

*future*<sup>TM</sup> 

# LITHIUM TECHNOLOGY



Creating Eco Friendly, Safe & Green Batteries

Established in 1998, India's first Lithium Ion cell and Battery Pack manufacturing unit by prominent technocrats & scientists at Mohali, Punjab. We acquired the company in 2012, infused financial strength and are upgrading the facilities to convert it into a world class Lithium Battery unit by integrating up to date technology.

Our focus is to provide India with indigenous green energy solutions.

Highly experienced and qualified team of mentors with workforce, sales and service is dedicated to the objective of catering the demand of Lithium power storage solutions and to promote the renewable source of energy.

We manufacture more than 800 types of 1~32S Battery Packs, including over 30 types of BMS with SMBUS (I2C, HDQ Port), these are widely applied to almost all kind of battery packs.

In India, we are highly certified company in our segment, having BIS for the entire product range.



## DRIVING FORCE

### **Dr. G. P. Singh**

Chief Technical Advisor  
and Head of R&D

#### **Carries rich experience of serving:**

- ▶ IBM as Researcher
- ▶ Hitachi (HGST) USA as Principal Engineer
- ▶ Tata Institute of Fundamental Research (India)
- ▶ Max Planck (Germany) and many more.

#### **Owns:**

25 industrial publications & 14 US patents registered under his name.  
Initiated programs in Lithium research in India  
He is the guiding mentor for product development and research at Future Hi Tech.

### **Mr. J. P. Singh**

Managing Director

A renowned banker with 26 years of experience in financial management and legal advisor to many organizations, is our key promoter.

Winner of four "All India Awards" for excellence in customer service, deposit mobilization and reduction in non performing assets.

Carries degree in B. Sc. (Hons.), CAIIB, LLB and PGD (PM & IR).

He is passionate about bringing green energy to India by putting up this first of it's kind manufacturing unit of Lithium cells and batteries.

### **Dr. P. J. Singh**

Honorary Director Corporate Affairs

A visionary & successful industrialist.

Key speaker for many educational institutes that includes Punjab and Kurukshetra Universities.

#### **Government of India honoured him with two prestigious awards:**

- ▶ National Award as the best entrepreneur of the country.
- ▶ Distinguished Entrepreneurship Award.

#### **Thailand Government awarded:**

- ▶ Asia Pacific International Award for individual contribution for International integration.

His expertise and vision are driving factors of our business.



# TECHNICAL STRENGTH

We are well equipped and efficient enough in the field of Lithium cells and batteries under the guidance of above mentors' and the qualified / experienced in-house team of:

- ▶ Doctorates
- ▶ Electro Chemists
- ▶ Electrical, Electronic & Mechanical Engineers
- ▶ Management professionals and MBAs.

Many prominent guiding mentors from IIT Patna, Kharagpur and CECRI are on our advisory panel. They include:

- ▶ Scientists
- ▶ Scholars
- ▶ Professors
- ▶ Doctors

We carry technical & industrial collaborations with:

- ▶ Punjab University
- ▶ IIT Kharagpur & Patna
- ▶ Banaras University
- ▶ CECRI
- ▶ PEC University

# PRODUCTION, TESTING, R&D:

We have vast in-house manufacturing, testing and R&D facilities to design, develop and produce Lithium energy storage solutions and even fully customize as per client's requirements.

All our products pass through stringent quality and aging checks to deliver optimum results with possible long life.

The setup of installed machinery in production, testing and R&D is procured from world's best machine makers, such as:

- ▶ Maccor, USA
- ▶ Honbro, China
- ▶ Agilent Technologies, USA
- ▶ Mitotoyo, Japan
- ▶ Arcotronics, Italia
- ▶ Shimadzu, Japan
- ▶ Neware, China
- ▶ Vencon Technologies, Canada



## CAPACITY

- ▶ Battery production : 120 MW/pa
- ▶ Testing: 90 MW/pa





**BIS Certified**
**True Capacity**
**Eco Friendly**
**Long Life Cycle**
**Cost Effective**

With true capacities and cost effective Future brand of Lithium cells are specially crafted for Indian market, which is continuously struggling for right quality and price against major high price brands or poor low cost cells.

We offer Lithium cells which are produced under stringent quality controls at origin of manufacturing and thereafter goes through high standards of QC in India before reaching our customers.

