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AUGUST, 2014 - MARCH, 2015**



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ACKNOWLEDGMENT

MESSAGE FROM OUR MANAGEMENT

Dear Our Valued Customer and Business Partners,

Thank you for being our valued customers. We are grateful for the pleasure of serving you and meeting your laboratory and research equipment needs. In this time of gratitude, we also thank you for your continued support for trusting us and our products. Henceforth, we value your patronage and appreciate your confidence in us. Counting you among our customers is something which we are grateful for.

This year, it has been challenging year, but we have overcome these challenges in triumph- with help of you and your fellow researcher, engineers and scientist. All of you have worked hard allowing our business to thrive.

On behalf of the management and staff of KGC Resources Sdn Bhd, we are once again grateful and thank you for your support and continuous loyalty to us. We try to keep our price low and In fact we are maintaining the price for most of the products. In addition, we provides some information on battery research flow chart which may become handy to whoever is doing the battery research.

We hope that you will enjoy our promotion catalog and we promise to offer you with our best and lower and attractive price. Please feel free to browse our e-product catalog and e-promotion catalog on www.kgcscientific.com and/or www.kgcresources.com.

Thank you!

MAP TO OUR COMPANY

KGC RESOURCES SDN BHD

**No. 2-2-3, Jalan Setia Prima E
U13/E, Setia Alam, Seksyen U13
40170 Shah Alam
Selangor Darul Ehsan, Malaysia**

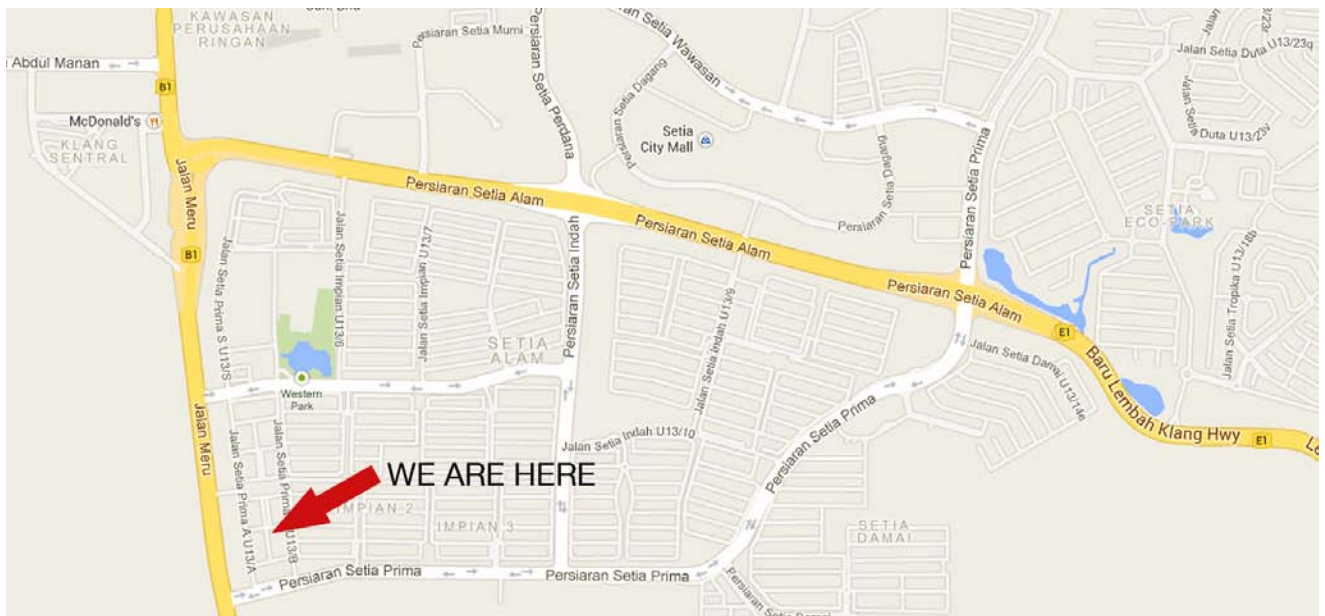
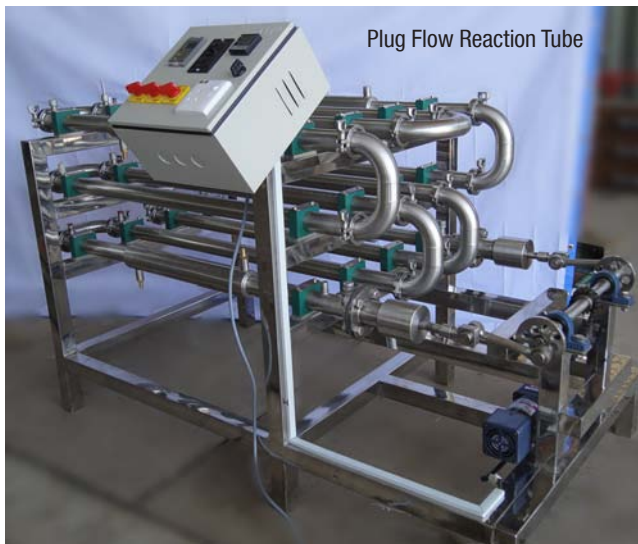


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CUSTOMIZED DESIGN



Plug Flow Reaction Tube



Walk-In Laboratory Room



Membrane Filtration System

KGC RESOURCES SDN BHD was formed to deliver innovative laboratory equipment designs to science and research industry. We have combined experienced and talented engineers to understanding end users' needs from developing the designs, fine tuning the mechanical works until the fabrication parts. Our engineers are young but talented and we pride ourselves in our tag line: STRENGTH THROUGH INNOVATION.

We have been involved in constructing Walk-In Laboratory Room, Plug Flow Reaction Tube, Membrane Filtration System, Corrosion Control Test, Heat Transfer System and many others in various fields that are related with research purpose. Any inquiry please feels free to contact us.

TUBE FURNACE



Model	Quartz Tube Option	Heating Rate	Working Temperature	Features	Advantages	Price
GSL-1100X	1" O.D. or 2" O.D.	Max: 20°C /min	Max: 1100°C (< 1 hour) Cont: 1000°C	Dial Vacuum Gauge	The chamber can be set up in vertical, horizontal, or at an angle	RM 12,350
GSL-1100X-50-LVT	1" O.D.	Max: 20°C /min	Max: 1100°C (< 1 hour) Cont: 1000°C	Digital Vacuum Gauge, Temperature Calibrator, Vacuum Pump and Filter	Stainless steel shell with adjustable height	RM 29,980
OTF-1200X-S50-LVT	1" O.D. or 2" O.D.	Max: 10°C /min	Max: 1200°C (< 1 hour) Cont: 1100°C	Digital Vacuum Gauge, Temperature Calibrator, and Vacuum System	Can heat sample in vacuum up to 1E-2 Torr or flowing gas.	RM 29,680
OTF-1200X-S50-2F	2" O.D.	Max: 10°C /min	Max: 1200°C (< 1 hour) Cont: 1100°C	Digital Vacuum Gauge, Two Channel Gas Mixing Station, and Vacuum System	Anti corrosive gauge to be used with aggressive gases	RM 31,380
OTF-1200X-S	1" O.D. or 2" O.D.	Max: 20°C /min	Max: 1200°C (< 1 hour) Cont: 1100°C	Dial Vacuum Gauge	Split-able horizontal tube furnace	RM 14,380
OTF-1200X-4-RTP	4" O.D.	Max: 50°C /sec	Max: 1100°C (< 10 min) Cont: 600°C	Digital Vacuum Gauge	Rapid thermal processing system for fast heating and double layer steel case	RM 57,250
OTF-1200X-S-VT	1" O.D. or 2" O.D.	Max: 20°C /min	Max: 1200°C (< 1 hour) Cont: 1100°C	Dial Vacuum Gauge	Split-able vertical tube furnace	RM 20,500

VACUUM CHAMBER FURNACE



Model	VBF-1200X-H8-UL
Quartz Tube Size	8" O.D x 7.5" I.D.x 13.4" L
Volume	7.6 L
Working Temperature	Maximum 1100°C for 30 minutes and 1000°C continuously
Features	<ul style="list-style-type: none"> • PID automatic control and auto-tune function • Stainless steel vacuum flange with one needle valve as gas inlet • One port for vacuum pump connection • Digital vacuum gauge provided
UL Recognition	All electric components are UL recognized
Price	RM 52,098

MUFFLE FURNACE

Muffle furnace (400°C-1800°C) steps in as the necessary part of laboratory that requires extreme heat environment. MTI is providing the muffle furnace at an affordable cost. The sizes of the muffle furnace are various from the smaller furnaces which are conveniently placed on a workbench, to the larger units that has a coveted capacity and competent for all duty.

General Features:

- PID automatic control and auto tune function temperature controller
- High purity alumina fiber insulation
- Double shell steel case



KSL-1100X-S



KSL-1500X-S






KSL-1200X-M

Model	Chamber Dimension L x W x H	Volume	Heating Rate	Working Temperature	Heating Element	Power	Price
KSL-1100X-S	4" x 4" x 4"	1 L	Max: 30°C /min	Max: 1200°C (< 1 hour) Cont: 1100°C	Resistance Wire	700 W	RM 6,800
KSL-1200X-L	16" x 16" x 16"	64 L	Max: 20°C /min	Max: 1100°C (< 1 hour) Cont: 1000 °C	Resistance Wire	5000 W	RM 28,750
KSL-1200X-J	6" x 6" x 7"	4.2 L	Max: 30°C /min	Max: 1200°C (< 4 hour) Cont: 1100 °C	Resistance Wire	3000 W	RM 10,850
KSL-1200X	12" x 8" x 5"	7.2 L	Max: 50°C /min	Max: 1200°C (< 1 hour) Cont: 1100°C	Resistance Wire	3500 W	RM 14,230
KSL-1200-X-M	12" x 12" x 12"	27 L	Max: 10°C /min	Max: 1200°C (< 1 hour) Cont: 1100 °C	Resistance Wire	7000 W	RM 20,286
KSL-1500X-S	4.7" x 4.7" x 4.7"	1.7 L	Max: 20°C / min Cont: 10°C/min	Max: 1500°C (< 1 hour) Cont: 1400°C	Silicon Carbide	2000 W	RM 23,280
KSL-1700X-S	4.7" x 4.7" x 4.7"	1.7 L	Max: 20°C / min Cont: 10°C/min	Max: 1700°C (< 3 hour) Cont: 1600°C	Molybdenum Disilicide	3000 W	RM 24,750



SPIN COATER

VTC-50	VTC-100A	VTC-200
<p>Desktop Spin Coater with Complete Accessories</p> <ul style="list-style-type: none"> • 4" stainless steel spin plates are included, which can hold one or multiple samples by wax or double-sided tape • The spinning speed is variable from 0-5100 rpm • 20 ml syringe is included for liquid injection with adjustable syringe holder that can rotate freely along the support rod <p>RM 10,980</p>	<p>Programmable Spin Coater with Vacuum Chucks, Oilless Vacuum Pump & Accessories</p> <ul style="list-style-type: none"> • Liquid disk made of polypropelene to resist most of corrosive solutions (1", 2", & 4") • The spinning speed is variable from 500-8000 rpm with two programmable segments • One oilless vacuum pump and one filter are included • 20ml syringe is used to contain the coating material <p>RM 19,980</p>	<p>Programmable Vacuum Chuck Spin Coater with Complete Accessories</p> <ul style="list-style-type: none"> • One 6" vacuum chuck is included for holding 6" and 8" wafers • 500 - 5000 rpm adjustable spinning speed • Digital control panel with two programmable segments of different spin times and speeds • 20ml syringe is used to contain the coating material <p>RM 21,225</p>

DIP COATER

<p>PTL-MM01</p>	<p>PTL-MM02</p>	<p>PTL-200</p>
		
<p>Desktop Dip Coater with Variable Speed</p> <ul style="list-style-type: none"> • Dipping speed is within 1-200 mm/min adjustable • Dipping traveling within 0-200 mm adjustable • 150 ml solution container is included • Sample weight less than 250g 	<p>Programmable Dip Coater with Digital Controller</p> <ul style="list-style-type: none"> • Dipping speed is within 1-200 mm/min adjustable • Dipping traveling within 0-75 mm adjustable • 150 ml solution container is included • Sample weight less than 250g 	<p>PLC Controlled Dip Coater for Large Substrate</p> <ul style="list-style-type: none"> • Coating samples with size up to 10" x 12" • Pulling rate, immersion rate, dwell time and cycling time are fully programmable • 4 liter polypropylene tank is provided • Max stroke length is up to 300 mm • Max sample load is 7 kg
<p>RM 15,750</p>	<p>RM 24,085</p>	<p>RM 30,530</p>

HOT ROLLING PRESS

<p>MSK-HRP-MR100A</p>	<p>MSK-HRP-01</p>
 <p>4" Rolling Press with Dual Micrometer</p> <ul style="list-style-type: none"> • 100 mm Dia. x 100mm width Rollers made from hardened tool steel HRC60-62 • Dual micrometer for accurate thickness adjustment in the range 0 - 1.8 mm • Constant Rolling Speed: 65 mm / second 	 <p>4" Hot Rolling Press</p> <ul style="list-style-type: none"> • Max heating temperature: 125°C • 100 mm Dia. x 100mm width Rollers made from hardened tool steel HRC60-62 • Calendering thickness in the range 0 - 1.2 mm adjustable • Rolling speed 0 - 40mm /sec adjustable
<p>RM 23,380</p>	<p>RM 52,870</p>

CUTTING AND DICING SAWS

<p>SYJ-30</p>	<p>SYJ-40</p>	<p>SYJ-150</p>
		 <p>Digital Micrometer</p>
<p>Heavy Duty High Speed Abrasive Cut-off Saw with 10" SiC Cutting Blades</p> <ul style="list-style-type: none"> • 10" SiC cutting blades are included • Max cutting section is up to 30 mm x 30 mm • Manually push up with T clamp vise is included for quick tightening or release • Motor speed is 2800 rpm • A cooling system is built in with inlet and outlet provided 	<p>High Speed Diamond Cut-off Saw with Vise and 4" Diamond Blades</p> <ul style="list-style-type: none"> • 4" impregnated diamond blades are included • Speed varies from 400 to 3250 rpm • Flat saw table for easy trimming oversized slabs • Max cutting depth is 25.4 mm • Vise provided to handle the sample smoothly 	<p>Digital Low Speed Diamond Saw with 4" Precision Blades & Complete Accessories</p> <ul style="list-style-type: none"> • Variable 0 - 600 rpm with LED digital display • Cutting width range is from 1 mm - 24mm by adjusting the LCD digital micrometer • Max cutting depth is 55 mm when using 25 mm O.D blade flange • Two angle adjustable sample holder is included
<p>RM 7,290</p>	<p>RM 3,800</p>	<p>RM 22,350</p>

DC LOAD TESTER

EQ-M9711

DC Programmable Electronic Load for Battery and Capacitor Discharging Test

EQ-M9711 DC electronic load provides you with the flexibility to test a wide range of applications, such as testing power supply and battery charger, testing battery or super-capacitor discharging performance etc.

