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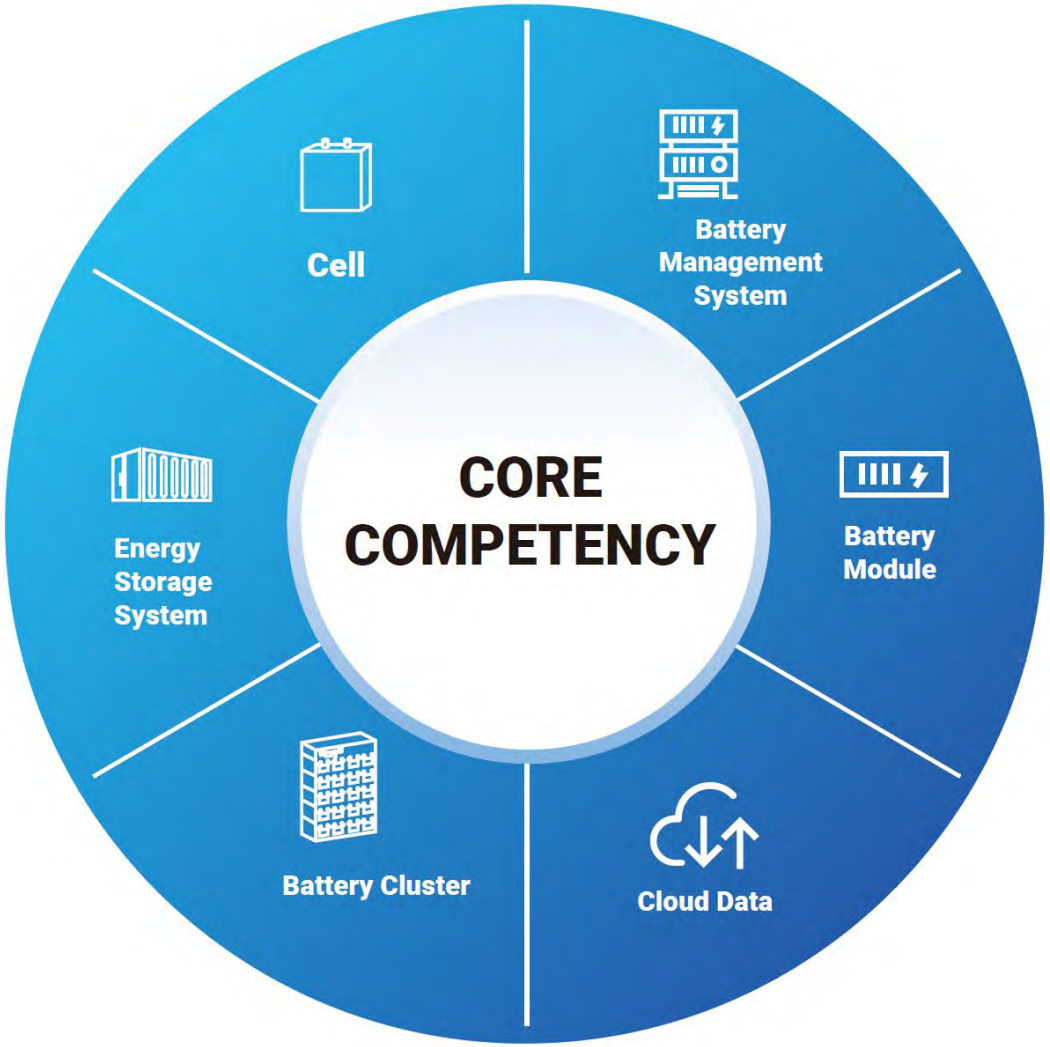
COSPOWERS NEW ENERGY PVT. LTD.
COMPANY PROFILE

ABOUT COSPOWERS NEW ENERGY PVT. LTD. (CNEPL)

COSPOWERS NEW ENERGY PVT. LTD., (CNEPL) is a hi-tech enterprise focusing on the development of Lithium energy storage technologies. CNEPL has a vast experience in the field of Lithium storage and have mastered core technologies such as product design and manufacturing, system integration and providing diversified products and solutions for various applications involving energy storage.

CNEPL LFP batteries are used in various applications such as Electric Mobility, 5G Communication Base Stations, Battery Energy Storage (BESS) and Power Auxiliary Services.



ASSOCIATION WITH GLOBAL LEADER IN ENERGY STORAGE - COSPOWERS GROUP

CNEPL has a strategic alliance with COSPOWERS GROUP for procurement of high quality LFP Cells and for development of LFP battery packs and total energy solutions for domestic and export markets.

COSPOWERS GROUP is a manufacturer of high-grade LFP Cells based in China and having a presence in more than 60 countries and regions worldwide. Its products are used in various applications such as Electric Mobility, Power Auxiliary Services, Renewable Energy Generation, Industrial & Commercial Buildings, Green Energy-saving Homes, Data Centers, 5G Communication Base Stations, Comprehensive Parks and so on.

19
Domestic and overseas branches & subsidiaries

14Years
Energy storage industry applications began in 2008

995000㎡
Factory area

14GWh
Annual production capacity

50+
National standards and industrial standards formulated

No.1
One of the first batches of domestic lithium ion battery R&D and manufacturing enterprises

No.1
One of the first batch of lithium battery manufacturers to enter the directory of national new energy vehicles

No.1
The market share in the field of communication energy storage ranks first in the world

1500+
Patented technology and scientific research achievements

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COSPOWERS GROUP - RESEARCH & PRODUCTION FACILITIES

Dongying factory (Phase 1)

Group headquarter and power products industrial park cover 80,000 ㎡ with full PACK production capacity of 5.6GWh.

Changde factory

The core manufacturing Industrial Park covers an area of 160,000 ㎡ with full cell production capacity of 6GWh; Pack capacity 1GWH

Anhui Xuzhou factory

The cell manufacturing Industrial Park covers an area of 462,000 ㎡ with target cell production capacity of 10GWh.