### SALIENT FEATURES

- ⚡ Life upto 10 years
- ⚡ Contamination free energy
- ⚡  $\geq 95\%$  Power efficient
- ⚡ True capacity performer
- ⚡ Low IR
- ⚡ Light weight
- ⚡ Upto 6C current rating

### PROTECTION

- ⚡ Short circuit
- ⚡ Thermal shock
- ⚡ Penetration
- ⚡ Explosion

### TECHNICAL SPECIFICATIONS

S.No	Model	Capacity (mAh)	Size	Life Cycle (Nos)	Max. Discharge Current (A)	Pulse Discharge Current (A)	Applications
NMC 3.7 V (Cylindrical)							
1	CL650	650	14430	300-600	0.65	1.3	Solar, Medical & Portable Devices
2	CL011	1100	18650		0.55	2	
3	CL015	1500			1.5	3	
4	CL020	2000			4	10	
5	HL020	2000		700-1000	10	12	
6	CL022	2200		300-600	4.4	11	
7	HL022	2200		700-1000	8.8	10	
8	HL025	2500			7.5	12.5	
9	CL026	2600		300-600	5	13	Solar, ESS, EV
10	CL030	3000			3	9	
11	CI050	5000			26650	5	
LFP 3.2 V (Cylindrical)							
1	CF010	1000	18500	1000-1500	2	5	Solar, Portable Devices,
2	CF015	1500	18650	2000-5000	3	10	
3	CF021	2100	22650	1000-2000	2.1	4.2	
4	CF030	3000	26650	2000-5000	9	15	Solar, ESS, EV
5	CF032	3200			9.6	16	
6	CF050	5000	32650		10	25	
LFP 3.2 V (Prismatic)							
1	RF005	5 A	18*65*73	2000-5000	10	25	Solar, ESS, EV
2	RF010	10 A	18*65*145		20	50	
3	RF025	25 A	27*70*180		50	125	
4	RF050	50 A	36*130*165		100	250	
5	RF060	60 A	36*130*190		120	300	
6	RF100	100 A	36*130*290		200	500	

# Battery Packs For Portable Devices



- Long Operating Life
- True Capacity
- Maintenance Free
- Light Weight

Designed with precision for efficiency to deliver true capacity these battery packs provide back up for both DC & AC portable devices.

Some standard, popular and MNRE recommended battery packs are mentioned as follows, where as we offer unimaginable huge range for each and every requirement, thus highly customized options available.

## SALIENT FEATURES

- Efficient battery with true capacity
- Customizable shape and sizes
- No maintenance required
- Built-in PCM for protection
- Light in weight, long in life

## TECHNICAL SPECIFICATIONS

S.No	Models	Chemistry	Energy (Wh)	Description	Life Cycle (Nos)	Weight (gms)	Dimensions (mm)	Applications
1	LR201	NMC	4	3.7V 1.1 Ah	300	50	19x19x70	Solar Lantern
2	FR001	LFP	5	3.2V 1.5 Ah	2000	50	19x19x70	
3	FR112	LFP	7	3.2V 2.1 Ah	1000	50	23x23x70	Solar / AC Portable Devices
4	LR001	NMC	8	3.7V 2.2 Ah	500	50	19x19x70	Solar Lantern
5	FR113	LFP	13	3.2V 4.2 Ah	1000	100	45x24x70	Solar / AC Portable Devices
6	FR006	LFP	19	6.4V 3.0 Ah	2000	200	45x45x70	Solar Lantern
7	LR020	NMC	16	11.1V 6.6 Ah	500	100	60x60x70	Solar / AC Portable Devices
8	LR010	NMC	73	7.4V 2.2 Ah	500	450	38x20x70	
9	LR081	NMC	58	11.1V 5.2 Ah	500	300	Hexagonal-58 Height-75	
10	LR182	NMC	111	11.1V 10Ah	500	750	60x70x100	
11	LR022	NMC	122	11.1V 11 Ah	500	750	40x95x135	



## PROTECTION

- Reverse polarity
- Short circuit
- Over voltage & current
- Cut-off charge & discharge release

# Battery Pack

## for Solar Street Light



- 8+ Years Life
- Upto 2 kW Capacity
- Customizable Sizing
- Robust

To meet the initiative of Govt of India and guidelines of MNRE to produce eco friendly and green batteries for Solar applications, we, being their channel partners, offer following standard Lithium ion and Lithium phosphate Made in India batteries.