- Six high speed operation modes: CC,CR,CV,CW,CC+CV,CR+CW
- Over current, over voltage, over power, over heat, polarity reversed protection
- High-luminance VFD screen with two lines& four channels display
- Intelligent fan system will be automatically initiated according to the temperature
- Soft start time setting, carrying the power supplier according to the voltage value set
- Battery testing and short-circuit function
- Available of dynamic testing and rising edge and falling edge setting
- Supporting external trigger input and output
- External current waveform monitor terminal
- Supporting remote voltage compensation and multi-data storage
- Power-on-self-test, software calibration and standard rack mount
- Communication mode: USB port with software interface to PC



RM 5,850

LABORATORY MIXER

MSK-USP-3N



Ultrasonic Processor for Dispersing, Homogenizing and Mixing Liquid Chemicals

- Ultrasonic power up to 300 W and 20 kHz frequency
- Liquid handling from 100 ml - 2000 ml
- Digital timer range from 1 sec - 99 hours
- Temperature sensor is installed

RM 19,980

MSK-VUSP-12



Ultrasonic Processor with Vacuum Chamber and Pump

- Ultrasonic power up to 1200 W and 20 kHz frequency
- Liquid handling from 100 ml - 2000 ml
- Digital timer range from 1 sec - 99 hours
- Temperature control built in
- Vacuum level less than 1 Torr

RM 54,960

VACUUM PEN



Model	EQ-SMT-72-ESD
Features	<ul style="list-style-type: none"> • A compact and portable pick-up tool, which can move chip, crystal wafer and components safely and easily • Vacuum suction is generated by pressing and releasing the trigger • Four suction cups in different sizes are included, which can meet various specific requirements • The pen body is made of ESD silicon Rubber to ensure operation safely and cleanly
Suction Cups Diameter	Four different sizes which are 6.4 mm, 9.5 mm, 12.5 mm and 19 mm made from conductive silicone material
Price	RM 150

ULTRASONIC CLEANER



Model	EQ-VGT-1613QTD	EQ-VGT-1620QTD
Inside Dimension	150 mm L x 140 mm W x 65 mm H	150 mm L x 140 mm W x 100 mm H
Volume	1300 ml	2000 ml
Ultrasonic Frequency	40 KHz	
Ultrasonic Power	60 W	
Features	<ul style="list-style-type: none"> • 1-99 minutes adjustable, to accurately calculate second. • Temperature setting: 20°C~80°C adjustable. 	
Price	RM 1,248	RM 1,768

BATTERY FABRICATION EQUIPMENT

<p>MSK-115A</p> 	<p>MSK-170</p> 	<p>MSK-112A</p> 	
<p>Compact Vacuum Sealer for Preparing Pouch Cell</p> <ul style="list-style-type: none"> • Sealing pressure up to 7 kg/cm² adjustable • 200 mm L x 150 mm W max sealing dimensions • 5 mm edge sealing width • 50 - 250°C adjustable sealing temperature • 50 - 250°C adjustable sealing temperature • 0 - 99 Seconds adjustable heating timer • Hard sealing blade (no tab in between) <p>RM 39,185</p>	<p>Electrolyte Diffusion Chamber for Professional Li-ion Battery Research</p> <ul style="list-style-type: none"> • 0 - 1 MPa adjustable air pressure • 326 mm L x 206 mm W x 148 mm H inner chamber size • 0 - 99.99 sec air inflation time • 0 - 99.99 sec vacuum condition hold time • -20 to 40°C operation temperature • Easy program setting for specific vacuum condition <p>RM 37,580</p>	<p>Semi-Automatic Winding Machine for Electrodes</p> <ul style="list-style-type: none"> • Winding speed up to 250 rpm adjustable • Winding blade available for pouch cell and cylindrical cell • Switchable between clockwise and counterclockwise <p>RM 16,780</p>	
<p>MSK-330A</p> 	<p>MSK-500-18650</p> 	<p>MSK-510-18650</p> 	
<p>Precise Pneumatic Point Welding Machine</p> <ul style="list-style-type: none"> • 10 kW max power • 0.1 - 0.8 MPa air pressure range • 0 - 99 A welding current • 0.03 - 0.25 mm welding thickness • Controlled by microcontroller to achieve monopulse, dipulse, & multiple-pulse welding <p>RM 19,450</p>	<p>Desktop Semi-Auto Grooving Machine for Various Cylinder Cell</p> <ul style="list-style-type: none"> • 400 grooving per hour productivity • > 0.5 MPa air pressure is required • CR123 / 18650 / 26650 / 32650 / AA selectable • 1.2 - 2.0 mm depth grooving dimensions • 1.1 - 1.5 mm width grooving dimensions • +/- 0.1 mm grooving accuracy • > 1 million times grooving blade durability <p>RM 39,270</p>	<p>Desktop Hydraulic Sealing Machine for 26650, 18650, 32650, CR123, AA, AAA</p> <ul style="list-style-type: none"> • Driving force using manual hydraulic pressing up to 5T • Six standard die selectable • It is necessary to groove the opening end of the cylindrical case by using the MSK-500 grooving machine before sealing the cap • Free 100 pcs sample of selected die <p>RM 23,760</p>	
<p>MSK-111A</p> 	<p>Semi-Automatic Stacking Machine for Pouch Cell</p> <ul style="list-style-type: none"> • 200 mm max stacking layer length • 400 mm fixed travel distance • 1 - 9999 travel cycles • 40 - 80 psi suggested air pressure • Stacking platform consists of 550 mm L x 390 mm W x 660 mm H <p>RM 20,196</p>	<p>BD-10ML</p> 	<p>Bottletop Electrolyte Digital Dispenser with 1 L SS Bottle</p> <ul style="list-style-type: none"> • Uses a floating piston design with no seals to wear or replace, minimizing service downtime • 4 PP bottle adapters, 45/40mm, 45/33mm, 33mm/28, 33mm/24 and filling tube • One 1000 mL stainless steel bottle <p>RM 2,750</p>

MSK-AFA-III	MSK-140	MSK-T-10
		
<p>Compact Tape Casting Film Coater with Dryer, Vacuum Chuck & Film Applicator</p>	<p>Compact Heating Sealer for Sealing Laminated Aluminum Case of Pouch Cells</p>	<p>Compact Precision Disc Cutter with Standard 16, 19, 20 Dia. mm Cutting Die</p>
<ul style="list-style-type: none"> • 10 - 550 m stroke length adjustable by using adjustable position switch • 100 mm adjustable doctor blade included • 120 l/m oilless vacuum pump included for immediate usage • 0 - 100 mm/sec variable traverse speed • Max heating temperature is up to 200°C 	<ul style="list-style-type: none"> • Max sealing length up to 190 mm • Sealing width up to 3.2 mm • Sealing thickness up to 0.19 - 0.3 mm • 25 mm die opening • 0 - 0.7 MPa adjustable sealing pressure • 50 - 300°C adjustable sealing temperature • 0 - 99 Seconds adjustable heating timer • Soft sealing blade (with tab in between) 	<ul style="list-style-type: none"> • Cr plated steel as major structural material • 16, 19, and 29 mm precision dies are included • Compact size which can be put into glove box through air lock chamber • Can be customized up to 2mm diameter dies
<p>RM 36,690</p>	<p>RM 24,288</p>	<p>RM 17,450</p>

VACUUM DESSICATOR

EQ-SP-VC-3



Vacuum-able Dessicator with Internal Pump

- 11 liter capacity with inside dimension of 320 W x 240 D x 260 H mm
- Delicate appearance with solid and rigid structure made of high intensity polycarbonate materials
- Dust, mildew, and moisture proof
- Can be operated without a power supply and design is free of fragile moisture absorption reading electronics

RM 1,800

SCREEN PRINTING COATER

EQ-SPC-2



Desk-top Screen Printing Film Coater

- Dia. 150 mm sample stage
- One Vacuum Chuck & One 120 l/m Oilless Vacuum Pump are included for quick usage
- Screen frame adjusting: 20° adjustable
- Vacuumed area: 10 x 10 mm
- Max. 155 x 255 mm printing area

RM 13,480

VACUUM GLOVE BOX

EQ-VGB-2Y













Bench top Transparent Glove Box with Pressure Control System

- Transparent polycarbonate main chamber casing with dimensions: 875(L)x480(W)x500(H) mm up to 675 Torr vacuum level
- Air-lock chamber with dimensions: 230(L)x220(W)x230(H) mm up to 100 Torr vacuum level
- One mechanical vacuum gauge and two solenoid valves are installed for pressure control
- Two needle valves for main chamber and air-lock chamber are installed for immediate use
- One pair of Latex Gloves are included for immediate use

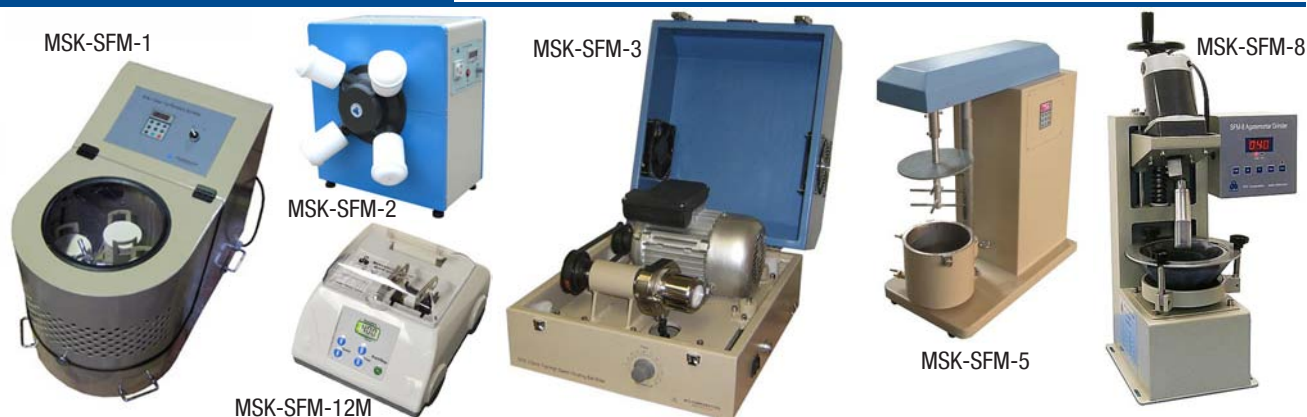
RM 13,300

FURNACE & GLOVE BOX ACCESSORIES

<p>EQ-TW-3A</p>	<p>EQ-2XZ</p>	<p>EQ-YTP-550-LD</p>
		
<p>Single Step Rotary Vane Vacuum Pump</p>	<p>Double Stage Rotary Vane Vacuum Pump</p>	<p>Heavy Duty Double Stage Rotary Vane Vacuum Pump</p>
<ul style="list-style-type: none"> • 187 liter/min • Vacuum up to 0.075 Torr • 1/2 HP 360 W • 20 ml volume of oil • Oil Mist Reduction Unit with KF-25 Adapter and Quick Clamp are included 	<ul style="list-style-type: none"> • 120 liter/min • Vacuum up to 0.004 Torr • Traps particles up to 0.3 microns • With Oil Trap, Exhaust Filter, Bellow & KF-D25 Inlet 	<ul style="list-style-type: none"> • 220 liter/min • Vacuum up to 0.003 Torr • 550 W (atm) • With Exhaust Filter, KF25D Adaptor and Clamp
<p>RM 3,825</p>	<p>RM 8,250</p>	<p>RM 12,580</p>
<p>EQ-VPC-30D</p>	<p>EQ-VPC-30</p>	<p>EQ-OM-OS524E</p>
		
<p>Dual Valve Digital Vacuum & Pressure Gauge</p>	<p>In-Line Digital Vacuum Pressure Controller</p>	<p>Handheld Infrared Thermometer with Laser Pointer</p>
<ul style="list-style-type: none"> • Range up to 800 Torr • +/- 0.25% full-scale • Measurement in: psia, psig, mm Hg, " Hg, " H2O, mBar, Atm, Torr, kPa • For clean, dry, noncorrosive and inert gas • 1/8" NPT female connection 	<ul style="list-style-type: none"> • Range up to 800 Torr • +/- 0.25% full-scale • Measurement in Torr • For clean, dry, noncorrosive and inert gas • 1/8" NPT female connection 	<ul style="list-style-type: none"> • Measurement range from 538°C - 2482°C • Built-in Laser sighting in Circle & Dot configurations • 100 ms response time • Spectral response within 2 to 2.5 microns
<p>RM 11,620</p>	<p>RM 8,750</p>	<p>RM 11,580</p>
<p>EQ-MTM-3</p>	<p>EQ-MTS02</p>	
		
<p>Three Channels Temperature Monitoring System</p> <ul style="list-style-type: none"> • Computerized via an RS232 comm port (cable included) • Three buzzing alarms • Accept K, S and B type of thermocouple • Cut off power function when temperature exceeds the set point 	<p>Temperature Control System for MTI Furnace via Computer</p> <ul style="list-style-type: none"> • Can be used for MTI furnaces with 518P controller except GSL-1100X-S, KSL-1200-S and OTF-1200X-S. • One control module, serial port controller cable and one disc of software package are included 	
<p>RM 11,580</p>	<p>RM 1,089</p>	

<p>GPH-DHDO</p>	<p>EQ-MTC-C4</p>	<p>EQ-MTC-A5</p>	<p>EQ-MTC-Z3</p>
			
<p>PPM Grade Dual Column Inert Gas Purifier</p> <ul style="list-style-type: none"> • Built-in Regeneration Heater which can be heated up to 300°C • It removes H₂O, O₂, CO, CO₂, H₂ and NMCH's to <0.1 ppm from any 99.9% purity inert gas. • Max pressure up to 0.5 MPa • Max flow rate up to 400 mL/min 	<p>WK518P Temperature Control Unit</p> <ul style="list-style-type: none"> • The controller uses PID via SCR power control with 30 segments programmable. • Designed for lab furnaces heated by resistant wire, SiC and MoSi₂ elements up to 1800°C at Max 4KW • Accept J, K, T, E, N, B, R and S thermocouple input 	<p>Single Zone Precision Temperature Control Unit</p> <ul style="list-style-type: none"> • The controller uses PID via SCR power control with 30 segments programmable. • Designed for precision control high temperature furnace from 1000°C - 1500°C with heating elements of resistant wire or SiC • Accept K, S, R, J, B, C and D thermocouple input 	<p>Three Zone Precision Temperature Control System</p> <ul style="list-style-type: none"> • The controller uses PID via SCR power control with 30 segments programmable. • Designed for precision control three zone tube furnace from 100°C - 1500°C with heating elements of resistant wire or SiC. • Accept K, S, R, J, B, C and D thermocouple input
<p>RM 12,320</p>	<p>RM 5,600</p>	<p>RM 8,850</p>	<p>RM 29,403</p>
<p>EQ-CGM-2F</p>	<p>EQ-GSL-3F-SS</p>	<p>EQ-W3000</p>	<p>EQ-RH-800</p>
			
