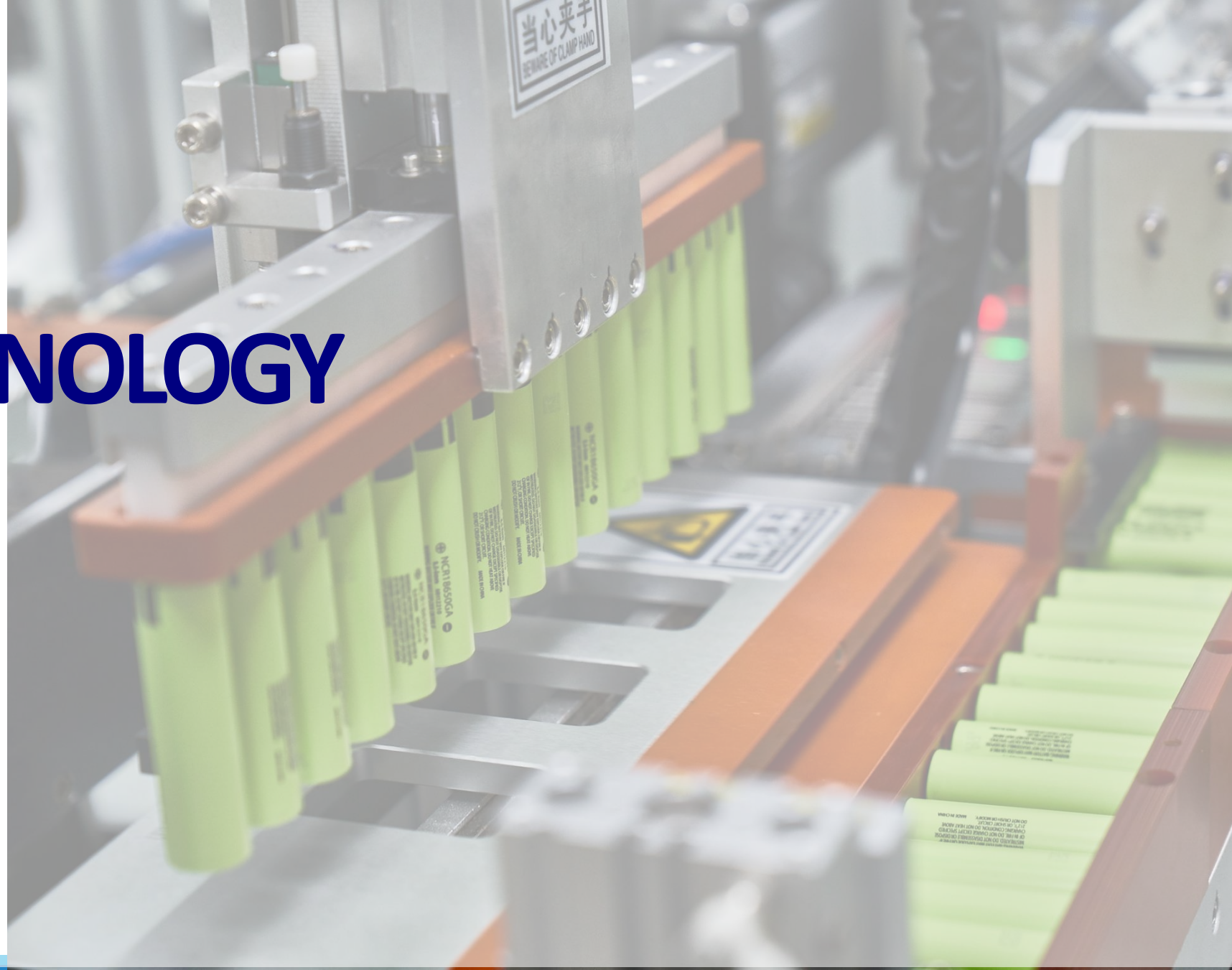


APACK TECHNOLOGY CO., LTD.





公司據點

Company Located



電路板打件廠 / 深圳,中國

BMS SMT Factory / Shenzhen , China

Area: 5,000m² / Employee: 80

鋰電芯廠 / 湖南,中國

Li-polymer Cell Factory / Hunan , China

Area: 50,000m² / Employee: 800

中國生產線 / 東莞,中國

China Production Line / Dongguan, China

Main Production : 3C/IOT/Power Battery/ESS Battery

Area : 3,900m² / Employee: 380

總公司及生產線 / 新北市,台灣

Headquarter & Production Lines / New Taipei City , Taiwan

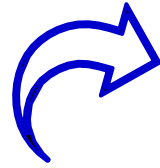
Main Production : E-bike, IPC & Storage Battery

Area : 1,500m² / Employee: 80

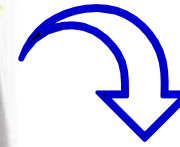
Pack Factory (China)

FPack, DG Qingxi

Area : 3,900m² / Employee: 380



APack



電芯工廠 / Li-polymer cell factory

湖南立方新能源科技有限責任公司

Li-Fun Technology Co., Ltd.

