

ASSEMBLY, ENCAPSULATION AND PROTOTYPING		
HOURLY SERVICE RATE	Academic rates¹	Industrial rate (admin. fees included)
Operator time	62 \$ / h	95 \$ / h
EQUIPMENT PRICES²	Academic rates¹	Industrial rate (admin. fees included)
Environmental chamber (AES SD-308) Drying oven (Despatch LAC2-18) Programmable drying oven (Heratherm OMH100)	5 \$ / day	10 \$ / day
EMI/EMC emissions inspection (EMSCAN EMxpert) 3D optical inspection (Caltex RX-100-BGA) Wide field 3D measurement system (Keyence VR-5000)	5 \$ / h	10 \$ / h
Convection oven for prototyping (LPKF ProtoFlow S) ³ UV lamp (Dymax BlueWave 200)	10 \$ / h	20 \$ / h
Ultrasonic bath (Branson CPX8800H) ⁴ X-Ray Inspection (JewelBox-70T) Manual microassembly (Tresky T-3002-FC3) Thermocompression head (Finetech Pico MA)	15 \$ / h	30 \$ / h
Convection oven 8 zones (Heller 1826 MK5) ^{3,5} Automatic pick-and-place (MyData MY200LX) Thermocompression microassembly (Finetech Pico MA) Wire bonder (SAE) ⁶ Wire bonder (TPT HB10) ⁶ Heavy wire bonder (TPT HB30) ⁶ 13 GHz oscilloscope (Keysight MSO91304A) ¹¹ Bondtester (Nordson DAGE 4000Plus) Manual paste printer (LPKF ProtoPrint S) ⁷ Hot Air rework station (Finetech Pico RS) Infrared rework station (PDR IR-E3) Plasma treatment system (Diener PlasmaBeam) ⁸	20 \$ / h	40 \$ / h
Automatic paste printer (DEK ASM-E) ⁷	25 \$ / h	50 \$ / h
Laser micro-machining (LPKF ProtoLaser U3) Automated fluid deposition system (Nordson S-820)	30 \$ / h	60 \$ / h
Using the Complete Assembly Line	45 \$ / h	90 \$ / h

ASSEMBLY, ENCAPSULATION AND PROTOTYPING (Cont.)		
EQUIPMENT PRICES²	Academic rates¹	Industrial rates (admin. fees included)
3D PCB Printer (Nano Dimension DragonFLY IV) ⁹	60 \$ / h	120 \$ / h
Automatic wire bonder (Hesse Mechatronics BJ855) ¹⁰	100 \$ / h ¹¹	200 \$ / h
Automatic PCB washer (AAT Aqua ROSE-CL)		
Base fee per cleaning cycle ¹²	66 \$ / cycle	132 \$ / cycle
Unit charge for each PCB or panel	6 \$ / unit	12 \$ / unit
9 GHz Spectrum analyser (Keysight N9935A FieldFox) ¹³	0,13 \$ / h	0,67 \$ / h
FLAT RATES	Academic rates¹	Industrial rates (admin. fees included)
Paste printing and reflow service (manual assembly by the user) ¹⁴		
Charges for 1 to 4 PCB panels with parts on one side only	164 \$ / day	270 \$ / day
Charges for 1 to 4 PCB panels with parts on both sides	266 \$ / day	445 \$ / day
TRAINING PRICES	Academic rates¹	Industrial rates (admin. fees included)
General Access Training	20 \$ / user	40 \$ / user
Automatic wire bonder training (Hesse BJ855) ¹⁵	200 \$ / user	400 \$ / user
MATERIAL PRICE	Unit Price	
Kapton in 12" x 12" sheet (thicknesses: 2, 3 and 5 mils)	45 \$ / sheet	
FR4 (copper free) in 12" x 12" sheet (thicknesses: 31 and 62 mils)	23 \$ / sheet	
FR4 (copper free) in 12" x 12" sheet (thicknesses: < 31 mils)	49 \$ / sheet	
<i>Single or double sided FR4 with 0.5 or 1 oz copper available on request.</i>		
Stainless steel sheet in 8" x 12" (thicknesses: 1, 2, 3, 4 et 5 mils)	20 \$ / sheet	
Dielectric ink (DI) for projects with 3D PCB printer (DragonFLY IV)	4 \$ / ml	
Conductive ink (CI) for projects with 3D PCB printer (DragonFLY IV)	20 \$ / ml	
FLUXES AND ADHESIVES AVAILABLE UPON REQUEST		
Flux WS688, standard flux for no clean rework, Specialized epoxy glue (underfill, very liquid) (non-conductive Epotek 301-2), conductive epoxy glue (Epotek H20E and MicroCoat SD0802-31), non-conductive UV glue (Dymax 9309- SC), optical UV glue (Norland NOA 83H), instant glue (Loctite 401) and red glue for SMT assembly (Koki JU-R2S).		