<p>Two Channel Trace Gas Mixer</p> <ul style="list-style-type: none"> • Two Flowmeter with flow rate range from 16 to 160 mL/min • Mechanical Pressure Gauge (mixing tank): 0 - 1.0 MPa, (0.02 MPa/grit) • Three Pipe fittings for 1/4" pipe (nylon or stainless steel) • No power required 	<p>Gas Mixing Control Station</p> <ul style="list-style-type: none"> • Three Channel Flowmeter and Valves are provided • To control up to 3 gases flowing through vacuum sealed MTI tube furnaces • Mechanical Pressure Gauge (mixing tank): -0.1-0.15 MPa, (0.01 MPa/grit) 	<p>Trace Oxygen Analyzer</p> <ul style="list-style-type: none"> • KF40 Connector is provided • Three auto-ranging scales available: 0.01 ppm to 3000 ppm • ZrO₂ fuel-cell as the oxygen sensor • Max pressure up to 90 psi • Up-limit and low-limit alarm signal programmable 	<p>Precision Humidity Analyzer</p> <ul style="list-style-type: none"> • KF25 Flange is provided • Measure humidity level up to 999.9 ppm • Working pressure range is 0.1 Pa - 30 MPa • Gas flow rate range is 1-5 lpm • Alarm signal when higher than 20 mA or lower than 4 mA
<p>RM 5,800</p>	<p>RM 18,780</p>	<p>RM 16,800</p>	<p>RM 17,495</p>
<p>EQ-RH-606B</p>	<p>EQ-GD-01</p>		<p>EQ-GD-01</p>
			<p>Laboratory Gas Drying Unit</p> <ul style="list-style-type: none"> • Max working pressure: 90 psig • Max efficiency at 0.1 scfm • 50 grams of water capacity • Inlet and outlet connectors are SS 1/8" NPT female fittings with molded polycarbonate column. • Indicating dessicant turns blue when active and turns pink when exhausted
<p>RM 1,580</p>	<p>RM 1,369</p>		<p>RM 1,369</p>

LABORATORY MILL



Model	Speed (rpm)	Dimension L x W x H (mm)	Features	Price
MSK-SFM-1	Main plate: 30 -350 Mixing tank: 0 - 300	450 x 490 x 530	<ul style="list-style-type: none"> Granularity can be as small as 0.1 micron Digital display speed in rpm Timer controls major platen's running time from 1 - 999 min Timer control tank rotation time from clockwise to anticlockwise direction from 1 - 99 min 4 alumina jars with various size of YSZ mill balls are included 	RM 31,806
MSK-SFM-2	Main plate: 0 -100 Mixing tank: 60 - 700	450 x 490 x 530	<ul style="list-style-type: none"> Granularity can be as smaller than 0.5 micron Three dimensions rotation: major platen, individual tank and up-down gravity Digital display the speed of tank rotation in rpm Running time can be set from 1 - 999 min Four 1000 ml nylon jars, water-proof by rubber O-ring are included Four sets of agate milling balls included (96 balls in total) 	RM 19,905
MSK-SFM-3	1200	405 x 365 x 260	<ul style="list-style-type: none"> Granularity can be as small as 0.1 micron Timing range from 0 - 120 min One 50 ml alumina jar with one set Zirconia mill balls are included 	RM 15,750
MSK-SFM-5	0 - 1200	700 x 600 x 1100	<ul style="list-style-type: none"> Granularity can be as small as 1 micron 5 liter stainless steel container with water cooling jacket Programmable controller to set time, speed and rotation direction 	RM 14,150
MSK-SFM-7	320	330 x 300 x 530	<ul style="list-style-type: none"> To produce coating slurry by mixing small batch of chemical and compound under vacuum to remove gas bubble and protect sample from oxidation Built in vacuum pump with -0.08 - 0.09 MPa Vibration plate frequency at 1 kHz One 150 ml stainless steel and one 500 ml aluminum container are included 	RM 15,378
MSK-SFM-8	Mortar: 0 -10 Pestle: 0 - 80	240 x 240 x 500	<ul style="list-style-type: none"> Granularity can be as small as nanometers 5" agate mortar and agate head pestle Grinding pressure is adjusted by spring Grinding time can be set according to using the automated controller 	RM 12,830
MSK-SFM-12M	2700 - 4000	170 x 210 x 135	<ul style="list-style-type: none"> 3 x 2.0ml tube can be loaded on the device simultaneously Timer can be set within 3 sec to 3 min Two types of Pure High Impact Zirconia Beads are included for rapid milling The optimized mixing motion causes rapid milling through constant high velocity impact from the hardened micro-beads chosen 	RM 4,350

THREE ROLL MILLS



Advantages of Torrey Hills Three Roll Mills:

- Three roll mill rollers are precision ground 420J2 stainless steel to prevent rust or erosion. The hardness is rated at HR50-60 for reliable long-life usage.
- Rolls are cored for either cooling for heating. Manifold, valve, and collection tank are standard.
- Rollers are ground to 5um concentricity and 0.5um surface finish for precise applications
- Higher throughput than most competitors' models
- Variable speed control allows adjustable/slower speed runs
- Emergency pull cord on top of the machine as an extra safety feature
- Roller spacing and adjustment is set manually with quick engagement mechanism by the use of four small hand wheels.
- Gap spacing easy to adjust, and remains consistent throughout operation

Model	T65 Lab Model *The Workhorse*	T6x12 Three Roll Mill Model
Roller Material	Stainless Steel or Ceramic	Hardened Cold Cast Steel
Diameter of Roller	65 mm	142 mm
Length of Roller	127 mm	305 mm
Roller Speed Ratio	1 : 2 : 4	1 : 2.35 : 5.4
Speed of Roller	0 - 108 (Slow Roller); 0 - 216 (Mid Roller); 0 - 432 (Fast Roller)	40 (Slow Roller); 94 (Mid Roller); 217 (Fast Roller)
Motor Power	0.55 kW	2.2 kW
Dimensions	635 x 280 x 381 mm	840 x 840 x 890 mm
Price	RM 33,850	RM 63,350

HANTECH



KOREA

FURNACE




Box Furnace	Atmosphere Box Furnace	Atmosphere Box Furnace
C-14P	M-A15P	M-A1400
<ul style="list-style-type: none"> • Temp: Max 1000°C • Volume: 3 liter • Heater: Kanthal A1 Molding Heater (Heated on three sides) • Programmable PID controller • Dimension: 300 x 460 x 390 mm 	<ul style="list-style-type: none"> • Temp: Max 1100°C • Volume: 4.5 liter • Programmable PID controller • Quartz tube: 50 (O.D)/46(I.D) x 300(L) mm • Dimension: 300 x 460 x 390 mm 	<ul style="list-style-type: none"> • Temp: Max 1400°C • Volume: 1.5 liter • Programmable PID controller • Mullite tube: 53 (O.D)/45(I.D) x 300(L) mm • One side blocked type tube • Heater: SiC Heater (J type) • Gas mask, gas port, end mask • Dimension: 430 x 670 x 460 mm
RM 4,850	RM 9,850	RM 19,780

TUBE FURNACE


BSG-1200X	BSO-1200G
	
Multi-position Mini Tube Furnace	Split-able Mini Tube Furnace
<ul style="list-style-type: none"> • Quartz tube, thermal blocks, silicone o-rings, and stainless steel vacuum sealing flanges are included for quick usage • Max heating rate is up to 20°C/min • Quartz tube can stand heat until 1200°C • High purity alumina fiber insulation with heavy duty case 	
RM 9,980	RM 9,980

MUFFLE FURNACE

Model	Chamber Dimension L x W x H	Volume	Heating Rate	Working Temp	Heating Element	Price
BSK-1200X	12" x 8" x 5"	7.2 L	Max: 20°C /min	Cont: 1100°C	Resistance Wire	RM 10,800
BSK -1200X-SU	8" x 8" x 8"	8 L	Max: 20°C /min	Cont: 1100 °C	Resistance Wire	RM 18,780
BSK-1700X-XS	6" x 6" x 7"	4.2 L	Max: 20°C /min	Cont: 1650 °C	MoSi ₂ Rod	RM 27,800
BSK -1700X -M	6" x 6" x 6"	3.5 L	Max: 20°C /min	Cont: 1650°C	MoSi ₂ Rod	RM 22,380
BSK -1700X -S	4" x 4" x 4"	1 L	Max: 20°C /min	Cont: 1650 °C	MoSi ₂ Rod	RM 16,320




BSK-1200X




BSK-1200X-SU

VACUUM OVEN

Model	BS-DZF-6020	BS-DZF-6050	BS-DZF-6050A
Max Working Temperature	Ambient - 250°C		Ambient - 500°C
Capacity	25 Liter	53 Liter	
Chamber Dimension	12" x 12" x 11"	16.3" x 13.5" x 14.5"	
Features	<ul style="list-style-type: none"> • The chamber is designed with stainless steel and welded with bracing pieces • A good vacuum seal is achieved by silicone door gasket and positive latch door • Vacuum port and gas inlet are installed to create gas environment in the chamber 		
Price	RM 5,480	RM 6,450	RM 7,800



BS-DZF-6020



BS-DZF-6050A

LED DRY CABINET

- Suitable for storing: photographic & optic lens, cameras or digital photography, audiovisual, precise instruments, food, paper materials, films, chemical and medical materials, etc.
- Slip layer board make the interspaces adjustable.
- Energy saving design: low electricity consumption resurgence, no heating, no condensation dripping, absence of fan noise



BS-DC-FCM60



BS-DC-FCM80



BS-DC-FCM100



BS-DC-FCM120

Model	Capacity	Dimension L x W x H (mm)	Features	Price
BS-DC-FCM60	65 Liter	Outer: 400 x400 x 475 mm Inner: 398 x 375 x 400 mm	<ul style="list-style-type: none"> • Humidity range: 20-60%RH • 1 pcs of shelves • Humidity adjustable, energy saving design, digital LED display and control • 1.0mm thick steel body, rustproof paint, 4mm toughened glass, import sensor • Moisture absorbs continuously with sustention for 24 hours 	RM 920
BS-DC-FCM80	84 Liter	Outer: 400 x400 x 620 mm Inner: 398 x 375 x 545 mm	<ul style="list-style-type: none"> • Humidity range: 20-60%RH • 2 pcs of shelves • Humidity adjustable, energy saving design, digital LED display and control • 1.0mm thick steel body, rustproof paint, 4mm toughened glass, import sensor • Moisture absorbs continuously with sustention for 24 hours 	RM 1,280
BS-DC-FCM100	115 Liter	Outer: 400 x400 x 760 mm Inner: 398 x 375 x 685 mm	<ul style="list-style-type: none"> • Humidity range: 20-60%RH • 2 pcs of shelves • Humidity adjustable, energy saving design, digital LED display and control • 1.0mm thick steel body, rustproof paint, 4mm toughened glass, import sensor • Moisture absorbs continuously with sustention for 24 hours 	RM 1,880
BS-DC-FCM120	128 Liter	Outer: 400 x400 x 865 mm Inner: 398 x 375 x 790 mm	<ul style="list-style-type: none"> • Humidity range: 20-60%RH • 3 pcs of shelves • Humidity adjustable, energy saving design, digital LED display and control • 1.0mm thick steel body, rustproof paint, 4mm toughened glass, import sensor • Moisture absorbs continuously with sustention for 24 hours 	RM 2,100

BATTERY ANALYZER



Model	Features	Price
BS-CT-3008-5V3A	<ul style="list-style-type: none"> An eight-channel battery analyzer to analyze small coin cells and cylindrical batteries from 0.002 mA to 1 mA, up to 5V Provides most applications in battery testing fields such as electrode materials research, battery performance test, small-scale battery formation, capability grading, battery pack testing and etc 	RM 6,800
BS-CT-3008-5V1MA	<ul style="list-style-type: none"> An eight-channel battery analyzer to analyze small coin cells and cylindrical batteries from 0.1 mA to 10 mA, up to 5V Provides most applications in battery testing fields such as electrode materials research, battery performance test, small-scale battery formation, capability grading, battery pack testing and etc 	RM 7,800
BS-CT-3008-5V10MA	<ul style="list-style-type: none"> An eight-channel battery analyzer to analyze small coin cells and cylindrical batteries from 6.0 mA to 3000 mA, up to 5V Provides most applications in battery testing fields such as electrode materials research, battery performance test, small-scale battery formation, capability grading, battery pack testing and etc 	RM 7,500

MASS FLOW CONTROLLER

BS-MFC-1



- Supply voltage: DC15V / 0.5A
- Accuracy: $\pm 2\%$ FS
- Output signal: 4 - 20mA
- Control accuracy: $\pm 1\%$ FS (CC)
- Computer Interface: RS485
- Linearity: $\pm 2\%$ FS
- Zero: Digital Zero
- Working pressure range: 0.1 - 0.5 MPa
- Program features: multi-segment program set flow rate (configurable)
- Working temperature: -10 to + 50°C
- Interface Type: According to customer's request
- Flow range: 0 - 100, 200, 300, 500 1000 SCCM (ml / min)

RM 4,700

VACUUM PUMP



Oilless Vacuum Pump	Single Stage Vacuum Pump	Single Stage Vacuum Pump	Two Stage Vacuum Pump
BS-AP-1400V	BS-VP160	BS-VP170	BS-VP2200
<ul style="list-style-type: none"> • 120 l/m pumping speed • 80 - 100 Torr ultimate pressure • Less than 60 dB noise level 	<ul style="list-style-type: none"> • 170 l/m pumping speed • 6.0 CFM • 150 microns 	<ul style="list-style-type: none"> • 200 l/m pumping speed • 7.0 CFM • 150 microns 	<ul style="list-style-type: none"> • 340 l/m pumping speed • 12.0 CFM • 15 microns
RM 1,400	RM 750	RM 970	RM 1,250

SINGLE GAS DETECTOR

GASTECH's new improved ToxiPro has three visual alarm windows for increased worker safety. Even better, each alarm window comes standard with both high visibility yellow and red alarm LEDs. In a warning condition, the yellow lights will flash and the lights in all three windows will chase. In a danger condition, the red LEDs will flash and the lights in all three windows will chase. Plus, the improved ToxiPro has an audible alarm that is 10% louder than previous models! It has many alarm features, including an optional vibrating alarm and sound pattern and set points which are now fully user customizable.