Area: 50,000m² / Employee: 800

APack invested



Pack Factory (Taiwan)

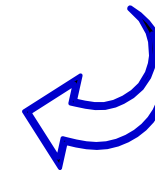
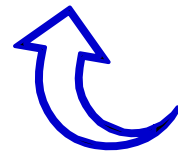
APack, Sinjhuang 5F & 6F

(Majority: E-Bike Battery)

Area : 1,500m² / Employee: 80

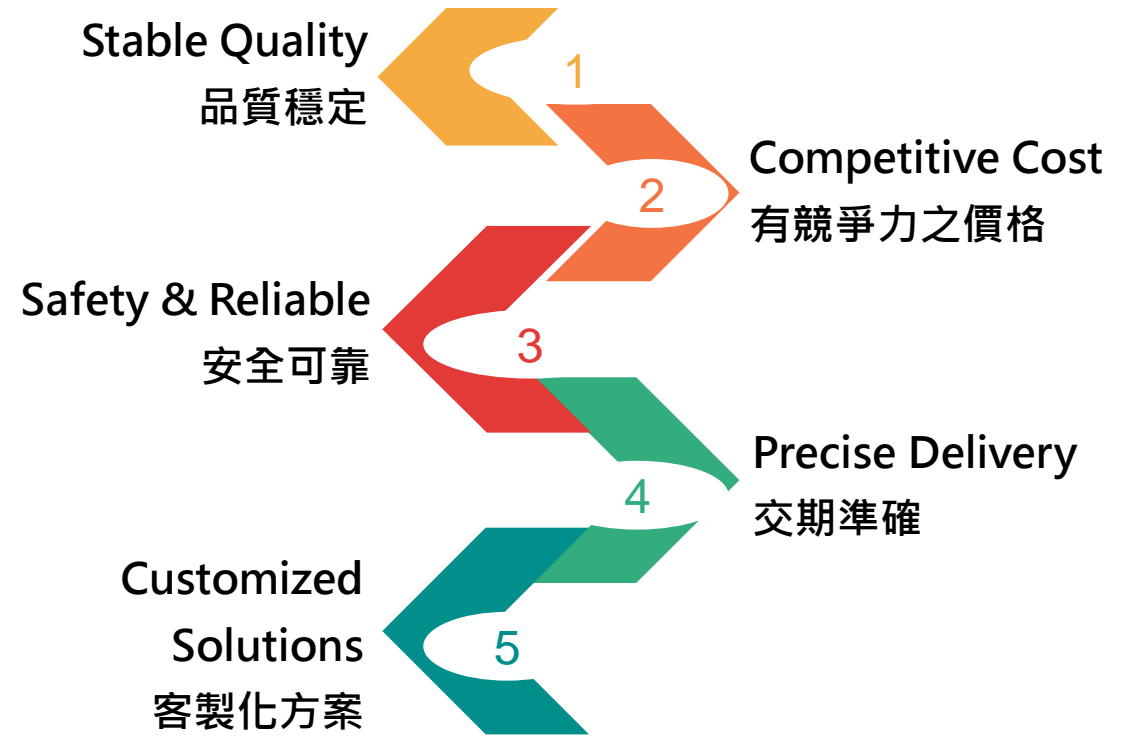


PCBA(BMS) SMT in SZ, China



PCBA(BMS) SMT in Sinjhuang(8F), Taiwan

Company Policy



- **Solid Product Development Capability**
 - Strong expertise on Lithium-Ion Battery
 - Plentiful design experience for Multi Cell Application
- **Total Solution Offering**
 - Multiple Cell Source
 - Stable supply chain & various application request from customers
 - Vertical Solution Service
 - Offers complete design on BMS, Safety Regulation Compliance & Battery Pack Assembly
- **Flexible Production Capacity**
 - Offer Spare Capacity to meet Customer's urgent demand
- **Recognized Quality**
 - Components Certified, Design-in Safety, and Mfg Process Control ..etc.
- **100% Self-developed automatic production and testing equipment**

Quality System

Material Quality
Production Quality

Supplier Chain

Parts Preparation
Risk Control

R&D

Industry Experience
R&D Innovation

Service

Comprehensive Service
Overseas

- < Product >
- 穿戴設備/Wearable Device
 - 智慧手機/Smart Phone
 - 門鈴/Doorbell
 - 不斷電系統/UPS
 - 醫療車/Medical Cart
 - 電動自行車/E-Bike
 - 電動滑板車/E-Scooter
 - 電動摩托車/E-Motorcycle
 - 儲能電池/Storage battery
 - 無人載具/AGV
 - 電動工具/Power Tools
 - 機器人/iRobot



客製化程度高
Highly Customized

APack aims to design and expand a variety of application to firm a footing in the fierce competition of battery pack circle toward one of the top's battery pack design expert