Some standard packs are listed below and any other capacity can be developed or indigenously designed.

### SALIENT FEATURES

- ⚡ MNRE & BIS approved
- ⚡ Warranted for true capacity & performance
- ⚡ Light in weight, customizable sizing
- ⚡ No maintenance required
- ⚡ 2000+ life cycles
- ⚡ Easy to install



### TECHNICAL SPECIFICATIONS

S.No	Description	160W			120W		
		FR051	LR032	LR156	FR108	LR157	LR183
1	Cathode Chemistry	LFP	NMC	NMC	LFP	NMC	NMC
2	Voltage (Vdc)	12.8	14.8	14.8	12.8	14.8	14.8
3	Capacity (Ah)	12.8	11	10.75	9.6	8.6	8
4	Energy (Wh)	164	163	160	1201	127	119
5	Internal Resistance (mΩ)	≤80	≤120	≤110	≤120	≤135	≤150
6	Dimensions (mm)	120x120x70	20x90x280	20x90x280	82x30x275	90×90×75	90x90x75
7	Weight (kg)	1.6	1	1	1.2	0.8	0.8
8	Current Rating (A)	5	4	4	3	3	3
9	Charge Voltage (V)	14.6	16.8		14.6	16.8	
10	Operating Voltage (V)	14.6 to 10	16.8 -11.2		14.6 to 10	16.8 -11.2	
11	Compatible Solar Panel (Wp)	50			40		
12	Life cycle (Nos.)	1500-2500	400-600	1500-1800	1500-2500	1500-1800	400-600

### SOME MORE STANDARD PACKS

S.No	Model	Chemistry	Voltage(V)	Capacity (Ah)	Energy (Wh)	Dimensions (mm)	Life Cycle (Nos)	Weight (Kg)
1	LR144	NMC	7.4	13.2	98	120 x 40 x 75	400-600	1
2	LR025	NMC	11.1	17.6	195	140 x 80 x 75	400-600	1.5
3	FR025	LFP	12.8	21	269	210 x 120 x 75	1500-2500	3
4	LR034	NMC	14.8	26.4	391	160 x 120 x 75	400-600	3
5	LR073	NMC	11.1	66	733	220 x 200 x 80	400-600	5.5
6	FR101	LFP	25.6	39	998	180 x 390 x 75	1500-2500	11.5
7	LR165	NMC	14.8	135	2000	160 x 300 x 160	400-600	15

### PROTECTION

- ⚡ IP 65 enclosure
- ⚡ Short Circuit
- ⚡ Reverse Polarity
- ⚡ Over voltage & current
- ⚡ Charge & discharge release

# Battery Pack

## for Energy Storage System



- Robust
- Reliable
- Modular
- Expandable

In order to meet eco friendly and long life reliable source of energy storage, we have designed robust battery packs based on Lithium ion and Lithium Phosphate chemistries.

These packs are indigenously designed and Made in India to suit Indian climatic conditions, individual demand of flexible shapes and sizes, long life cycles and of course these are cost effective.

### SALIENT FEATURES

- Long life 3 to 8 years
- True capacity guaranteed
- Efficient Battery Management System
- High frequency operations
- IP65 enclosure
- Extendable backup



### TECHNICAL SPECIFICATIONS

S.No	Model	2.5 kW			5.0 kW		
		ES025			ES050		
1	Cathode Chemistry	LFP	NMC	NMC	LFP	NMC	NMC
2	Voltage (Vdc)	48	48	48	48	48	48
3	Capacity(Ah)	48	50	50	100	100	100
4	Energy (Wh)	2400			4800		
5	IR(mΩ)	60	120	150	30	100	120
6	Dimensions (mm)	260 x300 x 200			300x400x200		Customizable
7	Weight (kg)	27	18	18	55	36	35
8	Charge Current (A)	20			35		
9	Discharge Current (A)	50			100		
10	Charge Voltage (V)	55					
11	Operating Voltage (V)	55-40					
12	Life Cycle (Nos.)	1500-2500	1200-1500	400-600	1500-2500	1200-1500	400-600