Harbin factory

Manufacturing industrial park covers an area of 51,000 ㎡ with full Cell production capacity of 7.3GWh, Pack Capacity of 2.8GWh

Dali factory

Factory covers an area of 20,000 square meters with full PACK production capacity of 2GWh

Shenzhen factory

PACK manufacturing and nickel metal Hydride Industrial park covers an area of 30,000 square meters with full PACK production capacity of 2GWh , Ni-MH cell capacity :600K/Day

Cospower research institute

Changsha :Power electronics R&D center -1300㎡

Changde: Cell R&D Center - 10000㎡

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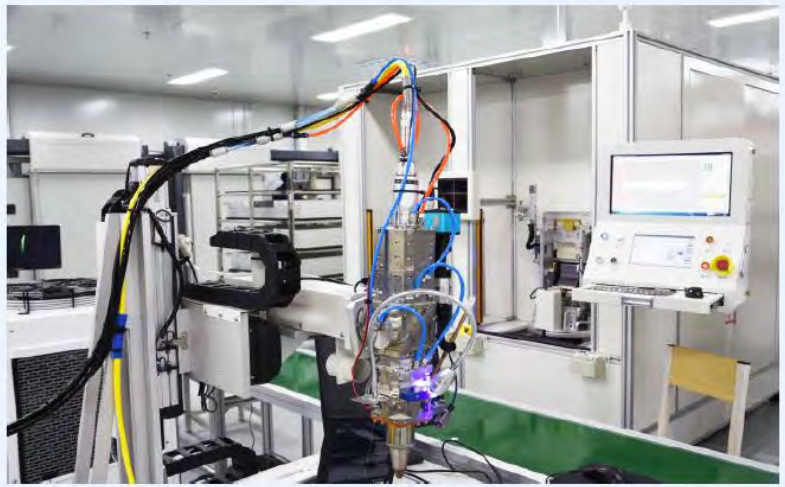
COSPOWERS GROUP – AUTOMATED CELL MANUFACTURING

First class infrastructure for high tech automatic cell production line and pack assembly production line, scientific management & high precision operation to emerge into a 5G+ smart manufacturing factory.





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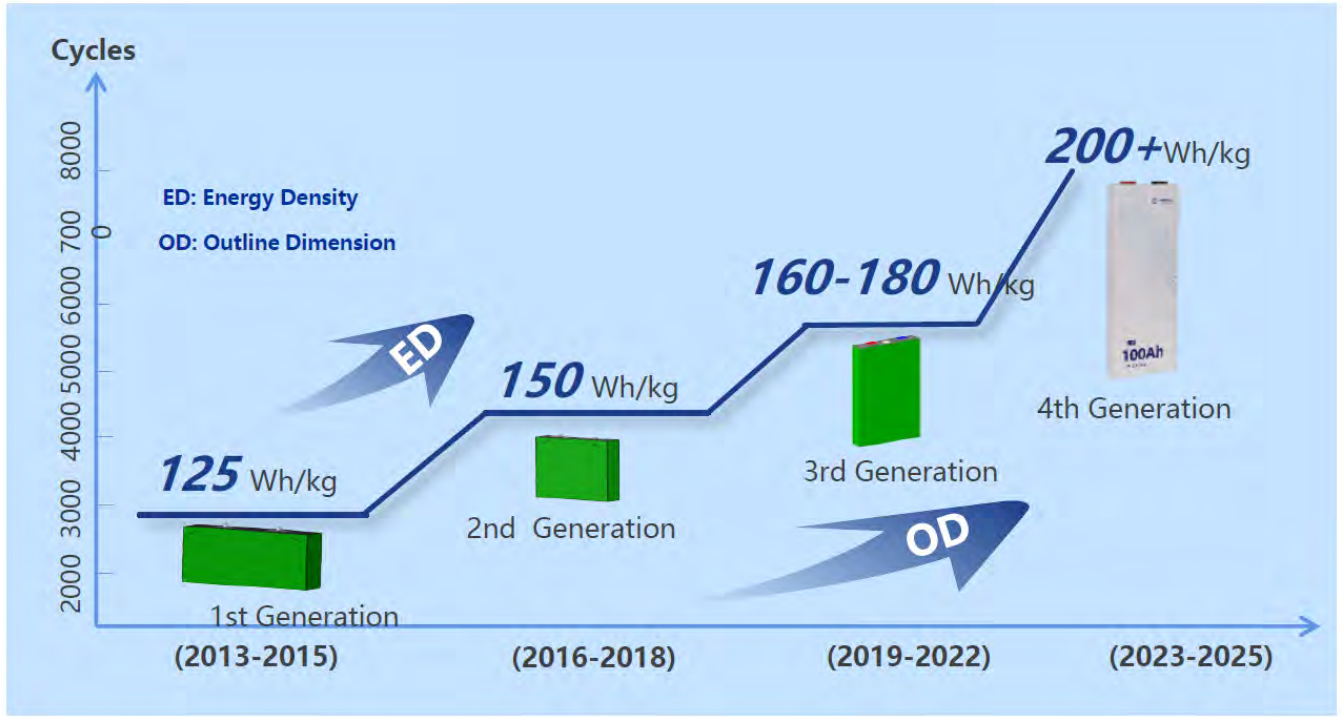
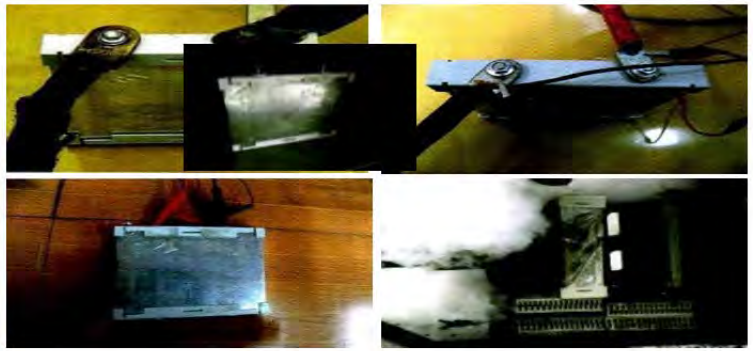
COSPOWERS GROUP – CORE TECHNOLOGICAL COMPETITIVENESS