Networking Device



IoT Device



Server Backup



Wearable Device



Medical Device



E-Bike



Customer First, Instant Schedule, Quality Focus, Sustainable Performance

E-Bike Battery Samples

APP00301	Product Photo
BM	
10S4P 36.0V-10.08Ah Typ. 362.8Wh	
Panasonic UR18650ZM2	
	Rear Rack

APP00338	Product Photo
IR-5-U	
13S4P 46.8V-13.80Ah Typ. 645.8Wh	
Panasonic NCR18650GA6	
	In-Tube

APP00344	Product Photo
EEL-Pro	
10S5P 36.0V-17.25Ah Typ. 621.0Wh	
Panasonic NCR18650GA6	
	In-Tube

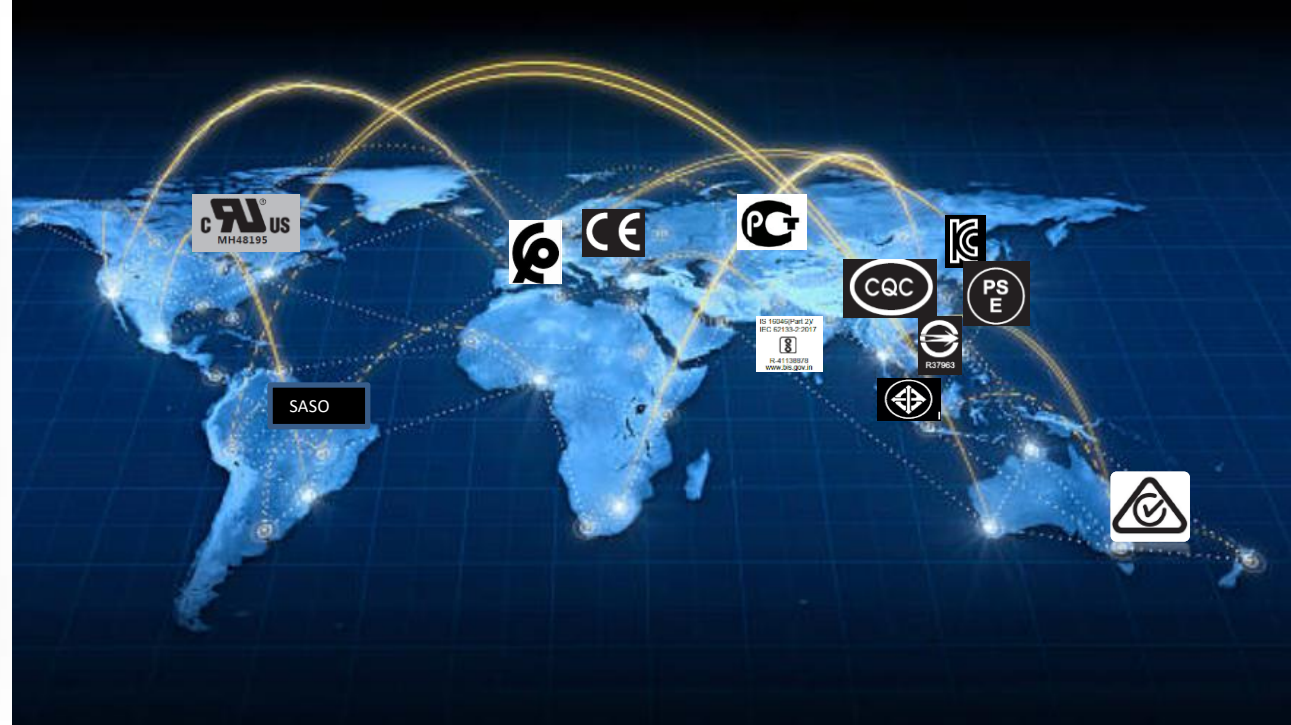
APP00319	Product Photo
AR300	
13S6P 46.8V-20.70Ah Typ. 968.7Wh	
Panasonic NCR18650GA6	
	In-Tube

APP00354	Product Photo
DP-6C	
13S5P 46.8V-17.25Ah Typ. 807.3Wh	
Panasonic NCR18650GA6	
	Down-Tube

SB0108	Product Photo
EEL-Mini	
10S4P 36.0V-13.80Ah Typ. 496.8Wh	
Panasonic NCR18650GA6	
	In-Tube

