECTIVE 02 APRIL 2017)

##### ANFF-VIC: MELBOURNE CENTRE FOR NANOFABRICATION (MCN)

Table 1. Pricing structure for use of MCN major equipment and laboratories

FLAGSHIP EQUIPMENT		
	Academic/public funded	Industry
Vistec Electron Beam Lithography <i>Note: a surcharge for specialty resists may apply. Please see staff for details and current market rates.</i>	\$120 / hour (\$1000 cap per 24hrs)	\$300 / hour (\$2500 cap per 24hrs)
UV Lithography (excluding chrome mask)	\$50 / hour (\$350 cap per 24hrs)	\$125 / hour (\$850 cap per 24hrs)
Seki Diamond Deposition Systems	\$90 / hour (\$1000 cap per 24hrs)	\$225 / hour (\$2500 cap per 24hrs)
Nanofrazor Thermal Scanning Probe Lithography	\$90 / hour (\$1000 cap per 24hrs)	\$225 / hour (\$2500 cap per 24hrs)

Tier 1 Equipment (Sorted by capability area)		
	Academic/Public funded	Industry
<b>PRICING</b>	\$90 / hour	\$225 / hour
<b>Bio Capabilities</b>	3D Printer (Objet Eden 260V)	
<b>Characterisation</b>	Atomic Force Microscope (Bruker Dimension Icon)	
	Bio Atomic Force Microscope (JPK Nanowizard II)	
	FEG-SEM (FEI NovaNano SEM 430)	
	FIB-SEM (FEI Helios Nanolab600 Dual Beam FIB-SEM)	
<b>Etching</b>	Etcher 1 (Oxford DRIE – Bosch)	
	Etcher 2 (Oxford RIE – General)	
<b>Lithography</b>	Mask Aligners (SUSS MA6 and EVG6200) *	
	Nano Imprint System (EVG 520 IS)	
<b>Thin Film Deposition</b> <i>Note: surcharge for precious metals may apply. Please see staff for details and current market rates.</i>	ALD Systems (Cambridge Nanotech ALD FijiF200 & Savannah S100)	
	Electron Beam Evaporator (Intlvac Nanochrome II e-beam)	
	Furnace Stack Tube #4 (Silicon Nitride LPCVD)	
	Furnace Stack Tube #1 & #2 (Phosphorus/Boron Bubbler Doping)	
	Gold Electroplating (Digital Matrix PMT-16)	
	Nickel Electroplating (Digital Matrix SA1000)	
	PECVD (Oxford Plasmalab 100 PECVD)	
	Polymer Glovebox (Mbraun MB200)	
	Sputter Systems (Intlvac Nanochrome & Anatech Hummer BC-20)	
	Thermal Evaporator (Angstrom Engineering EvoVac)	

### Tier 2 Equipment (Sorted by capability area)

	Academic/Public funded	Industry
<b>PRICING</b>	\$60 / hour	\$150 / hour
<b>Bio Capabilities</b>	Glovebox (Biolab)	
<b>Characterisation</b>	Hyperspectral Imaging (Cytoviva Hyperspectral Imaging System)	
	Laser Doppler Vibrometers (Polytec MSA-400 & UHF-120)	
	Laser Scanning Confocal Microscope (Nikon Instrument A1Rsi+Ti-E)	
	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)*	
	TIRF System (Nikon Instrument TIRF with Ti-U)	
<b>Etcher</b>	Anodic HF Etcher (Coming soon)	
<b>Packaging</b>	Dicing Saw (DiscoDAD321)	
	Scriber/Breaker (Dynatex DTX)	
	Wire Bonders (K&S 4524 and 4526, F&S Bondtec 5832 and Westbond 7476E)	
<b>Thin Film Deposition</b>	Hitech Oxidation Furnace (\$250 Academic / \$625 Industry caps/run)	
	Furnace Stack Tube #1 & 2 (Phosphorus/Boron solid source Doping)	
	Furnace Stack Tube #3 (general purpose)	

### Tier 3 Equipment (Sorted by capability area)

	Academic/Public funded	Industry
<b>PRICING</b>	\$40 / hour	\$100 / hour
<b>Bio Capabilities</b>	Microarray Spotter (Nanoprint TM LM60)	
	Zeta Potential (Anton Parr SurPASS)	
	Zetasizer (Malvern Zeta Sizer Nano) *	
<b>Characterisation</b>	3D Scanner	
	DSA Mass Spectrometer (Perkin Elmer DSA-TOF)	
	Four-point probe station (Signatone WL- 1160)	