General Features:

- Electrochemical toxic gas sensor or Galvanic oxygen sensor
- Loud two tone alarm rated at 100dB at 10 cm
- Stores latest 20 events, including sensor type, max reading, average reading, start time and stop time
- Continuous real-time gas readings, peak, STEL (if enabled), TWA (if enabled) and time of day readings
- Compact and rugged, clear polycarbonate with TPE overmold
- Automatic zero calibration with integrated self-check program



Toxic Gas- Single Gas Detector with Datalogging & Vibrating Alarm		
Model	Description	Price
54-45-01VD	ToxiPro - Carbon Monoxide (CO)	RM 2,450
54-45-02VD	ToxiPro - Hydrogen Sulphide (H ₂ S)	RM 2,450
54-45-03VD	ToxiPro - Sulphur Dioxide (SO ₂ range 0-100ppm)	RM 2,980
54-45-09VD	ToxiPro - Nitrogen Dioxide (NO ₂)	RM 3,185
54-45-10VD	ToxiPro - Hydrogen Cyanide (HCN)	RM 3,185
54-45-13VD	ToxiPro - Phosphine (PH ₃)	RM 3,185
54-45-18VD	ToxiPro - Chlorine (CL ₂ specific)	RM 3,185
54-45-19VD	ToxiPro - Carbon Monoxide (CO-H CO Minus)	RM 2,920
54-45-21VD	ToxiPro - Ammonia (NH ₃)	RM 2,980
54-45-90VD	ToxiPro - Oxygen (O ₂)	RM 2,680

MULTI GAS DETECTOR

Real-time readings of up to four gases simultaneously, one button operation and calibration, easy to read LCD display, audible and visual alarms, event logger, IrDA port, optional sample draw pump, rugged, compact and affordable - MultiPro Gas Detector. There are two optional battery packs for user to choose which are rechargeable Li-Ion version includes charger or Alkaline (3 AA) battery packs.

General Features:

- Meets IPX5 water standard
- Front-mounted LCD displays readings up to 4 sensor channels
- Loud warbling, two-tone alarm rated at 92 dBA at one foot
- True one-button operation including automatic calibration
- Polycarbonate case with overmolded rubber boot
- Automatic zero calibration with integrated self-check program



Multi-Pro Multi Gas Detector with Datalogging & Vibrating Alarm		
Model	Description	Price
54-48-300ADY8	MultiPro Alkaline LEL/O2	RM 3,580
54-48-301ADY8	MultiPro Alkaline LEL / O2 / CO	RM 5,275
54-48-302ADY8	MultiPro, Alkaline LEL / O2 / H2S	RM 5,275
54-48-314ADY8	Multipro Alkaline LEL / O2 / CO / H2S (Duo-Tox)	RM 5,275
54-48-300NYD8	MultiPro Li-Ion LEL/O2	RM 5,750
54-48-301NYD8	MultiPro Li-Ion LEL / O2 / CO	RM 5,750
54-48-302NYD8	MultiPro Li-Ion LEL / O2 / H2S	RM 5,750
54-48-314NYD8	MultiPro Li-Ion LEL / O2 / CO / H2S (Duo-Tox)	RM 5,750
54-48-314NYDV8	MultiPro Li-Ion LEL / O2 / CO / H2S (Duo-Tox) : Value Pack	RM 8,680

COMBUSTION GAS ANALYZER



The IMR1000 is a hand held pocket size stack gas analyzer for combustion tests on boilers, burners and etcetera.

General Features:

- Rugged plastic case with protective boot and magnet
- Fuel types to be analyzed are Natural Gas, Propane, Butane, LPG and Light Oil
- Parameters measured are Oxygen, Carbon Monoxide, Carbon Monoxide (ambient), Nitric Oxide and Flue-Gas Temperature
- Calculated values are Combustion Efficiency, Excess Air, Carbon Dioxide and CO corrected to 0% O₂
- Measuring units for the analyzer are ppm and mg/m³
- The analyzer operating condition is within 0 - 40°C, 10 - 90% RH, non-condensing
- Thermocouple Type K as gas sampling probe with (0.25" diameter, 9" length with 9 ft hose length
- Battery operated (4 x AA)

Model	IMR1000-3	IMR1000-4
Gas Measurement	<ul style="list-style-type: none"> • O₂ : 0 -21% with resolution 0.1% / ±0.2% • CO : 0 - 4000 ppm with resolution 1 ppm/±10 ppm < 100 ppm • CO₂ : 0 -30% with resolution 1.0% • Efficiency: 0 - 99.9% with resolution 0.1% • Excess Air : 0 - 250% with resolution 0.1% • CO/CO₂ : 0 - 0.999% with resolution 0.0001% 	<ul style="list-style-type: none"> • O₂ : 0 -21% with resolution 0.1% / ±0.2% • CO : 0 - 4000 ppm with resolution 1 ppm/±10 ppm < 100 ppm • CO₂ : 0 -30% with resolution 1.0% • Efficiency: 0 - 99.9% with resolution 0.1% • Excess Air : 0 - 250% with resolution 0.1% • CO/CO₂ : 0 - 0.999% with resolution 0.0001% • NO : 1 ppm/±2 ppm < 30 ppm with resolution ±5 ppm > 30 ppm
Price	RM 6,598	RM 10,650

Model	IMR1400
General Features	<ul style="list-style-type: none"> • Illuminated display with simultaneous display of 8 measured variables • Printout of all measured and calculated parameters • Gas sampling probe, length 10.5" (270mm), NiCrNi, flexible hose 11.5 ft. (3,5m) • Combustion air probe, length 5" (130mm), line 11.5 ft. (3,5m) • 7 programmed and 5 programmable fuels • Automatic and manual CO overflow shut-off • Operating temperature 50°F..104°F (10°C..40°C) • Storing temperature -4°F..122°F (-20°C..50°C) • Interface RS 232 • Dimensions width: 16"(425mm) x 7"(185mm) x 11"(290mm)
Technical Data	<ul style="list-style-type: none"> • O₂, Oxygen 0-21% • CO₂, Carbon dioxide • CO, Carbon monoxide 0 - 2000 ppm • NO, Nitrogen oxide 0 - 2000 ppm • NO₂, Nitrogen dioxide 0 - 100 ppm • SO₂, Sulfur dioxide 0 - 4000 ppm • HC, Hydro Carbon 0- 100% LEL • TG Gas temperature: -20°C..1200°C • TA Air temperature: -20°C..120°C • Combustion Efficiency: 0-99,9 % • Lambda/excess air 1,0-9,99 • Losses 0- 99.9%
Price	RM 19,650

Portable, continuous measuring flue gas analysis instrument housed in an aluminum case for measuring air temperature, flue gas temperature, Oxygen O₂, Carbon monoxide CO (H₂ comp.), Nitric oxide NO, Nitric dioxide NO₂, Sulfur dioxide SO₂, Hydrocarbon HC, losses, excess air, combustion efficiency, draft, Carbon dioxide CO₂ and soot. Simultaneous display of eight measured parameters on the illuminated LCD. Integrated thermal printer and RS232 interface. Measurement printout or service printout, both include date,time and fuel type. ppm,mg,mg/kWh,mg(ref. O₂) units are selectable. Automatic and manual CO-bypass. Memory for 220 measurements. Case has additional space for spare parts.



IMR1400

Please contact us for specific gas measurement range for exact price according to your requirement:

- IMR 1400 P O₂, CO
- IMR 1400 PL O₂,CO, NO
- IMR 1400 PS O₂, CO, NO, SO₂
(NO₂ or HC instead of SO₂)

Model	IMR2800
General Features	<ul style="list-style-type: none"> • Latest sensor technology for a more accurate measurement and longer life time • Improved interior design for easier service and better unit protection • Continuously and simultaneously measuring up to 18 parameters • Larger display for a better reading • Portable combustion gas analyzer housed in a rugged aluminum case • Simultaneous measurement of O₂ Oxygen NO₂ Nitrogen dioxide • 23 Fuels are programmed – 4 fuels are programmable • Automatic zero calibration • Integrated self-check program • Simultaneous display parameters on the illuminated display • Printer with programmable print out cycles • Standard deviation and average value calculation • Draft measurement with optional upgrade for differential draft and velocity measured with a Pitot tube • Unit selection : ppm – mg/Nm³ – mg/Nm³(ref O₂) • Gas sampling probe E – length 0.8 ft (250mm), hose 8 ft (2.5m) • Rechargeable battery with charger
Gas Measurement	<ul style="list-style-type: none"> • O₂, Oxygen 0 - 21% • CO₂, Carbon dioxide 0 - CO₂ max (calculation) • CO₂, Carbon dioxide 0 - 20% (NDIR) • CO, Carbon monoxide 0 - 2000/4000 ppm or 0-10/20 Vol. % • NO, Nitrogen oxide 0 - 2000 ppm • NO₂, Nitrogen dioxide 0 - 100 ppm • NO_x, Nitrogen oxide 0 - NO_x max • SO₂, Sulfur dioxide 0 - 4000 ppm • HC, Hydrocarbon 0- 100% LEL • NH₃, Ammonia 0 - 1000/5000 ppm • HCl, Hydrogen Chloride 0 - 200 ppm • H₂, Hydrogen 0 - 10000 ppm • Cl₂, Chlorine 0 - 5000 ppm • Draft - 40 to + 40 hPa • Lambda/excess air 0-999% • Losses 0- 99.9%
Price	RM 27,340



Please contact us for specific gas measurement range for exact price according to your requirement

LIQUID AUTOSAMPLER



Model	HT300A
Features	<ul style="list-style-type: none"> • 110 positions rotating tray for 2 or 2.5 ml vials • Supports the use of 4 solvent vials of 10 ml each • Can be controlled by keypad or by PC using software • Hot and cold needle injections (Dual simultaneous injections) • Small volume, Priority, Ambient headspace and Multi phase Sampling available • Handle up to 100µL syringe volume • Injection speed up to 100µL/sec • Bubble elimination up to 15 pull up strokes
Price	RM 34,000

BENCH TYPE BIOREACTOR

BE MARUBISHI's Photo Bioreactor was especially designed for cultivation of microalgae and callus. Fine bubbles from 30 micron stainless fiber filter creates high gas transfer coefficient. The low shear stress homogenization system makes vertical circulation flow minimalizing damage to cells. The highly effective lighting system stimulates photosynthesis.



MDFT-μ	MDFT-500
Micro Fermentor MDFT μ100/100 mL	Eco Desk-Top Fermentor 5 L
<ul style="list-style-type: none"> • Suitable for minimum volume fermentation • The vessel made of Pyrex glass, heat resistance, and autoclavable • Silicone made upper head cap • Magnet stirrer with DC brushless motor give accurate speed control • Air supply with single nozzle sparger, flow meter, and 0.22 μ air filter • 6 mm dia. pH and DO electrode can be installed • Recorder output for temperature and stirring speed • Temperature control by silicone rubber heater and cooling pipe • Compact shape console saves space- 	<ul style="list-style-type: none"> • The vessel made of Pyrex glass, heat resistance, and autoclavable • Impeller type turbine, fullzone, and paddle complete with baffle for enhanced mixing • Temperature control by silicone rubber heater and cooling water • Air inlet to the vessel pass filter size 0.2 micron through air sparger and control by rotameter type needle valve • 4-20 mA for recorder output • Agitation system is sealed by mechanical seal or non-sealed magnetic driving system • Both internal and external electropolish grinded No. 300 buff
RM 26,350	RM 24,750

BIOTECHNOLOGY & LIFE SCIENCE



Multi Channel Indicator/Controller for pH, Dissolved Oxygen & Anti Foam	
Model	MCI-6C
Features	<ul style="list-style-type: none"> • Measurement in ppm, mg/l or % saturation • Two 0/4...20mA current output, galvanically isolated • Password protection against accidental parameter change • Pressure and Salinity input for automatic correction • Pulse length or pulse frequency proportional control • Integrated PI controller, pulse length or pulse frequency • Two relay as limit contact with on/off delay timer • One relay as alarm contact and one relay as wash contact
Application Areas	<ul style="list-style-type: none"> • D.O. Range: Saturation 0-500%; COncentration 0-20 ppm • D.O. Accuracy: 0.5% of measured value • pH Range: -1 to 15 pH • mV Range: -1500 to +1500 mV • pH/mV Accuracy: 0.03 pH/62 mV • Temperature Input: PT100/PT1000 (jumper selectable) • Current Putput: 2x0/4-20 mA • Control Function: PI Controller; Pulse length & pulse frequency
Price	RM 32,750

INTELLIGENT BIOREACTOR

BIONEER SERIES

- PI, HA/LA or PID control ensures accuracy
- 8 control channels (6 standard & 2 optional channels)
- DO cascade control with thermal mass controller (optional) & selectable control order
- Graphic chart indication for process value of respectively control items
- Indication for total output time of addition pump
- Electrode checking function for pH & DO
- Diagnosis function for system breakdown
- Memory card for all control data
- Troubleshooting by conversation help function
- 10 steps program control
- Built-in sampling timer for optional auto-sampler
- RS-232 port as standard & LAN port as optional



GRAPHIC PANEL



BIONEER-5N

R & D SCALE FERMENTOR



MSJ SERIES

(10, 20, 30, 40, 50, 70 & 90 L)

All surfaces in product contact are fabricated from SS316 material. All internal and vessel welds are ground smooth & mechanically polished. All interior surfaces are polished to Ra<0.2 micron. Either top entry or bottom entry driving system is available with double mechanical seal. Versatile use for microbes with standard & plant tissue or mammalian cell with special modification. Flexible design suit to the the condition of customer's installation site. Either modular type controller or multi-channel BIO-Process control (MDIAC-S6) will meet various kind of demand for measurement & control of culture condition. Computer coupling with the MDIAC-S6 enable intelligent control system construction.