Focus On Quality

All products will acquire worldwide safety certificates



ISO9001



ISO14001



IEEE1725



EN50604-1



UL2054/2271



IEC62133



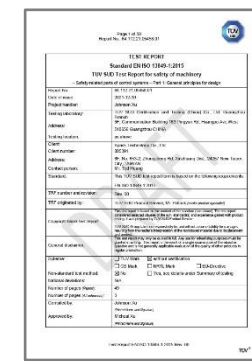
CE



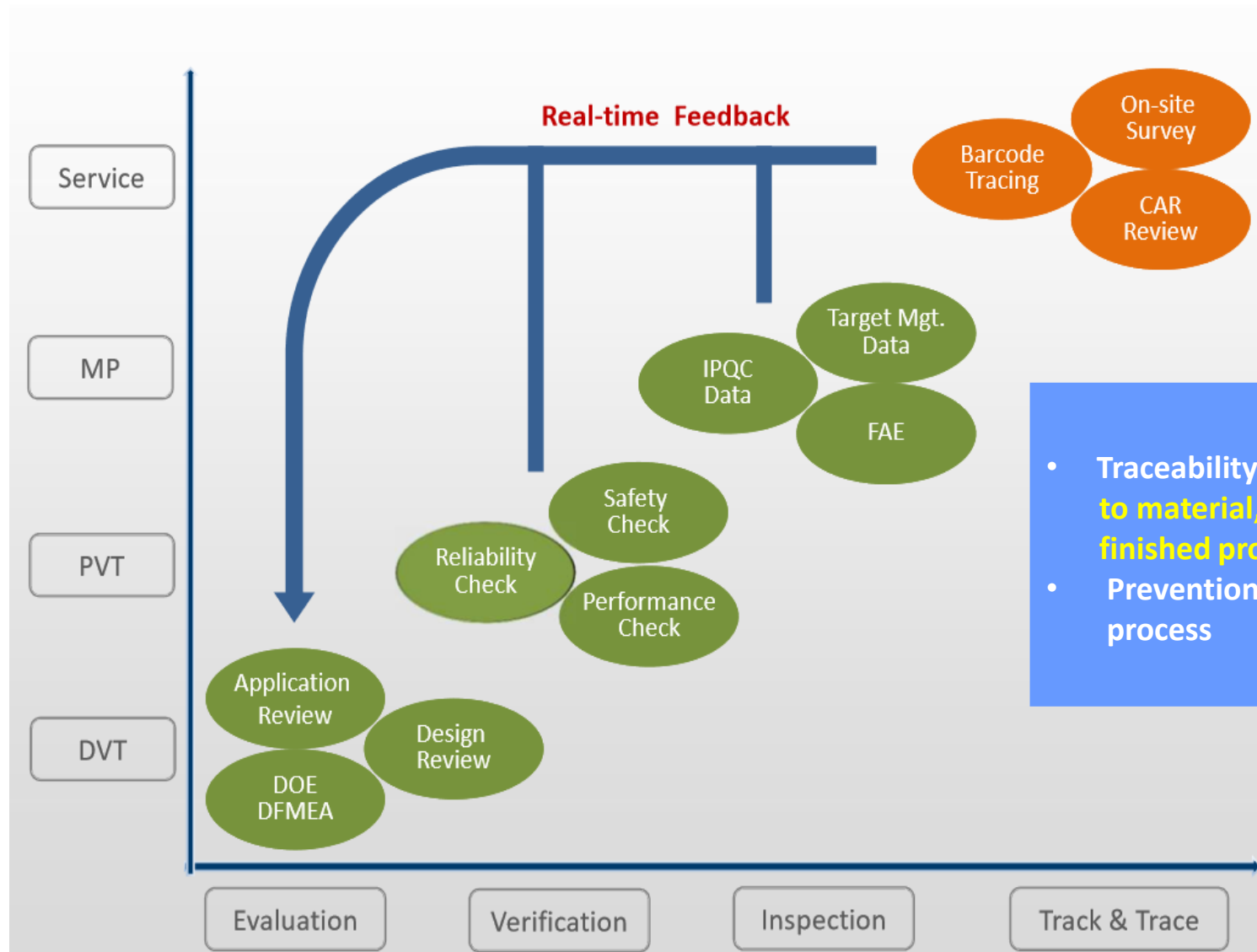
SGS/ROHS



UN38.3



ISO13849



MES

Barcode Traceability

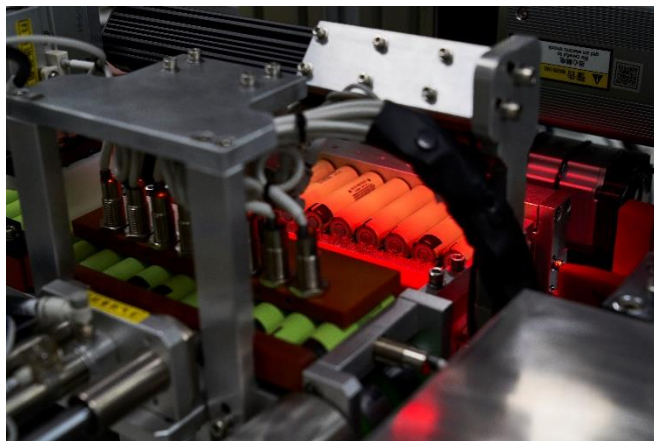
- Traceability Product Life Cycle **to material, component and finished product**
- Prevention error of production process

Safety Policy

Safety Design Concept for Battery Pack

S*afety Policy* for Battery Pack Design to ensure Enhanced Safety

Already implemented in APack system.