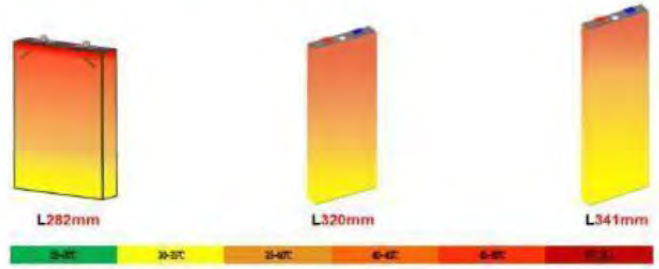
Lithium Iron Phosphate System: High Safety As Well As Long Service Life



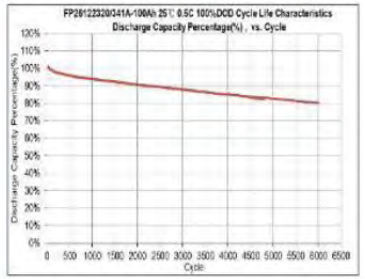
Safety testing



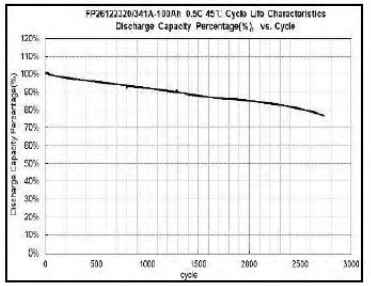
Heat dissipation analysis



Normal temperature and high temperature cycling



Prediction of Cycles under Normal Temperature



High temperature cycling characteristics of battery cells

20% Improvement of Individual energy density

30% Improvement of system energy density

55% Improvement of heat dissipation performance

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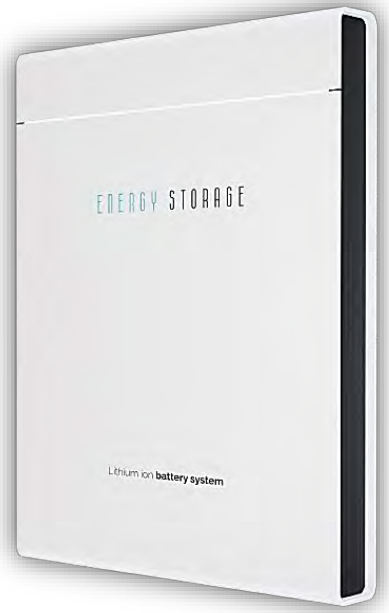
CNEPL – BUSINESS SEGMENTS

ELECTRIC MOBILITY

TELECOM

HOME UPS



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CNEPL - PAN INDIA SERVICE NETWORK

01 Central LFP Battery Assembly Unit with Repair Center

99 After-sales Service Centers

05 Regional Service Managers

233 Field Service Engineers

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CNEPL - LFP BATTERY ASSEMBLY INFRASTRUCTURE

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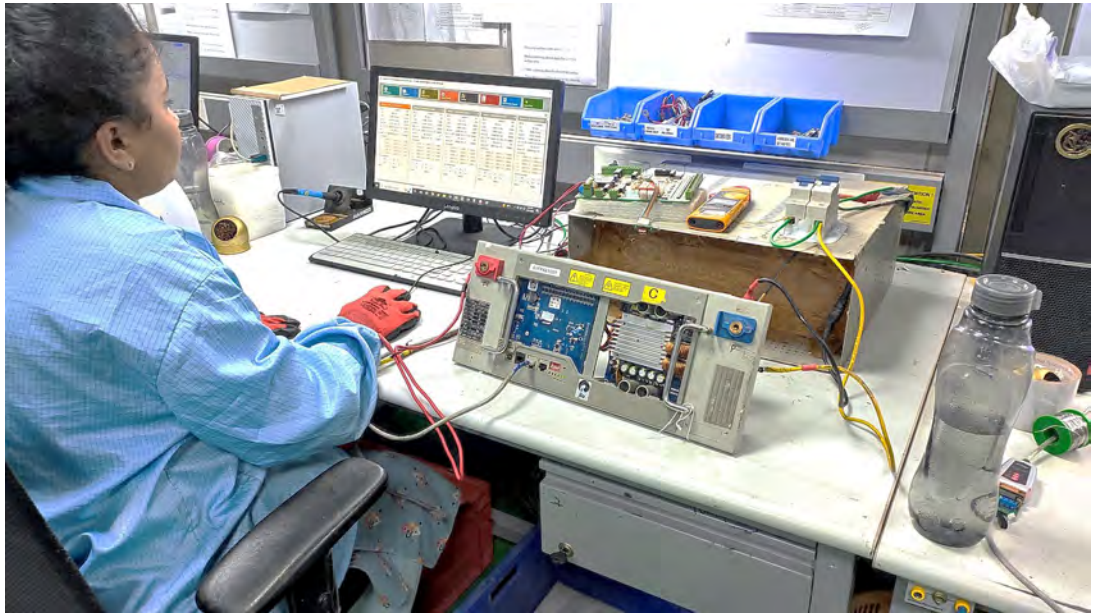
CNEPL - LFP BATTERY REPAIR CENTER



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CNEPL - LFP BATTERY REPAIR CENTER

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CNEPL – ON-SITE SERVICE SUPPORT