PILOT PLANT FERMENTOR

The process control system has the following items:

- Temperature of the internal measurement
- pH measurement
- Dissolved oxygen measurement
- Agitation speed measurement
- Air flow rate measurement
- Carbon dioxide flow rate measurement
- Vessel pressure measurement
- ORP measurement and indication
- Drain pipe end temperature measurement
- Sterile piping header pressure



MPF SERIES

(100, 200, 300, 400, 500 L - OTHER SIZE AVAILABLE UPON REQUEST)

All surfaces in product contact are fabricated from SS316 type. All internal and vessel welds are ground smooth & mechanically polished. All interior surfaces are polished to Ra<0.2 micron. Either top entry or bottom entry driving system is available with double mechanical seal. Versatile use for microbes with standard & plant tissue or mammalian cell with special modification. Flexible design suit to the the condition of customer's installation site. Bioprocess automatic operation & control system (BPACS) are used to control temperature, pH, agitation speed and other parameters, which for automation control are sterilization, medium transfer, and others. A graphic touch panel is used by operator to control system's data display, parameter setting & switching operation.

O₂ & CO₂ ANALYZERS



Model 901	Model 902D	Model 902P	Model 905	Model 906	Model 907
Model 901	Model 902D	Model 902P			
Headspace Oxygen Analyzer	Headspace Oxygen/Carbon Dioxide Analyzer	Oxygen/Carbon Dioxide Analyzer			
Primarily used for the measurement of residual oxygen in gas-flushed food packages	Primarily used for testing modified atmosphere packages and other containers	Primarily used for research processes, gas blending, biotech and other system			
<ul style="list-style-type: none"> Measuring range from 0.0 to 100% O₂ 0.1% O₂ resolution Using proprietary electrochemical cell to sense O₂ Internal pump that draws 5cc/sec with 2 - 12 sec adjustable timer Battery operated (Four 'AA' NiMH rechargeable batteries) Dimension of 200 x 100 x 40 mm Included Consumables: 200 foam septas, 2 luer fit needles, 2 particulate filters, 2 liquid block filters Can be used for food analysis such as meats, dairy products, snack foods, baked foods, prepared meals, coffee, pet food and etcetera 	<ul style="list-style-type: none"> Miniature diaphragm pump with 5cc/sec flow and 2 - 12 sec adjustable timer 12" length of double reinforced sample prob with exhaust port vents to air Dimensions of 249 x 102 x 254 mm Can be used for food analysis such as meats, dairy products, snack foods, baked foods, prepared meals, coffee, pet food and etcetera <p>Oxygen Channel</p> <ul style="list-style-type: none"> Proprietary electrochemical cell as sensor O₂ ranges from 0 - 100% 0.1% O₂ resolution <p>Carbon Dioxide Channel</p> <ul style="list-style-type: none"> Solid-state Infrared cell as sensor CO₂ ranges from 0 -20% or 0 - 100% 	<ul style="list-style-type: none"> Miniature diaphragm pump with 5cc/sec flow and 2 - 12 sec adjustable timer Front panel fitting with luer connection for disposable filter and exhaust port vents to air or tube outlet for recirculation to close system Dimensions of 249 x 102 x 254 mm Can be used in bioreactor systems, gas blending systems, fruit storage areas, fermentation, biofuel experiments, algae offgas analysis and etcetera <p>Oxygen Channel</p> <ul style="list-style-type: none"> Proprietary electrochemical cell as sensor O₂ ranges from 0 - 100% 0.1% O₂ resolution <p>Carbon Dioxide Channel</p> <ul style="list-style-type: none"> Solid-state Infrared cell as sensor CO₂ ranges from 0 -20% or 0 - 100% 			
RM 9,900	RM 15,350	RM 21,380			
Model 905P	Model 906	Model 907			
Oxygen Analyzer for Process & Research	Carbon Dioxide Analyzer for Process & Research	Portable Oxygen/Carbon Dioxide Analyzer			
Primarily used for the measurement of residual oxygen in gas-flushed food packages	Specifically designed for continuous or spot check measurement of CO ₂ levels	Portable device that can be used for research applications or package testing			
<ul style="list-style-type: none"> Measuring range from 0.0 to 100% O₂ 0.1% O₂ resolution Proprietary electrochemical cell as sensor Internal pump that draws 5cc/sec with 2 - 12 sec adjustable timer Internal rechargeable 12 VDC battery Internal rechargeable 12 VDC battery Dimensions of 249 x 102 x 254 mm 200 foam septas, 2 luer fit needles, 2 particulate filters, 2 liquid block filters Can be used for food analysis such as meats, dairy products, snack foods, baked foods, prepared meals, coffee, pet food and etcetera 	<ul style="list-style-type: none"> CO₂ ranges from 0.0 to 100% (Other Ranges: 0 to 1%, 0 to 2.5%, 0 to 10%, 0 to 20%, 0-30%, 0-50%) Infrared (NDIR) as sensor; non depleting with no moving part Internal rechargeable 12 VDC battery Internal pump with on-off switch on front panel that draws about 5 cc/sec Dimensions of 254 x 106 x 266.7 mm Male connectors, filters, T style connector, inlet fitting, screwdriver, rubber washers, 60 cc syringe for sample injection and PTFE .456 micron are provided Can be used in bioreactor systems, gas blending systems, fruit storage areas, fermentation, biofuel experiments, CO₂ mitigation research and etcetera 	<ul style="list-style-type: none"> Miniature diaphragm pump with 5cc/sec flow and 2 - 12 sec adjustable timer 12" length of double reinforced sample prob with exhaust port vents to air Dimensions of 203 x 51 x 178 mm Can be used for food package applications and reseach & industrial applications <p>Oxygen Channel</p> <ul style="list-style-type: none"> Proprietary electrochemical cell as sensor O₂ ranges from 0 - 100% 0.1% O₂ resolution <p>Carbon Dioxide Channel</p> <ul style="list-style-type: none"> Solid-state Infrared cell as sensor CO₂ ranges from 0 -20% or 0 - 100% 			
RM 18,980	RM 18,980	RM 6,950			

JACKETED GLASS REACTOR

HEB's cylindrical glass reactor is an ideal device in synthetic chemical, biological, pharmaceutical and etcetera. Liquid circulation of hot, cold or cryogenic can be filled into the jacket of the reactor. Substance reacts by stirring under normal or negative pressure in airproof glass container. Reaction process can be watched clearly through crystal reaction flask. This equipment is very suitable in library experiment or medium-production in modern biology and pharmacy. It is also applied in synthesizing materials in fine chemical industry.



General Features:

- Integrated jacket reaction flask has big caliber with good seal and high strength
- Professional PTFE cover supports high speed stirring in vacuum
- Three standard mouth can be used for multi-purpose according to customer needs. Standard fittings are charging cork, thermometer tube and reflux condenser.
- Converting-frequency adjustable speed for AC motor with constant rotating speed, no brushless, no sparkle, safe, stable and can continuously working for hours
- The glass is made from GG17 high quality silicone material which owns good chemical-physical attribute.
- Stainless steel frame which is fasten using three-joint hardware that will not shake when the user is running an experiment

Model	Overall Dimension L x W x H	Volume	Rotation Speed	Flask Necks	Torque	Power	Price
HEB-1L	35 x 27 x 65 cm	1 L	30 - 1300 rpm	4 pcs	2400 gcm	40 W	RM 4,360
HEB-2L	43 x 35 x 100 cm	2 L	100 - 1300 rpm	4 pcs	5000 gcm	90 W	RM 4,422
HEB-3L	50 x 38 x 95 cm	3 L	0 - 1300 rpm	4 pcs	5000 gcm	90 W	RM 5,280
HEB-5L	50 x 38 x 105 cm	5 L	30 - 1300 rpm	5 pcs	5000 gcm	120 W	RM 5,940
HEB-10L	57 x 57 x 180 cm	10 L	0 - 1300 rpm	5 pcs	7200 gcm	120 W	RM 9,980
HEB-20L	61 x 41 x 180 cm	20 L	50 - 900 rpm	5 pcs	15000 gcm	180 W	RM 12,580
HEB-30L	100 x 105 x 240 cm	30 L	50 - 900 rpm	5 pcs	15000 gcm	250 W	RM 14,450
HEB-50L	100 X 150 X 240 cm	50 L	50 - 900 rpm	5 pcs	22000 gcm	370 W	RM 15,980
HEB-80L	56 x 74 x 267 cm	80 L	0 - 500 rpm	5 or 6 pcs	22000 gcm	370 W	RM 23,760
HEB-100L	88 x 65 x 280 cm	100 L	50 - 900 rpm	5 or 6 pcs	22000 gcm	370 W	RM 28,580

COLONY COUNTER



Model	HYC-560
Features	<ul style="list-style-type: none"> • 4 digits LED digital display with buzzer sounds for every counting • Wider view using 125 mm wide lens • Bacteria can be counted by picking with stainless needle point pen • 5" Magnifier, Power Cord, 100 mm Dish Holder, Stainless Needle Point Pen and Marking Pen Probe are included
Specification	Petri Dish Holder : Accepts 100 mm dish (removable) and 150 mm (fixed) Illumination : Fluorescent lamp Dimensions: 310 mm L x 290 mm W x 100 mm H
Mode of Counting	<ul style="list-style-type: none"> • Manual push button counting • Needle-point probing • Marking pen probing
Price	RM 1,720

SYRINGE PUMP



NEW ERA's programmable syringe pumps provide an affordable solution for the sophisticated dispensing and flow control applications. Features include infusion and withdrawal, computer interface and advanced programming option.

The programmable syringe pumps can be applied in Chemistry, Tissue Engineering, Nanotechnology, Electrospinning, Microfluids, Neuroscience, Biology and Physics.

Model	Description	Infusion Rates	Features	Price
NE-1000	Single Syringe Pump	0.73 µl/hr to 2100 ml/hr (1 cc syringe to 60 cc syringe)	<ul style="list-style-type: none"> • Holds 1 syringe from the smallest size available up to 60 cc • 35 lbs. at minimum speed, 18 lbs. at maximum speed 	RM 4,800
DUAL-NE-1000X	Continuous Dual Syringe Pump System	0.73 µl/hr to 2100 ml/hr (1 cc syringe to 60 cc syringe)	<ul style="list-style-type: none"> • Holds 1 syringe up to 60 cc for each syringe pump • Allow continuous infusion or emulsification • 35 lbs. at minimum speed, 18 lbs. at maximum speed 	RM 8,980
NE-1002X	Microfluid Syringe Pump	0.008 nl/hr to 2545 µl/min (0.5 ml syringe to 140 ml syringe)	<ul style="list-style-type: none"> • Holds 1 syringe up to 140 cc syringe but can only open up to about 120 cc lengthwise • Advance Per Step: 4.252232 Nanometers • 100 lbs. at minimum speed, 18 lbs. at maximum speed 	RM 8,320
NE-1600	Six Channel Syringe Pumps	0.452µl/hr to 1451 ml/hr (1 cc syringe to 60 cc syringe)	<ul style="list-style-type: none"> • Holds 2, 4, or 6 syringes of up to 60 cc each • 160 lbs. at minimum speed, 30 lbs. at maximum speed 	RM 8,320
NE-4000	Double Syringe Pump	1.459 µl/hr to 7635 ml/hr (1 cc syringe to 60 cc syringe)	<ul style="list-style-type: none"> • Hold 2 different syringes from the smallest size available up to 60 cc each of variable sizes • 100 lbs. at minimum speed, 18 lbs. at maximum speed 	RM 5,950

The NE-1000 Family of Syringe Pumps Features:

- Built for automation
- Infuses and withdraws
- Applications range from simple infusions to complex pumping programs
- Operates stand-alone or from a computer with programmable preset protocols
- Program up to 41 pumping phases: change pumping rates, set dispensing volumes, insert pauses, control and respond to external signals, sound the buzzer.
- RS-232 and TTL logic control interfaces

'Just Infusion' Syringe Pump	Peristaltic Dispensing Pump
<p>NE-300</p> <ul style="list-style-type: none"> • Holds small or big syringes up to 60 ml • Infuses continuously until the user stop the pump • Variable infusion rate can be changed while pumping • Power failure mode allows pump to continue pumping after a reset • Maximum pumping rate of 1568 ml/hr with a 60 ml syringe • Does not withdraw, volume target or have computer interface <p>RM 2,230</p>	<p>NE-9000</p> <ul style="list-style-type: none"> • Pump from a reservoir through replaceable continuous tubing • Continuous pumping up to 900 ml/min • Measured dispenses for production filling of bottles • Learn and Repeat™ for quick setup of production dispenses • Slow down mode to improve accuracy of dispenses • Programmable Phases allowing complex pumping applications and interaction with external devices <p>RM 3,580</p>

SYRINGE HEATER



HEATER-KIT-1LG



HEATER-PAD2-1LG

The syringe heater constantly monitors and displays the temperature measured on the primary heating pad. While regulating the temperature, the Heat Clamping will hold the set temperature. Thermo-Kinetic Mode reduces temperature swings and tightens the Heat Clamping at the set temperature by dynamically adjusting the heating by reacting to changes in the temperature measurement and rate of temperature change.

HEATER-KIT-1LG	HEATER-PAD2-1LG	HEATER-PAD3-1LG
Syringe Heater Kit Control Unit (Primary Heating Pad with Temperature Sensor)	Secondary Heating Pad	Third+ Heating Pad
<ul style="list-style-type: none"> • Maximum temperature of 185°C • User adjustable Thermo-Kinetic Heat Clamping for regulation of Set Point temperature • RS-232 bidirectional control from a computer with built-in RS-232 network driver • RS-232 network supports up to 100 heaters, pumps & other devices from one PC port • Power Failure Mode: Restarts the heater Active Mode after a power interruption • Selectable temperature units of Celsius or Fahrenheit • Soft power switching for long life • Non-volatile memory of all operating parameters 		
RM 1,980	RM 680	RM 680

Syringe pump & syringe are not included with syringe heater.

SYRINGE PUMP SOFTWARE



SyringePumpPro is an easy to use computer interface for programmable syringe pumps. It permits faster programming and operation of one or more pumps. The user can configure and control multi-pump protocols, log pump activity and send commands to selected pumps.

Alternative license examples to purchase SyringePumpPro:

- Connecting 5 pumps to a single computer, at the same time, you will need one 5 pump license
- If you have 5 pumps connected one at a time, to one computer, a 1 pump license will do
- If you need to connect 5 single pumps to 5 separate computers, purchase five 1 pump licenses

Model	Description	Price
SYRINGE-PUMP-PRO-01	SyringePumpPro Software License for 1	RM 500
SYRINGE-PUMP-PRO-02	SyringePumpPro Software License for 2	RM 900
SYRINGE-PUMP-PRO-03	SyringePumpPro Software License for 3	RM 1,200
SYRINGE-PUMP-PRO-04	SyringePumpPro Software License for 4	RM 1,200
SYRINGE-PUMP-PRO-05	SyringePumpPro Software License for 5	RM 1,600



Flow rates vary with the selection of syringe and the type of motor and gearing in the pump. The following are example flow rates for a sample of syringes. Higher flow rates are available.