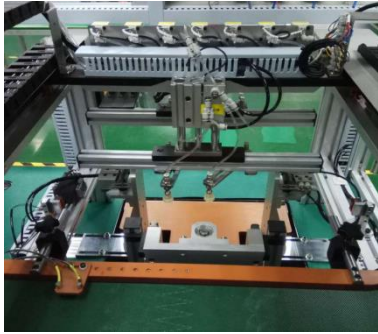


Item		Concept
Life End Charge Control		<ul style="list-style-type: none"> Control charging voltage after cell is degraded (SOH status) to have safety level redundancy
Anti-Thermal Propagation		<ul style="list-style-type: none"> Design battery pack to prevent cell to cell thermal events (preventing adjacent cells from going into thermal runaway). Design battery pack to maintain safety performance in the worst case conditions.
Flame Containment		<ul style="list-style-type: none"> Flame containment of the batteries during thermal runaway (preventing flame exiting from the battery pack).
Advanced Traceability	Cell	<ul style="list-style-type: none"> Applied 2D code on side of cells for traceability
	Pack	<ul style="list-style-type: none"> Scan and record 2D code (data matrix) of the battery cell to link the cell to the battery pack ID (Panasonic traceability system).
Use and Management of Li-ion Check list		<ul style="list-style-type: none"> To better understand and eliminate any potential risk, we created a usage/system condition check list for all applications.

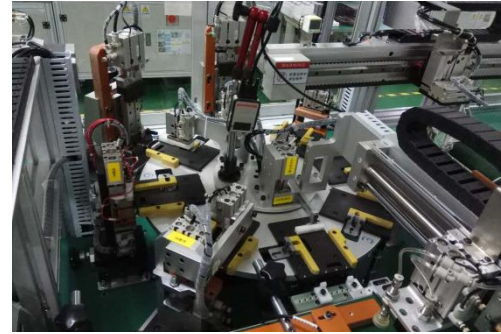


China Factory

全自動生產 Fully Auto Production



1. Cell auto-supplier



2. Cell Tab cutting/Inspector



3. Auto Laser Welding



4. Spot welding CCD

- 1. All smart control by system
 - 2. MES tracking implement
 - 3. NG product auto sorting
 - 4. Efficiency $\geq 1,000$ pcs/hr.
 - 5. Comply with FCST ≥ 100 K/M
- For Smart Phone, Tablet, Handheld devices...etc.