### SOME MORE STANDARD PACKS

S.No	Model	Unit	10 kW	15 kW	20 kW
			ES100	ES150	ES200
1	Cathode Chemistry		LFP	LFP	LFP
2	Voltage	Vdc	48	48	48
3	Capacity	Ah	200	300	400
4	Energy	Wh	9600	14400	19200
5	Internal Resistance	mΩ	30	20	15
6	Dimensions	mm	Customizable		
7	Weight	kg	120	190	270

### PROTECTION

- Over voltage & current
- Charge & discharge release
- Short circuit
- Reverse Polarity



# Portable Lithium Generator



🌱 Modified Sine Wave 🌱 Built-in Solar Charger 🌱 Battery Level LED Indicators 🌱 Eco Friendly

These are portable, light weight, silent and easy to carry to any remote location on wheels, hence can be utilized in indoor or outdoor activities such as camping, disaster or any other emergency etc.

Where instant power is required off-grid for all kind of AC and DC electronic appliances.

## SALIENT FEATURES

- ⚡ Operate AC & DC devices
- ⚡ Can connect to multiple load
- ⚡ Easy to install and maintain
- ⚡ Drop Resistance
- ⚡ Moveable on wheels.
- ⚡ Economical & eco friendly
- ⚡ UPS function
- ⚡ Extendable backup



## TECHNICAL SPECIFICATIONS

S.No	Model		PG006	PG015	PG030
1	Power	W	600	1500	3000
2	Input Voltage(V)	AC	220 V, 50 Hz		
		DC	18		36
3	Output	AC	220 V, 50 Hz		
			USB 5 V x 2, DC12 Vx6		
4	Lithium Battery	Voltage (V)	14.8		25.9
		Capacity (Ah)	65	120	
5	Solar Controller	Type	PWM		
		Max. Power (W)	240	450	750
		Current (A)	20	30	
6	Charger	Max. Current (A)	N/A		30
7	Solar Panel	Type	Poly Solar Panel		
		Voltage (V)	18	36	
		Max. Current (A)	20		30
		UPS Function	NIL		YES
8	Size	LxWxH (mm)	500x228x390	535x228x415	535x375x415
9	Weight (with battery)	kg	20	32	45
10	Operating Temperature	°C	-10 to 60		

## PROTECTION

- ⚡ Over temperature
- ⚡ Over voltage, current and load
- ⚡ Over load
- ⚡ Reverse polarity





DC / AC to AC

Low Distortion  $\leq 3\%$

Modified Sine Wave Inverter

Lithium powered UPS Power Inverter that can operate on both DC and AC inputs. Suitable to operate all kind of electronic goods, devices and lighting in both indoor and outdoor conditions.

Light weight, portable and easy to carry anywhere.



## TECHNICAL SPECIFICATIONS

### SALIENT FEATURES

- ⚡ Can operate all AC and DC devices
- ⚡ Highly efficient
- ⚡ Can connect to multiple load
- ⚡ No EMI interference
- ⚡ Easy to install, operate and maintain
- ⚡ Extendable backup

### PROTECTION

- ⚡ Over temperature
- ⚡ Over voltage, current and load
- ⚡ Reverse polarity
- ⚡ Low voltage & low battery indication

S.No	Description	Parameter	Model		
			UI008	UI015	UI030
			800W	1.5 kW	3.0 kW
1	Input Voltage	AC	220V, 50 Hz		
		DC (V)	12.8	12.8 / 25.6	
2	Output	AC	220V, 50 Hz		
3	Static Current	Tolerance (A)	≤ 0.6	≤1	≤ 1
4	Load Efficiency	90%			
5	Battery Pack	Li-ion	12.8 V	12.8 / 25.6 V	
6	Power (W)	Continuous	800	1500	3000
		Peak	1600	3000	6000
		Overload	900	1500	3200
7	Low Voltage (V)	Alarm	10.5	9.5 / 19.5	
		Cut-off	10	10 / 20	
8	Size (mm)	LXWXH	235x95x55	360x190x90	390x190x90
9	Weight	kg	1	2	3
10	Operating Temperature	°C	-10 to 60		

# Home Lighting Power Bank



☀ Solar/Grid Input    🔌 DC/USB Output    🔋 Lithium Powered    📺 LCD Display

Unique features of DC and AC charging makes our Home Lighting Power Bank a versatile device which can be used in both urban and rural areas and for outdoor usage to run variety of DC devices, fans and lighting.