Syringe Size	Maximum Rate	Minimum Rate
0.5 µl	25.49 µl/hr	0.001 µl/hr
1 ml	53.09 ml/hr	0.73 µl/hr
5 ml	406.1 ml/hr	5.581 µl/hr
10 ml	600 ml/hr	8.244 µl/hr
20 ml	975.8 ml/hr	13.41 µl/hr
30 ml	1282 ml/hr	17.63 µl/hr
60 ml	2120 ml/hr	29.13 µl/hr

WATER BATH

CWB-13M CWB-20M CWB-30M



Cooling Bath		
13 L	20 L	30 L
1500 W	2000 W	3000 W
<ul style="list-style-type: none"> • Temperature ranges from -10°C to 99°C • Using Digital PID Controller with LED digital display • Magnetic drive circulator pump with max flow rate 30 l/min • Refrigerator power: 1/2 HP • Over temperature cut-off safety • Internal material made from Stainless Steel SUS304 		
RM 8,824	RM 9,668	RM 15,780



Shaking Water Bath			
Model	SWB-25	SWB-35	SWB-55
Capacity	25 L	35 L	55 L
Features	<ul style="list-style-type: none"> • Using Digital PID Controller with LED digital display • Over temperature cut-off safety • heating power up to 2300 W • Temperature ranges from ambient 5°C to 100°C • Internal material made from Stainless Steel SUS304 • Unique design multi rack separable 		
Price	RM 5,850	RM 6,580	RM 7,690

WD-06



Water Bath
<ul style="list-style-type: none"> • Controller: PID 4 digit LED • Range: Ambient to 100°C • Temperature accuracy: +/- 0.1°C • Internal: 240 x 140 x 150 mm • Material: Stainless Steel • Heater: 500 W
RM 1,858

INCUBATOR

SI-100A SI-100R SI-300R SI-300RF SI-64 SI-150



Shaking Incubator					
<ul style="list-style-type: none"> • Temperature: 5°C to 60°C • No refrigerator power 	<ul style="list-style-type: none"> • Temperature: 0°C to 60°C • Refrigerator power 	<ul style="list-style-type: none"> • No light system 	<ul style="list-style-type: none"> • Fluorescent light system consists of 20 W 	<ul style="list-style-type: none"> • Capacity: 64 L 	<ul style="list-style-type: none"> • Capacity: 150 L
<ul style="list-style-type: none"> • Capacity: 100 L • Krypton light system consists of 60 W 		<ul style="list-style-type: none"> • Capacity: 300 L • Refrigerator power: 1/3 HP • Temperature: 0°C to 60°C 		<ul style="list-style-type: none"> • Door Safety • Temperature: 5°C to 60°C 	
<ul style="list-style-type: none"> • Speed range from 20 - 300 rpm with shaking stroke of 20 mm orbital motion • Internal material made from Stainless Steel SUS304 • Over temperature cut-off • Using PID digital controller 					
RM 8,220	RM 9,680	RM 13,950	RM 14,980	RM 7,080	RM 7,920

DI-42 Incubator
<ul style="list-style-type: none"> • Fuzzy function to prevent overheat • Accurate temperature control by Digital PID controller • Controller select time scale • Alarm audible when timer end • Temperature range: Ambient to 60°C • Internal: 350 x 350 x 350 mm • Alarm audible when timer end
RM 4,320

ROTARY EVAPORATOR




Model	HS-2005S-N	HS-2005V-N	HS-2000NS	HS-2001NS
Dimension (lxwxh mm)	730 x 410 x 630	620 x 410 x 870	320 x 730 x 520	320 x 580 x 720
Weight	19.5 kg	19.5 kg	16 kg	17 kg
Condenser	Slant type condenser	Vertical type condenser	Slant type condenser	Vertical type condenser
Speed	20 - 280 rpm			
Flask Capacity	6 different types of flasks are attachable (from 50 ml to 3000 ml)			
Heater Power	1000 W			
Bath Capacity	4.3 liter			
Temperature	Ambient - 180°C			
Features	<ul style="list-style-type: none"> • Digital control panel for temperature and speed • If the amount of water goes down under the certain threshold in the heating bath, the system automatically turns off its power for the safety purpose • Included Water Bath HS-3001 with PTFE coating and double jacketed body 			
Price	RM 8,250	RM 8,580	RM 7,260	RM 7,920

WATER BATH

HS-3003	HS-3005N
 <p>Cold Trap Bath</p> <ul style="list-style-type: none"> • Consists up to 4 liter • Dimension : 250 x 510 x 510 mm • Glass type • Temperature down to -40°C • Refrigerator power: 1/3 HP • Refrigerant: 134 A • Using FND Controller • Power consumption up to 334 W • Applied when the cold trap needs to be done in extremely low temperature • Quick freezing sample for freeze-drying and reaction stop of the enzyme <p>RM 5,874</p>	 <p>Cooling Water Circulator Bath</p> <ul style="list-style-type: none"> • Consists up to 4 liter • Dimension: 250 x 510 x 510 mm • Refrigerant: 134 A • Using FND Controller • Flow rate up to 15 liter/min • Temperature down to -20°C • Using FND Controller • Power consumption up to 334 W • Refrigerator power: 1/3 HP • Refrigerant: 134 A • Using FND Controller • As a source of cooling to the the rotary evaporator <p>RM 5,220</p>

ASPIRATOR

	Model	HS-3000
	Description	Electric Aspirator
	Features	<ul style="list-style-type: none"> • Bath is made of polypropylene • Pump capacity: 18 liter/min x 2EA and bath capacity: 8 liter • Motor Power 150 W • Dimension: 320 x 240 x 330 mm
	Price	RM 2,150

ALUMINA CRUCIBLES

Alumina Crucible
Low FormAlumina Crucible
LidAlumina Crucible
Low FormAlumina Boat
Rectangular

High purity alumina products can withstand very high temperature under reducing, inert or high vacuum condition. Alumina products can withstand up to 1750°C.



Alumina Plates

Alumina Crucible Low Form 99.6%

Model	Top diameter (mm)	Bottom diameter (mm)	Height (mm)	Capacity (ml)	Price
AL-1020	35	24	42	20	RM 31.00
AL-1050	48	30	54	50	RM 49.50
AL-1100	58	35	68	100	RM 66.00
AL-1150	66	40	80	150	RM 89.00
AL-1250	79	42	93	250	RM 108.00
AL-1500	100	60	110	500	RM 178.00

Alumina Crucible Low Form Lid

Model	Top diameter (mm)	Capacity (ml)	Price
AL-1020-LID	35	20	RM 30.00
AL-1050-LID	48	50	RM 30.00
AL-1100-LID	58	100	RM 49.00
AL-1150-LID	66	150	RM 55.00

Alumina Crucible High Form

Model	Top diameter (mm)	Height (mm)	Capacity (ml)	Price
AL-2010A	25	25	10	RM 33.00
AL-2050A	45	35	50	RM 49.50
AL-2050B	40	45	50	RM 49.50
AL-2100	40	95	100	RM 66.00
AL-2250	60	100	250	RM 108.90
AL-2500	72	148	500	RM 174.90

Alumina Boat Rectangular 99.8%

Model	Length (mm)	Width (mm)	Height (mm)	Price
EQL54W38H20	54	38	20	RM 43.00
EQL82W42H23	82	42	23	RM 68.00
EQL50W40H20	50	40	20	RM 45.00
EQL50W20H20	50	20	20	RM 45.00
EQL82-W42H23	82	42	23	RM 43.00
EQL65W88H28	65	88	28	RM 89.00
EQL65W65H30	65	65	30	RM 89.00
EQL100W40H18	100	40	18	RM 68.00
EQL100W20H20	100	20	20	RM 68.00
EQL90W65H30	90	65	30	RM 89.00
EQL150W50H30	150	50	30	RM 275.00
EQL300W40H20	300	40	20	RM 395.00

Alumina Plate Rectangular 99.8%

Model	Length (mm)	Width (mm)	Thickness (mm)	Price
AL-P220-220-6	220	220	6	RM 624.00
AL-P150-80-6	150	80	6	RM 226.00
AL-P102-25-6	102	25	6	RM 119.00
AL-P90-65-6	90	65	6	RM 119.00

QUARTZ BOAT



Quartz boat is made from high purity quartz (4N purity) with 1200°C working temperature.

Model	Dimension	Features	Price
EQ-QB-0210	20 x 10 x 8 mm	Can fit in MTI GSL-1100X and OTF-1200X-S (1" O.D tube furnace)	RM 125
EQ-QB-1017	100 x 17 x 10 mm	Can fit in MTI GSL-1100X and OTF-1200X-S (1" O.D tube furnace)	RM 190
EQ-QB-1042	100 x 42 x 20 mm	Can fit in MTI 50 - 80 mm O.D tube furnace	RM 255
EQ-QB-1062	100 x 60 x 26 mm	Can fit in MTI OTF1200-80 tube furnace (3" - 80 mm O.D tube furnace)	RM 320
EQ-QB-3062	300 x 60 x 28 mm	Can fit in MTI OTF1200-80 tube furnace (3" - 80 mm O.D tube furnace)	RM 530
EQ-QB-4284	420 x 80 x 40 mm	Can fit in MTI OTF1200-100 tube furnace (1000 O.D tube furnace)	RM 705
EQ-QF-0806	218 x 162 x 50 mm	<ul style="list-style-type: none"> Constructs a flat surface inside the processing tube where can put sample on Can be fit in MTI VBF-1200X-H8 Bench Top Vacuum Chamber Furnace 	RM 5,820
EQ-QB-1025	Diffusion of 1" wafer processing	<ul style="list-style-type: none"> Design for diffusion, oxidation and annealing 1" Si wafer Can fit in MTI OTF-1200X-S50 tube furnace (2" tube furnace) 	RM 1,360
EQ-QB-8025	Diffusion of 8" wafer processing	<ul style="list-style-type: none"> Can fit in MTI GSL1100X8 tube furnace Can carry 25 piece wafers of 8" diameter in each boat 	RM 2,950
EQ-QB-2025	Diffusion of 2" wafer processing	<ul style="list-style-type: none"> Can carry 25 piece wafers of 2" diameter x 0.5 mm thickness in each boat Can fit in MTI OTF1200-3 tube furnace (3" tube furnace) 	RM 1,520
EQ-QB-3025	Diffusion of 3" wafer processing	<ul style="list-style-type: none"> Can carry 25 piece wafers of 3" diameter x 0.5 mm thickness in each boat Can fit in MTI OTF1200-4 tube furnace 	RM 1,520
EQ-QB-4025	Diffusion of 4" wafer processing	<ul style="list-style-type: none"> Can carry 25 piece wafers of 4" diameter x 0.5 mm thickness in each boat Can fit in MTI OTF1200X6 tube furnace 	RM 1,750
EQ-QB-6025	Diffusion of 6" wafer processing	<ul style="list-style-type: none"> Can carry 25 piece wafers of 6" diameter in each boat Can fit in MTI GSL1100X8 tube furnace and Compact Vacuum Chamber Furnace EQ-VBF-1200X 	RM 2,350
EQ-QB-4025S	Diffusion of 4"X 4" wafer processing	<ul style="list-style-type: none"> Can carry 25 piece wafers of 4" x 4" square x 0.5 mm thickness in each boat Can fit in MTI OTF-1200X-5L, VBF-1200X-H8, and OTF-1100X-8.5 tube furnace 	RM 2,950

GRAPHITE CRUCIBLE

Graphite crucible can withstand the high temperature, and has good resistance to chemical erosions and thermal shock. Especially graphite crucible is ideal for the melting of aluminum, copper and other metals.

Graphite Crucible		
Model	EQ-G40	EQ-GR009G
O.D.	1.5"	Top: 2.285" Bottom: 1.81"
I.D.	1.25"	1.415"
Depth	3.75"	3.06"
Height	3.96"	3.435"
Temperature	399°C to 2760°C	
Compressive Strength	42.7 MPa	
Price	RM 172.00	RM 147.50



MORTAR & PESTLE



Agate Mortar & Pestle				
Model	Outside diameter (mm)	Inside diameter (mm)	Size (inch)	Price
MTA-2	50	40	2	RM 126
MTA-3	75	60	3	RM 245
MTA-4	100	80	4	RM 585
MTA-5	125	110	5	RM 780
MTA-6	150	130	6	RM 1,080
MTA-7	175	160	7	RM 1,680
MTA-8	200	190	8	RM 2,780

SLI INSTRUMENTS

OTHER INSTRUMENTS

SLI-BD0-35D	SLI-00I-10A	SLI-D0-9055A
Digital Laboratory Drying Oven	Dual Purpose Oven/Incubator	Force Air Convection Drying Oven
<ul style="list-style-type: none"> Power: 1200 W Temperature up to 250°C Dimension: 35 x 35 x 35 cm 	<ul style="list-style-type: none"> Power: 850 W Temperature up to 250°C Dimension: 25 x 26 x 25 cm 	<ul style="list-style-type: none"> Consists of 50 liter Power: 600 W Temperature up to 300°C Dimension: 42 x 39.5 x 35 cm
RM 1,970	RM 3,200	RM 3,700

SLI-APG-100	SLI-SG-160	SLI-IT-852B	SLI-IT-350
High Speed All Purpose Grinder	Laboratory Grinder	Infrared Thermometer	
<ul style="list-style-type: none"> Speed up to 26000 rpm Mesh size: 40-200 Weight: 3.5 kg 	<ul style="list-style-type: none"> Speed up to 5000 rpm Mesh Size: 40-120 Weight: 58 kg 	<ul style="list-style-type: none"> Temperature ranges from -18°C to 650°C 	<ul style="list-style-type: none"> Temperature ranges from -50°C to 350°C
RM 850	RM 3,950	RM 350	RM 300

SLI-IA-814	SLI-IA-6G	SLI-SR-110ATC	SLI-ECM-811ATC	SLI-S-212ATC
Timber Moisture Meter	Paper Moisture Meter	Saccharometer	Emulsion Concentrator Meter	Saltmeter
<ul style="list-style-type: none"> Moisture range: 5% - 40% Accuracy: +/- 1% 	<ul style="list-style-type: none"> Moisture range: 0% - 40% Accuracy: +/- 1% 	<ul style="list-style-type: none"> Range: 0 - 5% Min value: 0.10% 	<ul style="list-style-type: none"> Range: 0 - 15% Min value: 0.5%, 0 - 15%, 0.5% 	<ul style="list-style-type: none"> Range: 0 - 28% Min value: 0.20%
RM 120	RM 150	RM 350	RM 285	RM 285