5. Auto Taping Machine



9. Positive Pressure



8. All FCT Auto Tester



7. Peel tape attaching



6. Insulation ring machine

Customer First, Instant Schedule, Quality Focus, Sustainable Performance

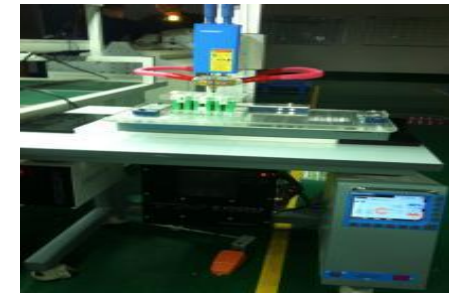
動力電池生產設備 Power Battery Equipment



Cells auto distributor 電芯自動分選機



BMS(PCBA) Tester
BMS(PCBA) 測試設備



Auto spot welder 自動點焊設備



← Workshop
車間



Auto spot welder 自動點焊設備



100V/40A Aging
100V/40A 老化設備



100V/100A Aging
100V/100A 老化設備



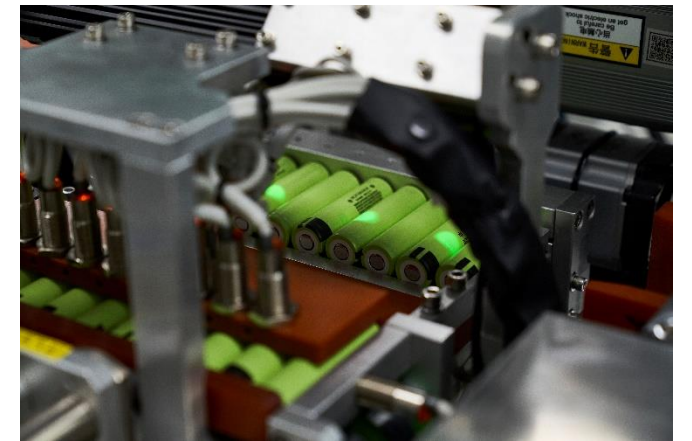
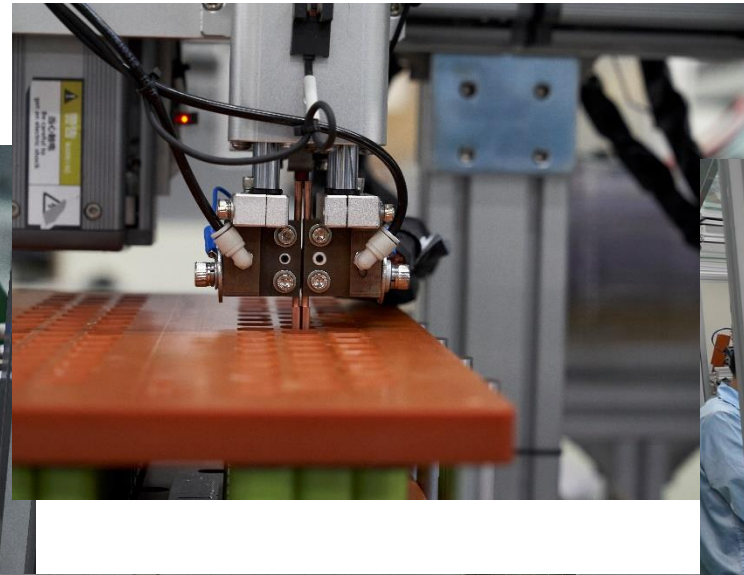
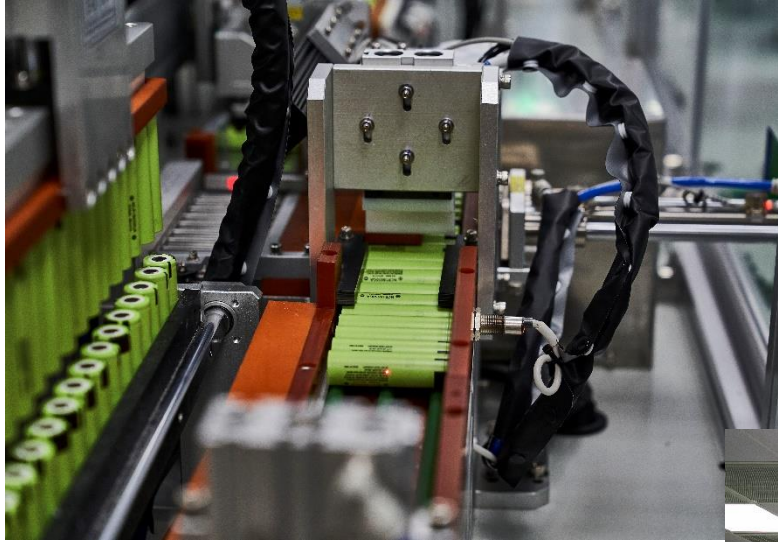
Function tester 功能測試機



Taiwan Factory (Start from Dec/2020)

台灣產線

Taiwan Production line

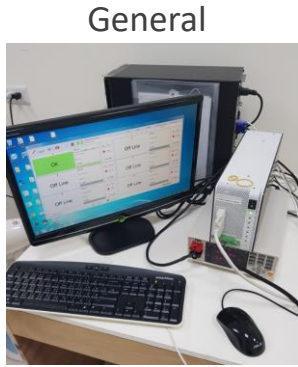


Customer First, Instant Schedule, Quality Focus, Sustainable Performance

主要生產設備 Main Equipment



Auto Gluing (X-Y axis)



BMS Function Tester



Ultra-sonic Welding



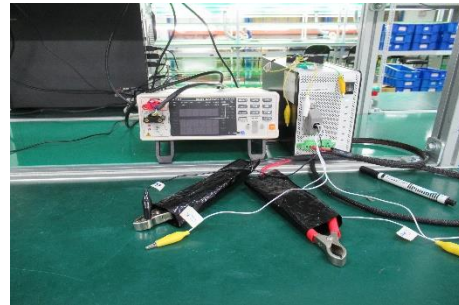
Auto Spot Welding (Double-Side)



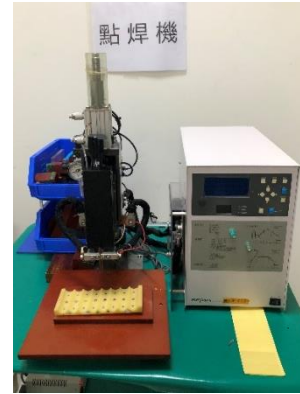
Auto Spot Welding (Single-Side)



High Voltage Battery Function Tester (Including Protocol & MES system)



Power Battery Communication Tool (Programming) & EE Function Tester



Japan SEWA Spot Welding (For 3C Consumer)



Auto Soldering Japan HAKO

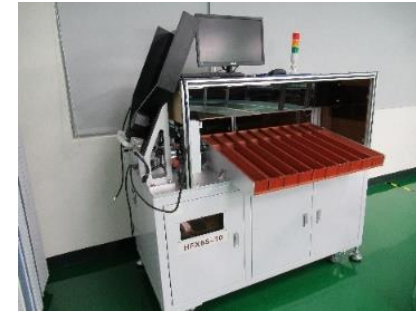


Cells Auto Distributer (Ranking)