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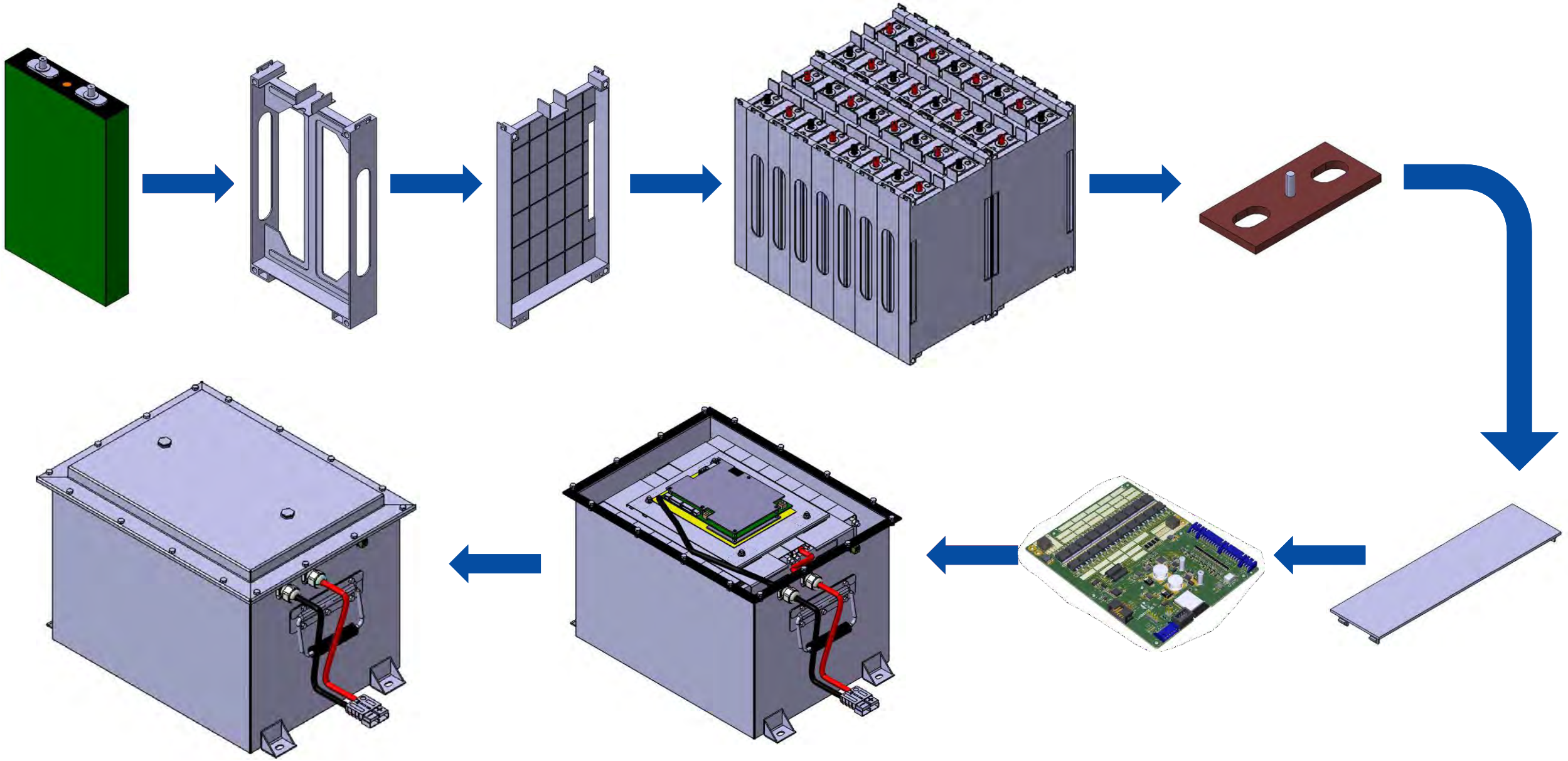
BATTERY ASSEMBLY PROCESS



BATTERY PACK – CRITICAL COMPONENTS

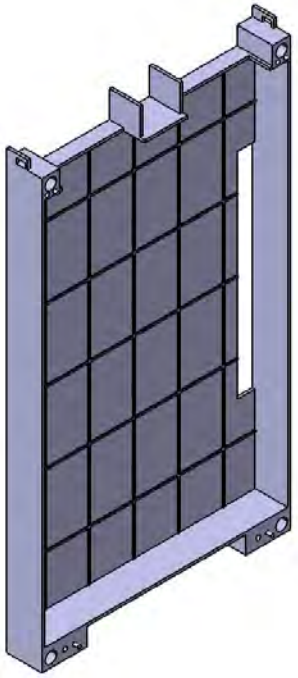
1. CELL SELECTION

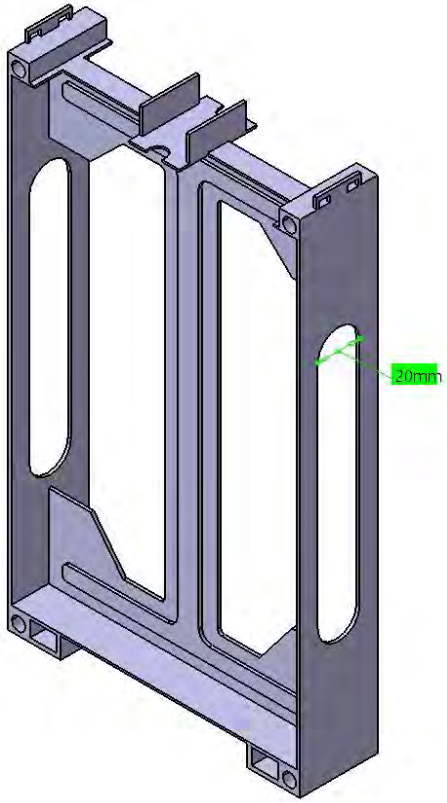
S. No.	Description	Specifications
1	Rated Voltage	3.2V
2	Rated Capacity	100 Ah
3	Voltage Range	2.5V - 3.65V
4	Max. Charging Current	0.5C
5	Continuous Discharge Current	1C
6	Peak Discharge Current	3C
7	Discharge Temperature	-20°C to 60°C
8	Charging Temperature	0°C to 60°C