ELECTRONIC DESIGN, FPGA/SoC PROGRAMMING, EMBEDDED SOFTWARE DESIGN, TELECOMMUNICATIONS AND AI

HOURLY SERVICE RATE	Academic rates ¹	Industrial rates (admin. fees included)
Professional rate	72 \$ / h	144 \$ / h

TECHNICAL SUPPORT FOR RESEARCHERS

HOURLY SERVICE RATE	Academic rates ¹	Industrial rates (admin. fees included)
Professional rate	62 \$ / h	124 \$ / h

ASSEMBLY AND SOLDERING

DAILY RATE	Academic rates ¹	Industrial rates (admin. fees included)
Access to the P2-1039, workstation rental and equipment rental ¹⁶	3 \$ / day	20 \$ / day
MATERIAL PRICE	Academic rates ¹	Industrial rates (admin. fees included)
Wire (6 AWG) ¹⁷	10 \$ / m	20 \$ / m
Wire (others) ¹⁷	.30 \$ / m	.60 \$ / m

BILLING CONDITIONS

- ¹ An administrative fee of 15% applies to the total amount of the invoice for academics outside the Université de Sherbrooke.
- ² Equipment can be booked in 30-minute increments.
- ³ The use of dry nitrogen in the equipment is available and is included in the rate.
- ⁴ Cleaning with water or vigon.
- ⁵ Requires a warm-up time of approximately 45 minutes.
- ⁶ Basic consumables are included in the price. All other consumables specific to a project are at the user's expense. Specifications for wedges, capillaries and wires available can be supplied on request.
- ⁷ Solder paste NO CLEAN high temperature SAC 305 (AIM M8-SAC305-25-J5) and low temperature (AIM NC273LT-SN42AG1BI57-38-J5) included in the price.
- ⁸ 5N compressed gas for 4%H₂-N₂ and 3%H₂-AR process.
- ⁹ Dielectric (DI) ink and conductive ink (CI) are extra.
- ¹⁰ Ball-Wedge BW01: 15 µm, 20 µm and 25 µm gold wires and compatible capillaries available to equipment users.
Wedge-Wedge DA06: 25 µm gold and aluminum wire available with standard wedge included.
Specifications for wedges, capillaries and wires can be supplied on request. All other consumables are at the user's expense.
- ¹¹ The pricing for this equipment is degressive for the academic community (UdeS and outside UdeS) and depends on the duration of continuous use of the devices. It is established as follows:
- 1 hour and less = 100% of the price;
 - From 1 to 4 hours of continuous use = 60% of the rate;
 - From 4 to 8 hours of continuous use = 30% of the rate;
 - More than 8 hours of continuous use = 20% of the tariff.
- It should be noted that the rate is reset at every reservations or for every day since a reservation cannot exceed 24 hours. Ex: 1 hr = \$20, 3 hrs = \$44, 6 hrs = \$68, 9 hrs = \$84, 12 hrs = \$96 and 24 hrs = \$144
- ¹² The rate includes DI water, operator time and LCSM access fees.
- ¹³ Equivalent to the rate of \$3 / day. The minimum bill is one day.
- ¹⁴ The flat rate applies for each assembly day. Only operator time and time for screen printing and reflow equipment are included. Any material that does not comply with the equipment of the platform or any additional requests to what has been discussed beforehand could incur additional costs.
- ¹⁵ Price for each 3 hour period of training (per user). 2 or 3 sessions may be required to complete the training depending on the user's needs. Possibility of working with the user's sample if adapted to the equipment.
- ¹⁶ If the equipment is used in the P2-1039 directly, the price includes the rental of a workstation (equipment included) and consumables (tin, flux, etc.). If the equipment is borrowed and used elsewhere than at P2-1039, the daily rate applies per equipment borrowed. All equipment must be reserved. It is necessary to complete the loan form.
- For example, if an oscilloscope and a power supply are borrowed for 7 days for an experiment at the P2-1015 lab, the bill will be 2 (equipment) x 7 days x \$3/day = \$42.
- ¹⁷ Several types of single and multi-strand wires are available. It is mandatory to complete the yarn consumption form provided for this purpose.