Heat Shrink Machine

**Highly Automatic
Production for E-Bike**



General



Comply with MES

Customer First, Instant Schedule, Quality Focus, Sustainable Performance



RoHS Inspector



Environmental Tester



2.5D Visual Inspector



Vibration Tester



Altitude Simulator



Baking Machine



ESD Tester



Pull Force Tester



Positive Pressure Tester



Negative Pressure Tester



New Business

新產品-AGV拓展

產品概述

應用Automation Guided Vehicle
自動導引車系統概念
概念導入(開發應用市場)

現有底盤系統共用,開發找尋專用市場(如下圖)
客製化目標應用 (Labors Reduction)



共用底盤系統



新產品-儲能應用拓展

產品概述
儲能應用

基地台之備用電力
尖峰時刻與離峰時刻應用



基地台



48V 50Ah (未來替換成鋰三元Cell)
2台並聯 4,800Wh-可供4.8度電力



Current Using Li-FP cells

Model	NCR18650BD (High Energy)	
Nominal Voltage (V)	3.6	
Rated Capacity (mAh)	2980	
Nominal Capacity (mAh)/Min.	3030	
Nominal Capacity (mAh)/Typ.	3180	
Nominal Energy (Wh)/Typ.	11.4	
Standard Charge	0.3C-4.2V (Recommend : 4.1V for motive application)	
Max. Discharge Current	8A	
Internal Resistance (mΩ)	AC (1kHz)	24
	DC (0-10sec) (SOC50%)	44
Dimensions (mm) (max.) (with tube)	Diameter	18.5
	Height	65.3
Weight (g) (max.) (with tube)	49.5	
Bottom vent	w/o	