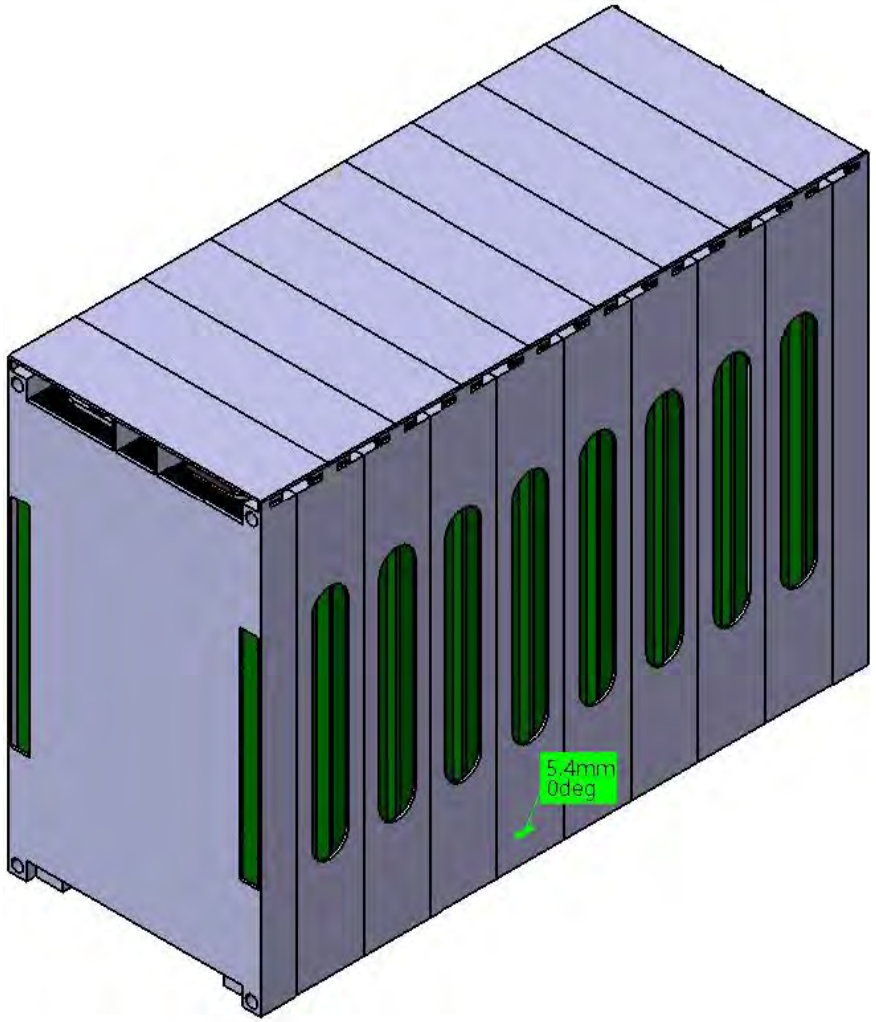
2. CELL HOLDERS FOR OPTIMAL PERFORMANCE

Cell Holders have been designed with utmost importance to Safety:

- Cell to cell gap maintained at 5mm.
- Designed for heat dissipation, 20mm gap on both sides.
- Material with high tensile & flexural strength.
- Shock & vibration absorbing material.







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3. MICROCONTROLLER SMART BMS

S. No.	Description		Unit	Min.	Typ.	Max.	Tolerance
1	Cell Nominal Voltage		V		3.2		
2	Charging Voltage		V			S x 3.65	±1%
3	Charging Current		A			0.5C	
4	Discharge Cut-off Voltage		V	S x 2.5			
5	Continuous Discharge Current		A			1C	
TEMPERATURE PARAMETERS							
1	Charging Temperature	Temperature	˚C	0		55	
		Humidity	%RH	0		90	
2	Discharging Temperature	Temperature	˚C	-20		60	
		Humidity	%RH	0		90	
3	Storage Condition	Temperature	˚C	-20		55	
		Humidity	%RH	0		90	
PROTECTION PARAMETERS							
1	Over-Charge Voltage Protection (OVP)		V		3.8		±10mV
2	Over-Charge Voltage Protection Release (OVPR)		V		3.65		±10mV
3	Over Charge Voltage Protection Delay Time		mSec	100		250	
4	Over-Discharge Voltage Protection (UVP)		V		2.5		±10mV
5	Over-Discharge Voltage Protection Release(UVPR)		V		2.8		±10mV
6	Over-Discharge Voltage Protection Delay Time		mS	100		250	
7	Over-Current Protection Discharge Protection (OCDP)		A		3C		±20A
8	Over-Current Protection Delay Time (OCPDT)		mS	5		100	
9	Short Circuit Current Protection Delay Time		Micro Sec	200	400	600	
10	Bleed Start Point		V		3.47		±2mV
11	Bleed Current		mA		50		±10mA
COMMUNICATION							
1	CAN, Bluetooth Communication With mobile app & IoT with Wi-Fi (or) 4G+GPS						

4. SMART BMS DASHBOARD

Device Id: a8:48:fa:9f:72:8e | ● Online

Device Name: Roshan_100A_Nline_728e

Overview

☑ Show detailed view

Customer Name		Cell Type	1	Cell Nominal Voltage	3.2V	Cell Rated Capacity
Pack Rated Capacity	100Ah	Pack Nominal Voltage	59.2V	Software Version	0.0.5.1	Hardware Version
Serial Number	1	Maximum Pack Voltage	60.8V	Minimum Pack Voltage	40V	Resistance
Number Of Cell	16	Charging Capacity	0A	Cell Pack Type		Serial Connection
Parallels Connection	0	Battery Manufacture Date	27/02/2022 12:00 AM	Battery Activation Date	27/02/2022 12:00 AM	Hardware Id
Model number	1	IMEI No	866545057398585	Product Activation Date	27/02/2022 12:00 AM	Cell Over Voltage Threshold
Cell Under Voltage Threshold	2479.4mV	Over Current in Charge Threshold	52.863436123348016A	Over Current in Dis-Charge Threshold	106A	Short Circuit in Dis-Charge Threshold
Over Temperature In Dis-Charge Threshold	65°C	Under Temperature In Dis-Charge Threshold	0°C	Over Temperature In Charge Threshold	60°C	Under Temperature In Charge Threshold
Alert Mask	511					