	MALDI imaging (Bruker Ultraflexxtreme MALDI)
	Mapping Stage Filmetrics System *
	Pull tester (Bose ElectroForce 3200)
<b>Etching</b>	Metal wet etch bath tool *
	Plasma Asher *
<b>Laboratories</b>	General laboratories
	PC2 Laboratory
	PDMS Laboratory
<b>Lithography</b>	Flood Exposure Unit (ABM UV Flood Light Source)*
	Dual Track Robotic spin/bake/developer*
	Automated spin developer*
	Robotic wet bench and IPA dryer*
<b>Rapid Prototyping</b>	CNC Milling
	3D Printer (Autodesk Ember)
<b>Thin Film Deposition</b>	Cr Sputter Coating (Quorum Q300TT)

### OTHER CHARGES

	<b>Academic/Public Funded</b>	<b>Industry</b>
MCN Staff Assistance	\$60 / hour	\$150 / hour
General Residency (by arrangement)	\$500 / month	\$1250 / month
Full Access Residency (by arrangement)	\$2000 / month	\$5000 / month

### OTHER CHARGES (These tools are bookable but not billable)

<b>Characterisation</b>	Cleanroom Microscopes
	Stylus Profilometer *
	UV-VIS Spectrophotometer (Agilent Cary 60)*
<b>Etching</b>	HF Etch Station*
<b>Lithography</b>	Spin Coaters
<b>Thin Film Deposition</b>	Pt and Au Sputter Coater (Magnetron DSR-1 and EMITECH K550X)
<b>Other</b>	Network Analyser
	Vacuum Oven

\* Denotes that this instrument is bookable in 15-min increments (above)

Please note that ALL tools require BOOKING in ACLS in order to schedule all users effectively.

Please note that the academic/public funded rate is only available to Australian academics. Users from academic institutions outside of Australia will be subject to industry prices.

**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.

**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 FACILITY (SWINBURNE)

Table 2: Pricing structure for use of Bio-interface equipment and laboratories

DESCRIPTION	ACADEMIC/PUBLIC FUNDED	INDUSTRY
Ellipsometer, Mask Aligner	\$90 / hour	\$225 / hour
Plasma Generator , Langmuir Blodgett, Dip Coater	\$40 / hour	\$100 / hour
Biointerface Staff Assistance	\$60 / hour	\$150 / hour

### ANFF-VIC: CENTRE FOR MATERIALS & SURFACE SCIENCE (LA TROBE)

Table 3: Pricing structure for use of CMSS equipment and laboratories

La Trobe Flagship Equipment (Sorted by capability area)		
	Academic/Public funded	Industry
<b>PRICING</b>	\$150 / hour	Quote on request
<b>Surface Analysis</b>	Time-of-flight SIMS (IONTOF ToF-SIMS 5 DSR/EDR/GCIS)	
	X-ray Photoelectron Spectroscopy (Kratos AXIS Ultra and Nova)	
	Scanning Auger Nanoprobe (PHI 710 Auger Nanoprobe)	

La Trobe Tier 1 Equipment (Sorted by capability area)		
	Academic/Public funded	Industry
<b>PRICING</b>	\$50 / hour	Quote on request
<b>Surface Analysis</b>	Scanning Probe Microscopy (Asylum Research MFP-3D-SA and BIO)	
	SEM (Zeiss Leo 1455)	
<b>Characterisation</b>	Contact Angle Meter (DataPhysics OCA20)	

La Trobe Other Instruments and Charges		
	Academic/Public funded	Industry
X-ray $\mu$ CT (Xradia XCT200)	\$250 / hour (\$1200 cap >5 hours)	Quote on request
La Trobe Staff Assistance	\$60 / hour	Quote on request

### ANFF-VIC: MICRO- AND NANO-DEVICES LABORATORY (CSIRO)

Table 4: Pricing structure for use of equipment and laboratory

DESCRIPTION	ACADEMIC/PUBLIC FUNDED	INDUSTRY
Laboratory Access	\$40 / hour	\$100 / hour

### 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 to ANFF-Vic Partner institutions by making a non-refundable pre-paid purchase at MCN or the Bio-interface Facility. Discounts do not apply to residencies, consumables or staff assistance.

PRE PAID PURCHASE	DISCOUNTS TO BE APPLIED
\$2,000 pre paid account	15% discount
\$5,000 pre paid account	20% discount
\$10,000 pre paid account	25% discount
\$25,000 pre paid account	30% discount

### 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](http://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](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

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