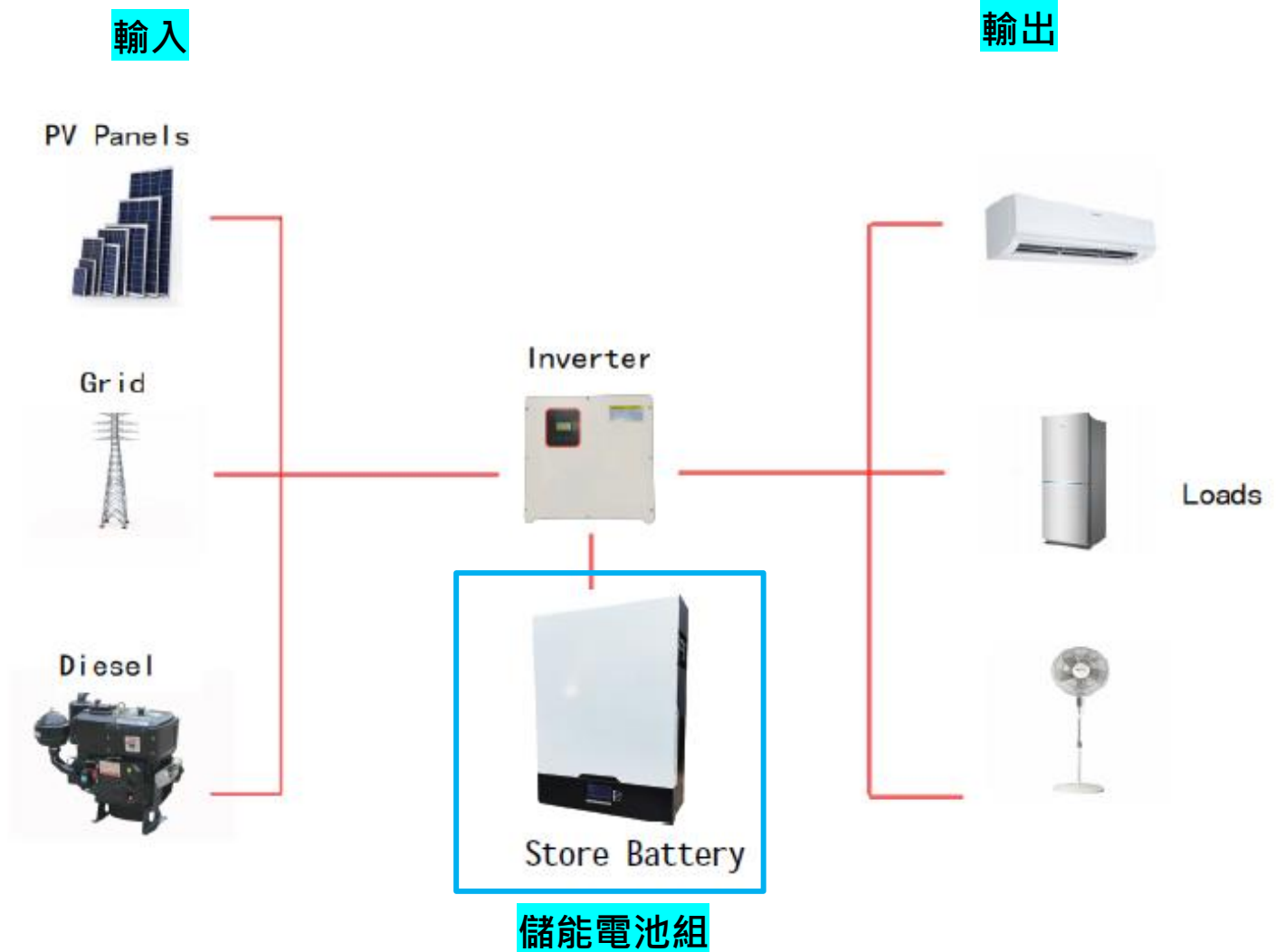
Li-FP → Li-NMC

Customer First, Instant Schedule, Quality Focus, Sustainable Performance

新產品-儲能應用拓展

產品概述
居家儲能應用

家庭之備用電力
尖峰時刻與離峰時刻應用

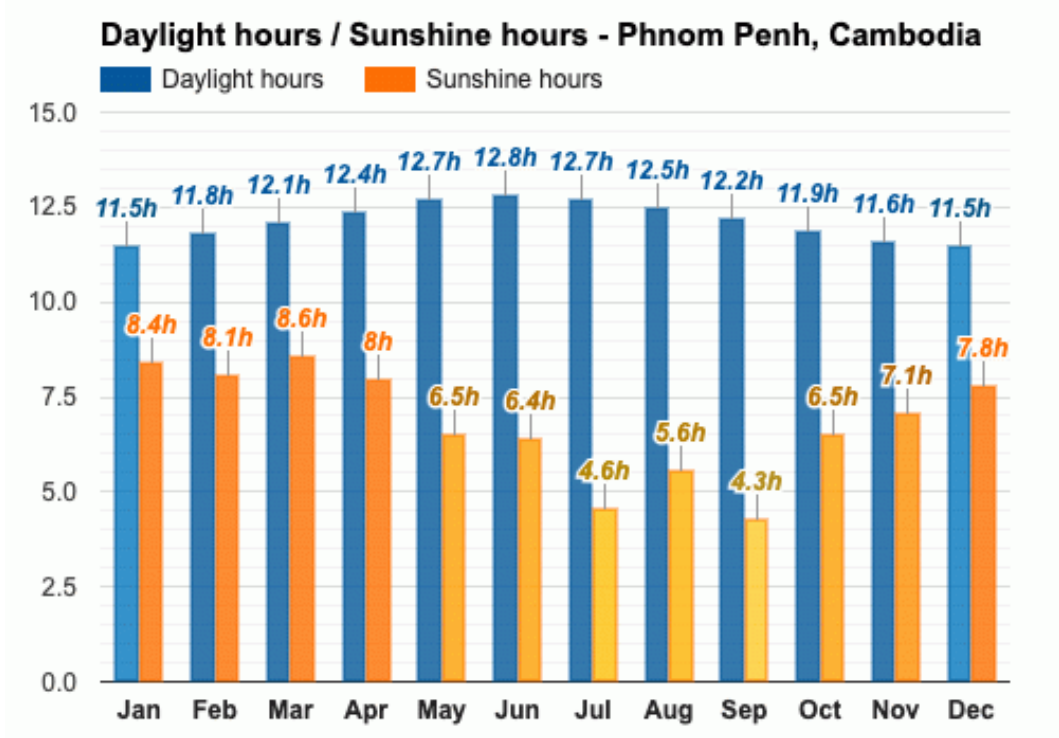


Customer First, Instant Schedule, Quality Focus, Sustainable Performance

New Business Model

目標區域：
東南亞國家

Example: Cambodia 柬埔寨



Cambodia Sunshine
Avg. 6hr/day

4/21-4/23 於柬埔寨拜會交通部部長



東南亞實地考察

New Business Model

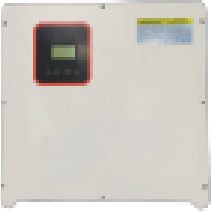
日照優勢 投資儲能設備 節能減碳 全民來賺電費

Civil House

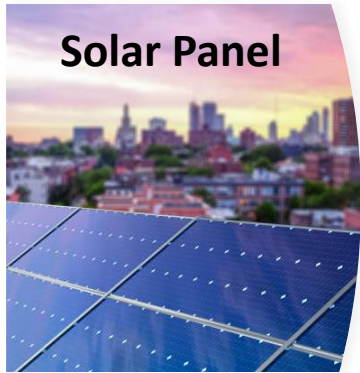


Supply Power

Inverter



Solar Panel



儲能設備購置(含電池) by 租賃公司 or 銀行分期



Tuk Tuk



政府鼓勵Tuk Tuk油車、瓦斯車換電車

Charge & Exchange

Save Power



Li-NMC / Li-FP
Battery Pack

註：
柬埔寨1度電花費為0.25美金
The electricity costs US\$0.25 per KWh in Cambodia.



Thank You for your attention

If you have any questions,
Please feedback to APack.

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FAX: +886-2-2903-1302

E-mail: sales@apack.com.tw