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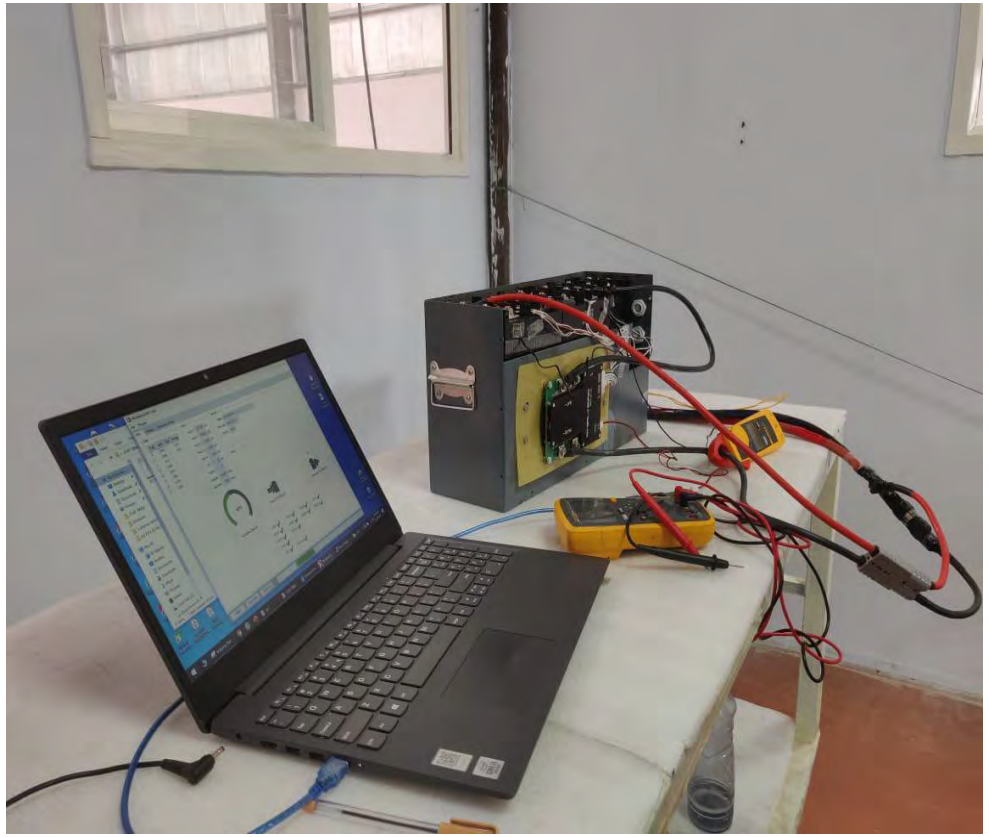
QUALITY CONTROL & BATTERY TESTING

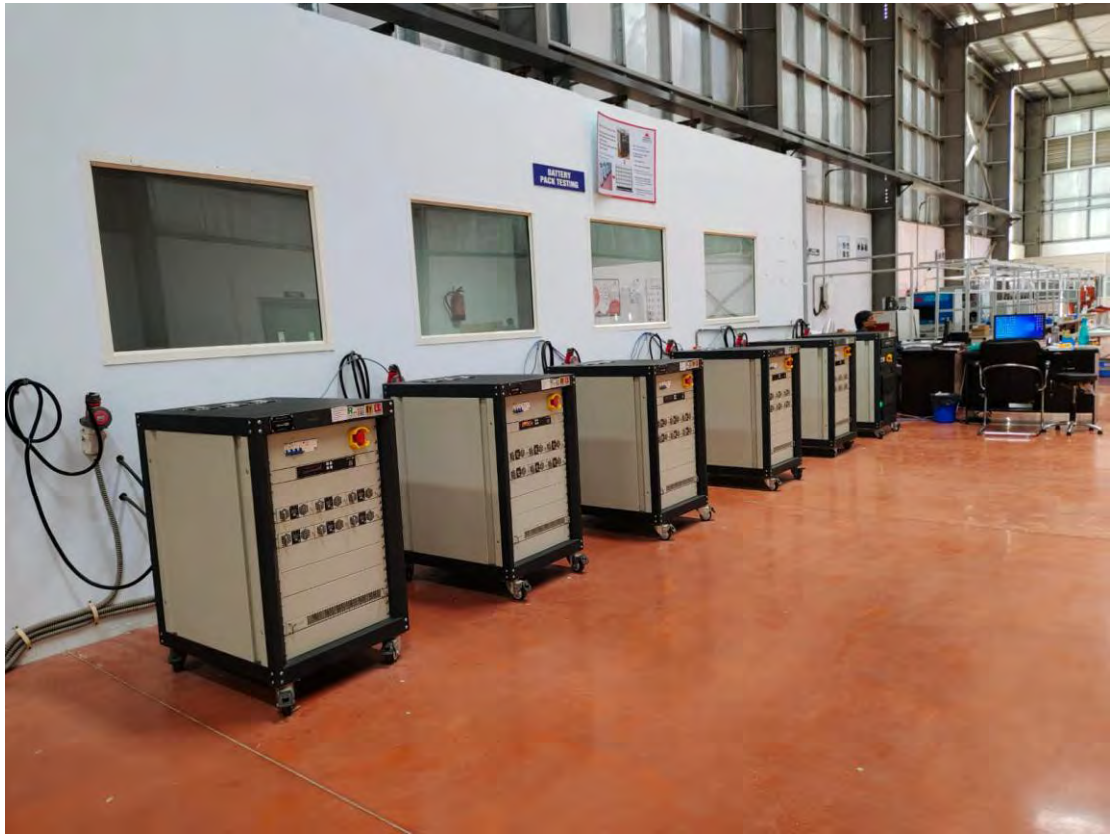
1. FINISHED PRODUCT TESTING PROCEDURE

a. CCCV Charging with 0.5C with charging Voltage of 3.65 x Cell Series charge up to 3.85 x Cell Series.

b. CC Discharging with 0.5C up to 2.5 x Cell Series.