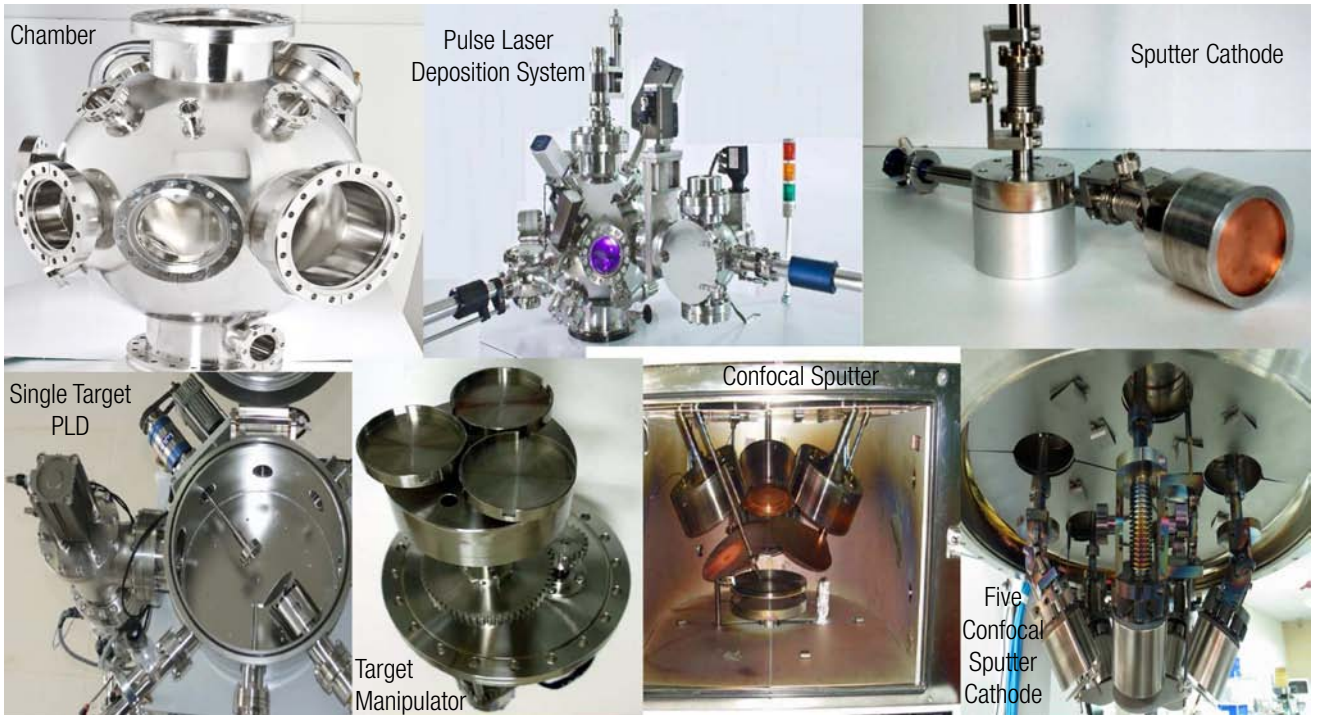
CUSTOMIZED SYSTEM

In order to support our customer towards sophisticate research especially in the area of Nanomaterial, Semiconductor, MEMS, PV, LED, Surface Acoustic Wave Technology, Thin Film Coating, and Ultra High Vacuum Technology; we are currently forming business alliance with LJ-UHV in providing the technology know how and equipment for the above endeavor. Aside from the precision equipment, we are supplying a complete line of pure material, compound, and substrate in various purity for completion of our equipments.



LJ-UHV Site Work located in Taiwan

The customized systems are inclusive of: Pulse Laser Deposition Coating, Ultra High Vacuum Magnetron Sputtering, Continuous Vacuum Magnetron Sputtering, Ion Sputtering, Electron Beam Evaporation, Thermal Evaporation with Plasma Assisted Vapor Deposition Equipment and Induction Coupled Plasma. LJ-UHV Customized System are featured with Human-Machine Interface (HMI) controller for user convenience in handling their system.



LJUHV CUSTOMIZED SYSTEM is complete with Human-Machine Interface (HMI) controller for user convenience in handling their system.



Confocal Sputter System



Plasma Enhanced Chemical Vapor Deposition System



Pulse Laser Deposition System

CUSTOMIZED SYSTEM



Sputter System



PLD+Sputter System



Lab Scale PECVD



Crystal Puller



Lab Scale Thermal Evaporation System



Confocal Sputter with Load-lock Chamber

LABORATORY EQUIPMENT

ULTRA HIGH VACUUM SYSTEM

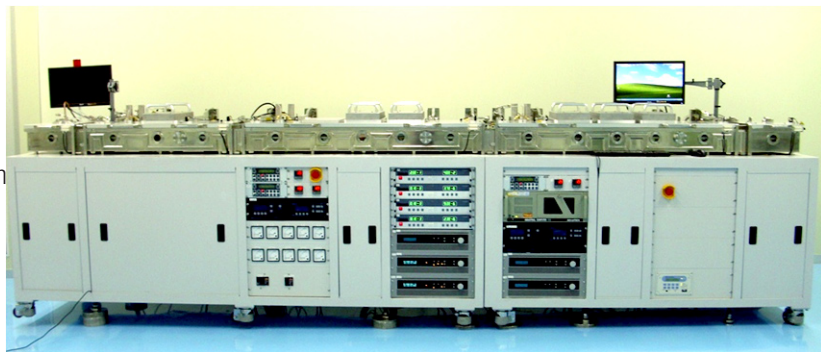
Providing the original equipment supply, consultation, calibration services, and equipment integration for ultra high vacuum (1×10^{-8} ~ 1×10^{-9} torr) application in thin film coating, Molecular Beam Epitaxial, Nano-wire synthesis and etc.



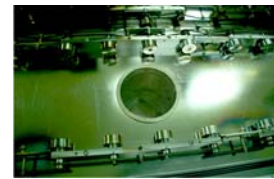
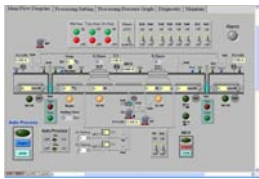
IN LINE SPUTTER SYSTEM

CHARACTERISTIC

- Designed for pilot scale, experimental usage
- Suitable for Solar Cell, Laser, EMI
- Horizontal sputtering deposition
- Uniform gas flow conductance design
- High target utilization of magnetron cathode design
- Quick exchanging target design
- 19" TFT panel HMI
- Alarm history record
- DC & RF power safety interlock



In Line Sputter for CIGS Solar Cell

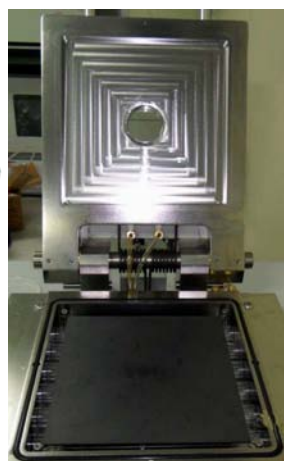


HV SPUTTERING SYSTEM

- Single layered inner chamber made of SUS304; while outer chamber is electro-polished
- Removable top plate for confocal sputtering source
- Aluminum alloy type front access door with shutter shielding to permit uncoated viewing window
- Rotation inlet port, substrate up/down inlet port, and thermal test port are installed at the base plate
- High vacuum turbo pump with flow rate up to 400 l/sec equipped with air cooling function
- Dual digital LED display with 5 set points relay (Low vacuum gauge from 760 torr - 10^{-3} torr while high vacuum gauge up to 10^{-3} torr - 10^{-8} torr)
- Digital display for load-lock chamber (Low vacuum gauge from 760 torr - 10^{-3} torr)
- Mass flow controller to control inert gas and working gas
- Process pressure controller to hold function for plasma ignition
- Water cooling magnetron sputter cathode
- Plasma generator RF 300 W & auto match network
- Plasma generator DC 1000 W
- PLC control with 7" LCD touch screen



VACUUM REFLOW OVEN



Substrate Stage

- Rectangular SS304 chamber with double layer, water cooling fabricated
- Consists of main exhaust port, rough pumping port, and vacuum gauge port
- Rotary mechanical pump up to 500 lpm
- Consists of front end pneumatic control valve and pneumatic control valve for exhaust buffering
- Digital vacuum gauge with pressure range from atmosphere pressure to 10×10^{-3} torr
- Equipped with pneumatic control isolation valve
- Hardware to read out data into PLC programming
- PLC programmable control with 10" color touch screen HMI
- Vacuum exhaust/vent control
- Mass flow control/working procedure control
- Programmable temperature control
- Alarm display and record; authority control, and interlock for safety

PECVD SYSTEM



This system is specifically designed for thin film deposition solutions of SiC , SiN_x , SiO_x , and SiO_xN_y materials used in the manufacturing of IC's, MMICs, LEDs, LDs, VCSELs, and waveguides and MEMS devices of Si and GaAs substrates. It utilizes a capacitively RF coupling plasma technology to independently bias the upper electrode and/or substrate for controlling the plasma density and ion energy. Reproducible thermal uniformity using a calotto heater with thermocouple calibration with optimized uniform gas laminar flow stream provided by specially designed shower head and pumping channels. This system is customized to optimize deposition rate, refractive index, film stress control, yield, throughput, and device performance.



PLC System



View ports at the side wall

E-BEAM EVAPORATOR SYSTEM



This system is specifically designed for metal/non-metal film deposition process of R&D laboratory and pilot plant production applications. Key performance features are including evaporation of uniform metal, dielectric, and insulator films on a variety of substrate materials (metal, semiconductor, insulator). Additional features are including versatility, ease of operation, and long term reliability for evaporation of single and multi-layer thin/thick films.



Substrate Stage

- D type chamber with single layer made of SUS304, electropolished
- Front opening/closing door with automatic electro-magnetic lock/unlock
- Door seal is designed as elastomeric seal
- High voltage fittings, sweep signal, crucible index drive, E-Gun body cooling and shutter drive feedthrough are provided at the base plate
- High vacuum turbo pump with the pumping speed up to 600 lps and ultimate pressure up to 5×10^{-10} mbar is equipped
- Gas inlet feedthrough, rotation drive, and quartz sensor feedthrough are provided at the top plate
- Telemark deposition controller for layer thickness, rate, and process monitoring
- PLC based operation control with color touch screen HMI interface
- Backside quartz radiant heater arrays with reflector, deposition shield (max 320°C)

ICP-RIE SYSTEM



Substrate Stage

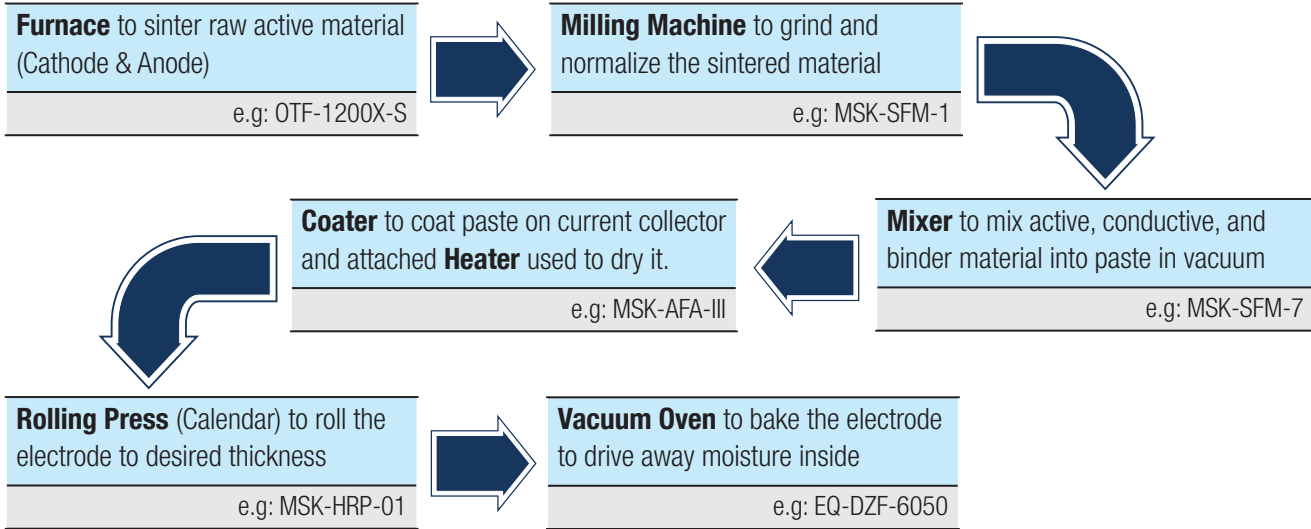
This system is specifically designed for dry etching solutions of a wide variety of metals, dielectrics, and semiconductor materials. It utilizes an Inductively Coupled Plasma (ICP) source to generate a high-density plasma with a separate RF power supply to independently bias the substrate for controlling the ion energy. Reproducible and uniform thermal control is achieved with active cooling/heating using mechanical clamping, (helium) backside cooling, and a recirculating fluid electrode. The robust, reliable, production-proven ICP-100 is customized to optimize smooth sidewall profile control, yield, throughput, and device performance.