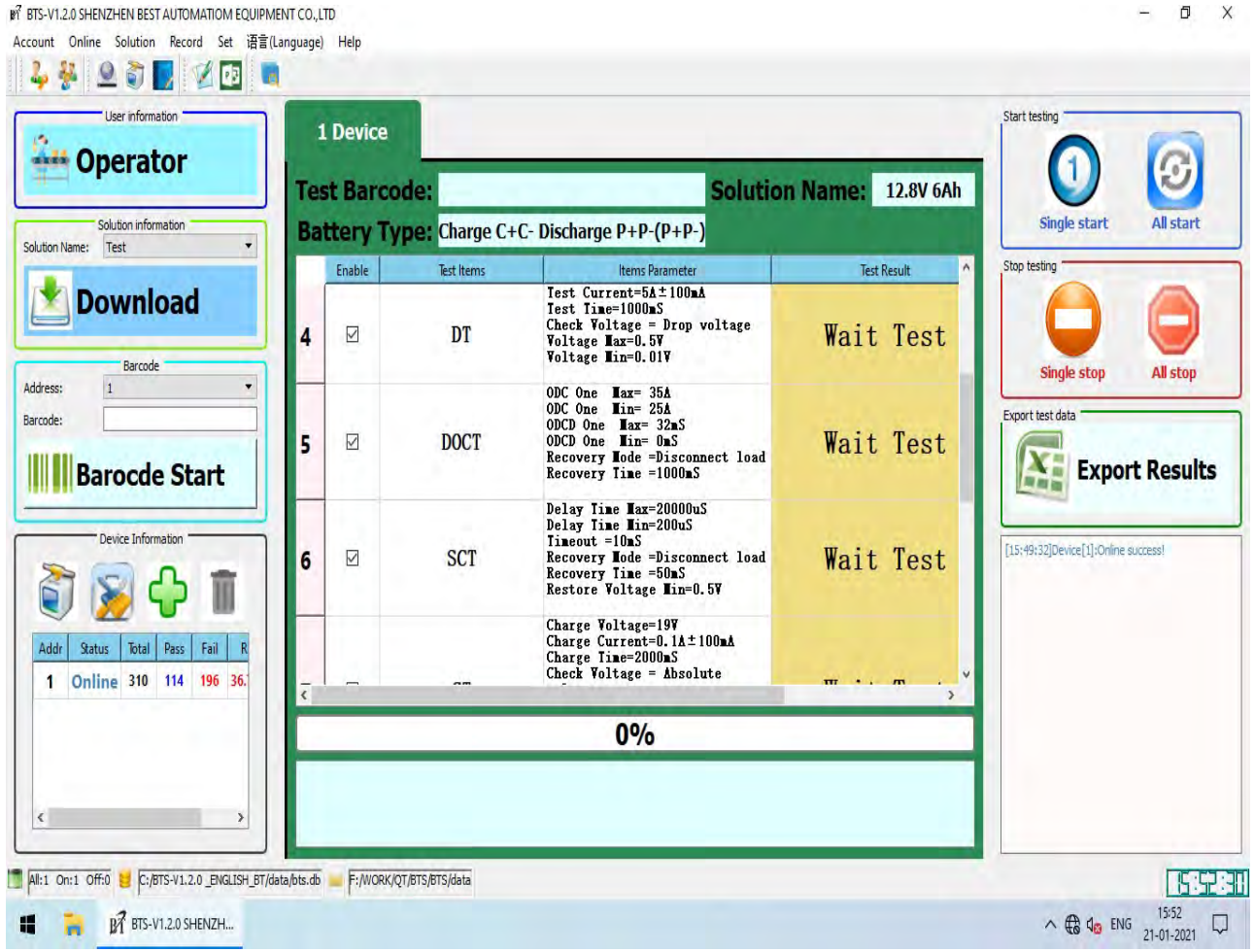
c. CCCV Charging with 0.5C with charging Voltage of 3.65V charge up to 3.85V.





2. BATTERY PACK INTEGRITY TESTING

Batteries undergo Integrity Testing where they are subjected to rigorous quality checks and efficiency of BMS controls.



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FIELD TESTING OF BATTERIES

SMART BMS DASHBOARD – REALTIME DATA WITH ALERTS & NOTIFICATIONS

Device Id: a8:48:fa:9f:72:8e | ● Online

Device Name: Roshan_100A_Nline_728e

Real Time

Updated Time: Mar 29, 2022, 11:50:17 AM

Pack Volt.	Current
53.09 V	-0.03 A

SOC	77%	**SOH**	100%
Average Cell Temperature	33.5°C	**Average Cell Voltage**	3324.31 mV
Internal Temperature	37 °C	**FET Temperature**	-

Max Cell Volt.	3325 mV	**Cell No**	1	**Min Cell Volt.**	3324 mV	**Cell No**	2
Max Thermistor Temp.	35°C	**Thermistor No**	2	**Min Thermistor Temp.**	32°C	**Thermistor No**	1