- Single layer SUS304, electropolished chamber with manual open/close door with a view port
- Linear automatic magnetic (with manual override) vacuum transfer system for the transfer of the carrier between the load-lock chamber and main vacuum chamber
- Up/down wafer lifter for accepting/releasing wafer from/onto carrier finger into process chamber
- Roughing pump up to 300 lpm with vacuum level less than 5×10^{-4} torr
- Pneumatic control for roughing valve, purge/vent valve, foreline valve
- Vacuum gauge controller attached with Pirani gauge heads ranges from atmosphere pressure to 5×10^{-4} torr
- PLC/PC based industrial computer to control complete system
- Graphic multi-tasking real time control/display software operation for all sensors and drivers

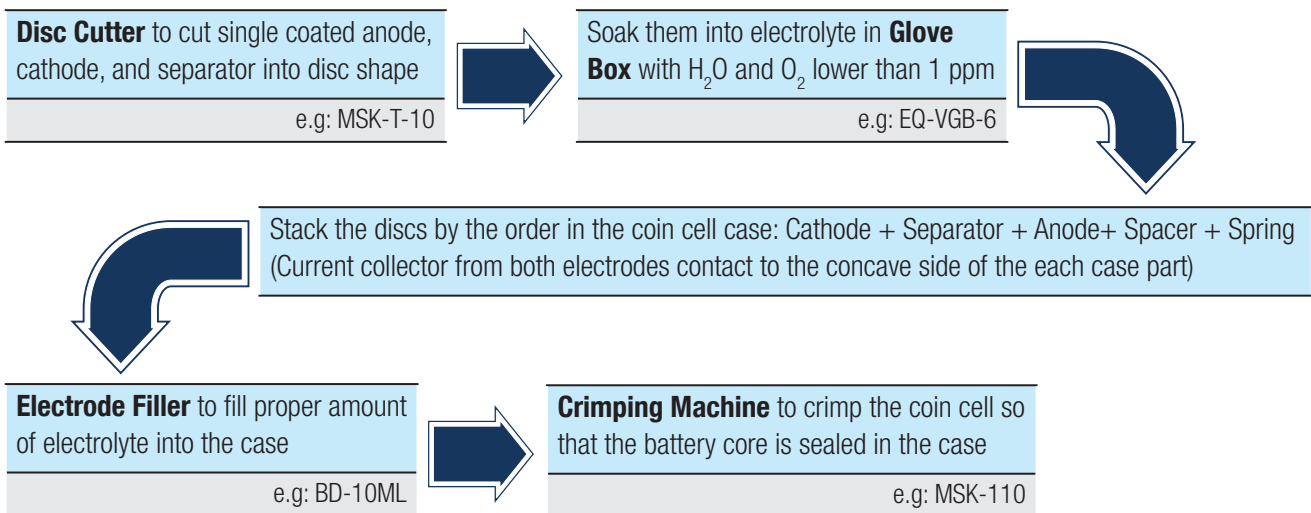
Li-ion Coin Cell Fabrication & Equipment



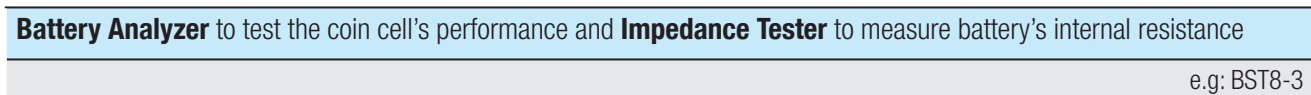
Step 1: Electrode Sheet Preparation



Step 2: Cell Assembly

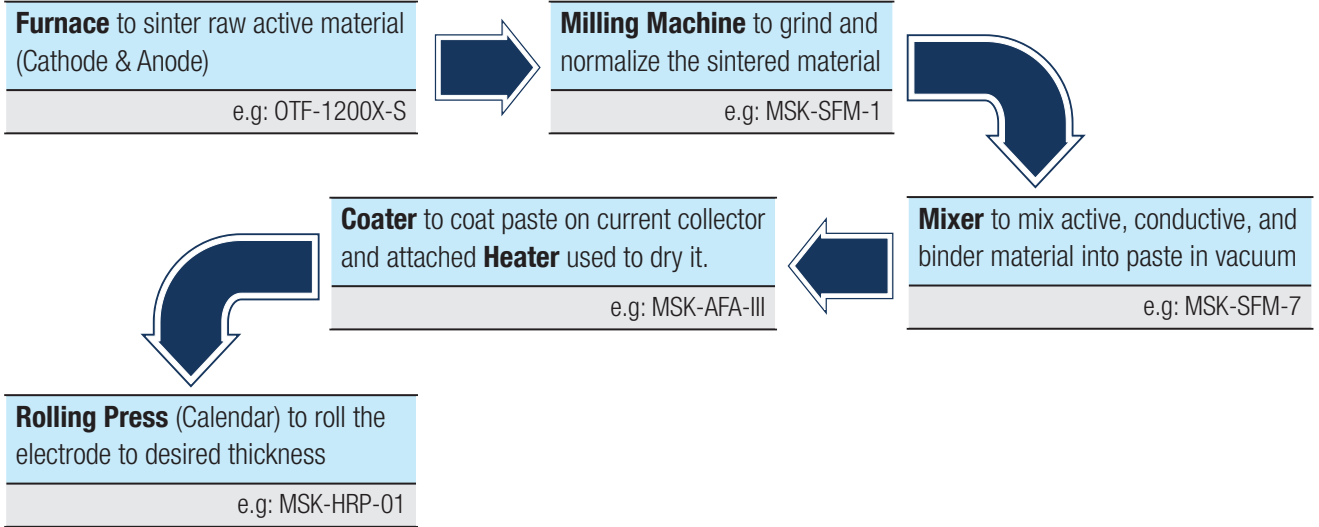


Step 3: Battery Testing

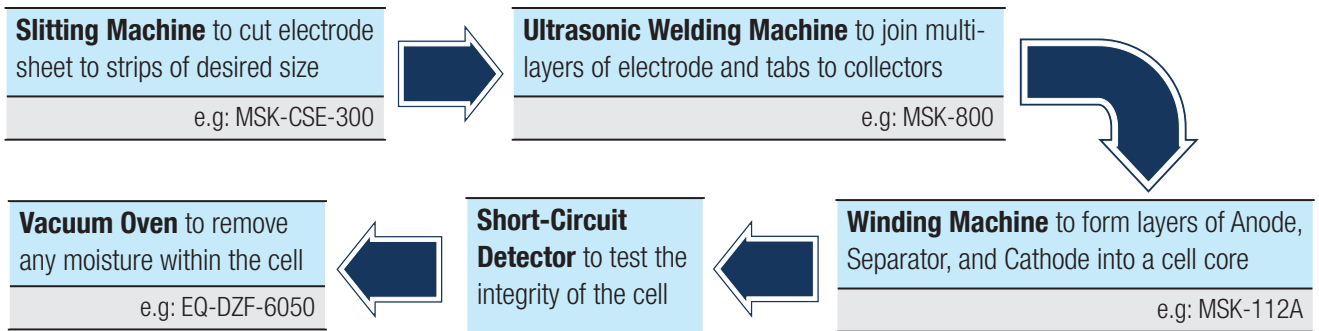


Li-ion Cylindrical Battery Fabrication & Equipment

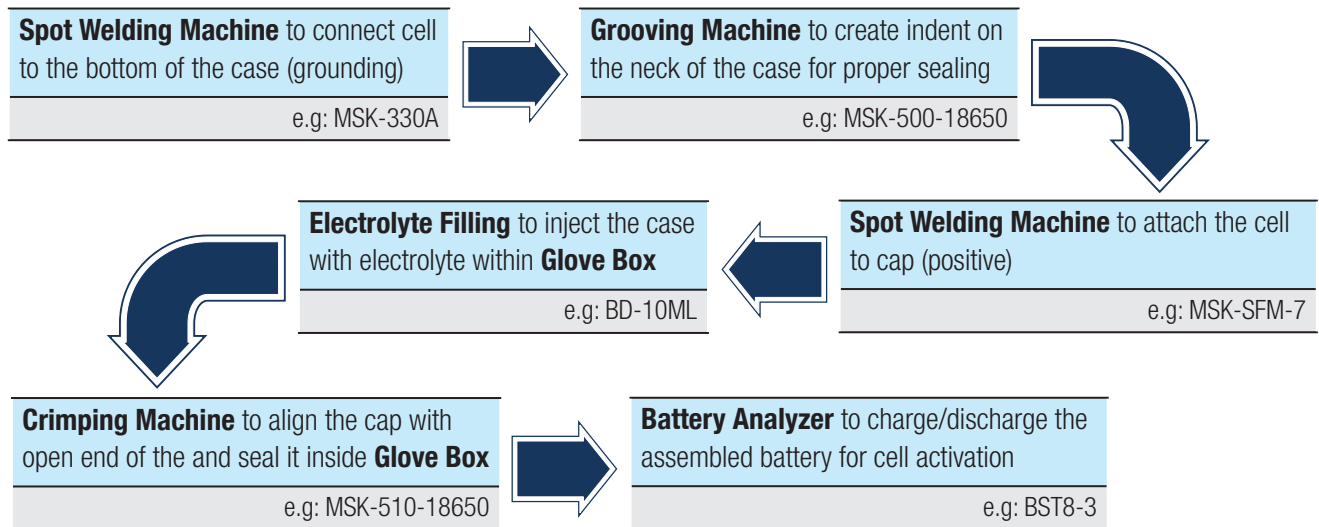
Step 1: Electrode Sheet Preparation



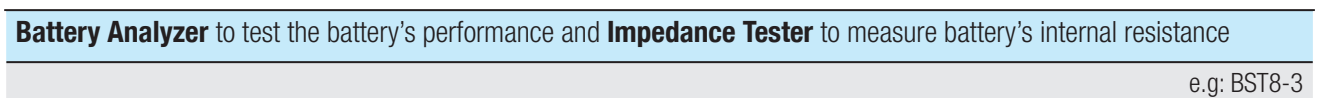
Step 2: Cell Assembly (Winding Method)



Step 3: Case Sealing

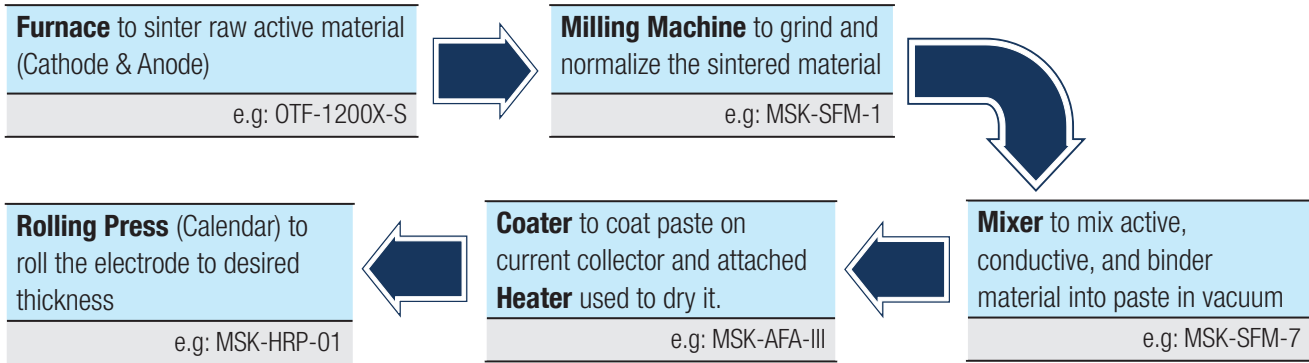


Step 4: Battery Testing

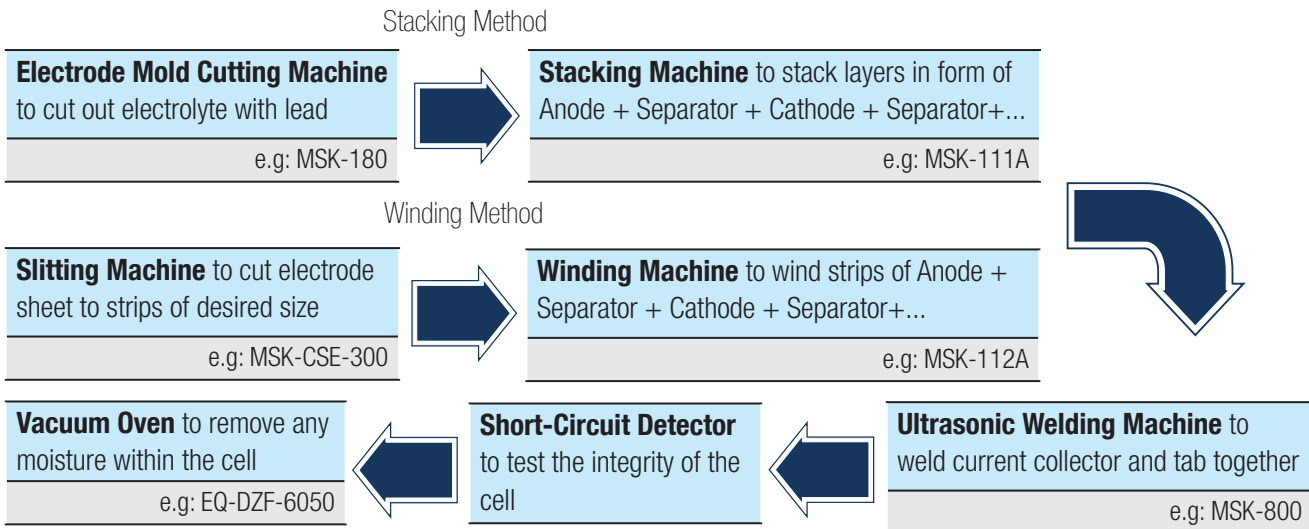


Li-ion Pouch Battery Fabrication & Equipment

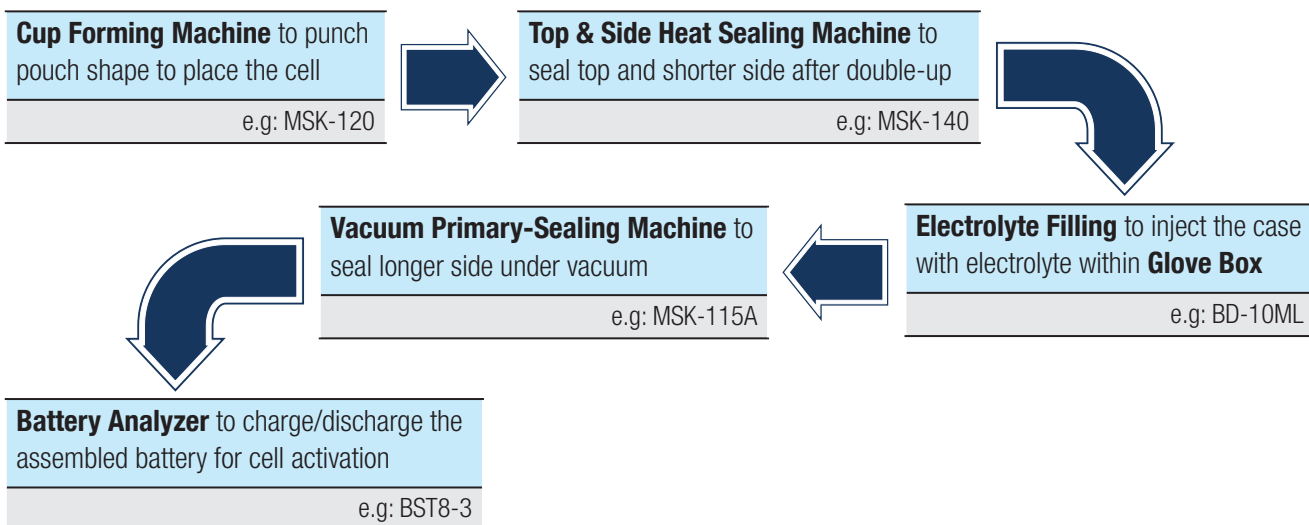
Step 1: Electrode Sheet Preparation



Step 2: Cell Assembly



Step 3: Case Formation & Sealing



Step 4: Battery Testing



Note: 'Cell' is the battery core without case and electrolyte

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