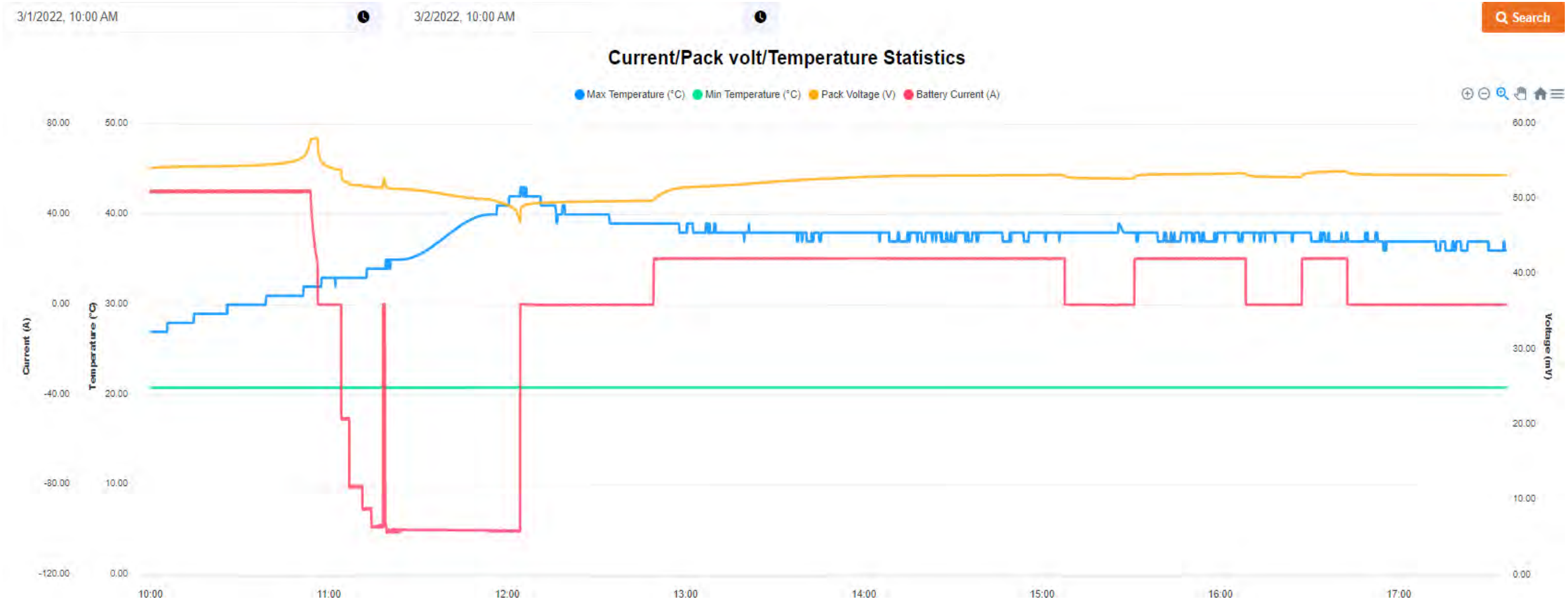
Alert Notifications

DESCRIPTION	TIME
Over Current Charge Alert	3/1/2022, 10:45:38 AM
Over Current Charge Alert	3/1/2022, 10:20:03 AM
Over Current Charge Alert	2/28/2022, 6:10:47 PM
Over Current Charge Alert	2/28/2022, 5:58:20 PM
Over Current Charge Alert	2/28/2022, 5:52:54 PM

Fault Notifications

DESCRIPTION	STATUS	TIME
Cell Under Voltage Fault	Unsolved	3/1/2022, 12:04:25 PM
Cell Over Voltage Fault	Solved	3/1/2022, 11:03:43 AM
Cell Over Voltage Fault	Unsolved	3/1/2022, 10:56:17 AM
Critical Over Discharge Fault Code	Unsolved	2/27/2022, 5:51:48 PM
Critical Over Charge Fault Code	Solved	2/27/2022, 5:51:47 PM

SMART BMS DASHBOARD – ACCESS TO HISTORICAL BATTERY DATA



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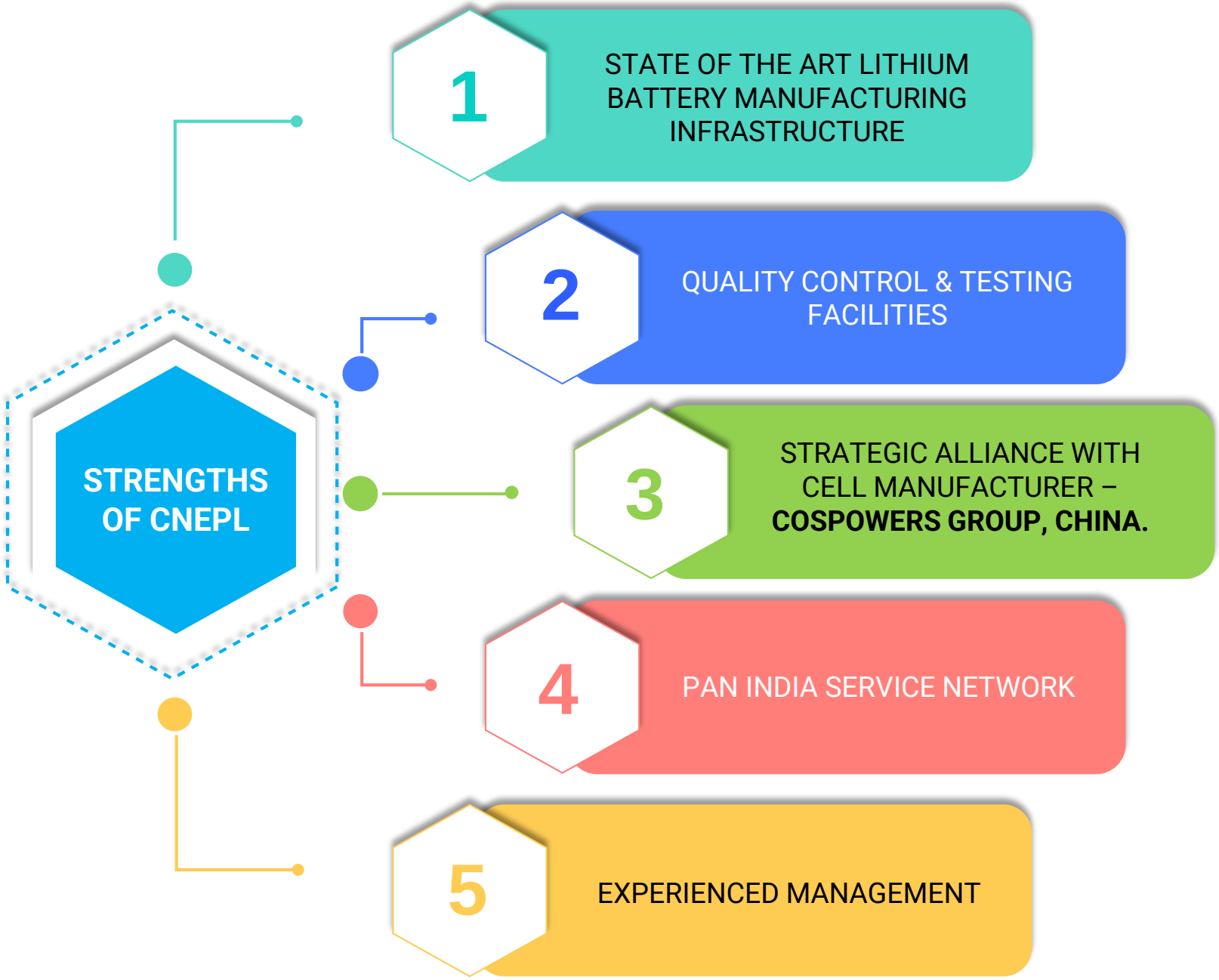

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CNEPL – OUR ESTEEMED CUSTOMERS

vodafone

Reliance
Industries Limited

EMERSON

AMERICAN TOWER®

Schneider Electric

Panasonic

airtel

TATA

indus TOWERS

THANK YOU!

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Plot No. 25-B, Hardware Park,
Kancha Imarat, Maheswaram, Rangareddy,
Hyderabad - 500005, Telangana, India.

Any questions?

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Website: www.cospowers.in