## TECHNICAL SPECIFICATIONS

### SALIENT FEATURES

- ⚡ Compact Design
- ⚡ Light weight and portable device
- ⚡ Quick charging
- ⚡ Zero maintenance
- ⚡ With Lithium high energy storage battery
- ⚡ BMS for add-on safety
- ⚡ Including AC to DC adapter for grid charging
- ⚡ Built-in sine wave inverter

### PROTECTION

- ⚡ Over temperature
- ⚡ Over voltage, current and load
- ⚡ Reverse polarity
- ⚡ Low voltage & low battery indication

S.No	Description	Parameter	Model		
			PB120	PB240	PB360
			120 Wh	240 Wh	360 Wh
1	Input	AC	220 V 50 Hz		
		DC	12 / 19 V		12 / 19 / 24 V
2	Output options	PORT X 2	USB 5 V 2.1 A		
		DC port X 3	10 / 60 / 80 W		10 / 80 / 100 W
3	Battery Pack	Li-ion	11.1 V 10 Ah	11.1 V 20 Ah	11.1 V 30 Ah
4	Charging Options		Solar (10 W- 180 W) / Grid		
5	Charging Time	AC	3 hr		
		Solar	5 hr		
6	Overload Ability	Max.	120 % < load < 130 % for 10 minutes		
		Peak	130 % < load < 150 % for 10 second		
7	Size	LxWxH (mm)	220 x 130 x 55	255 x 130 x 55	285 x 155 x 65
8	Weight	kg	1.3	2	2.7
9	Operating Temperature	°C	-10 to 60		

## AC Output

## LED Display

## Intelligent Fan

Modified sine wave based, our Smart Car Inverter is a unique device to convert DC supply to AC for operating innumerable AC devices like laptop, TV, fan, cooler, etc. This is convenient conversion of car battery power to operate domestic appliances.

### SALIENT FEATURES

- ⚡ Highly efficient
- ⚡ Modified sine wave mode
- ⚡ Iron and customized enclosure
- ⚡ Quiet operation, long service life.
- ⚡ Can be used in the car cigarette lighter head.
- ⚡ LED Display

### TECHNICAL SPECIFICATIONS

S.No	Model	CI120	CI200
1	DC Input (V)	10 to 15	
2	Base	USB / DC connector	
3	Short Circuit Current (A)	≤0.68	≤0.75
4	AC Output	220 V, 50Hz	
5	Power (W)	120	200
6	Size (LXWXH)(mm)	95x64x38	170x95x54
7	Weight (gms)	300	760



# Lithium Powered LED Lamp

## Grid Cut-off Sensor

## In-built Battery

## Solar/Grid Charging

Lithium Powered LED Lamp & Tube are revolutionary devices that can be charged through solar panel and USB port and can provide light for 4 hours and life of lamp is more than 4 years. Battery inside is replacable and can be used for another 4 years and so on.

### SALIENT FEATURES

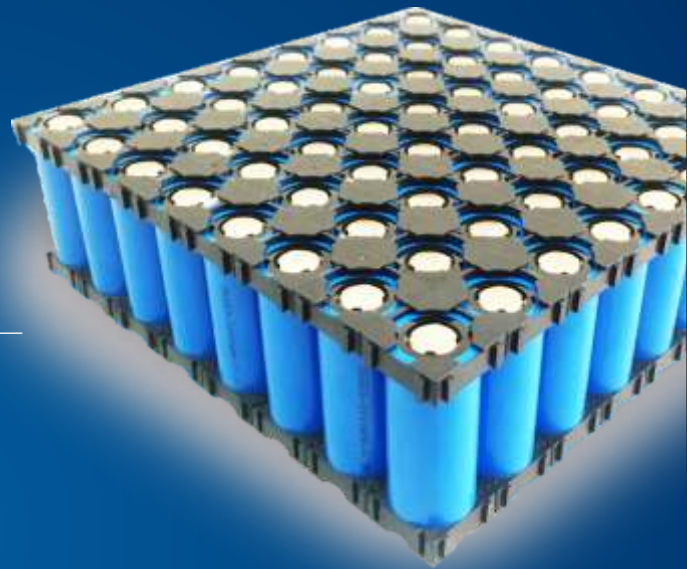
- ⚡ Saves energy
- ⚡ Efficient and reliable
- ⚡ Built-in battery maintenance
- ⚡ Good for powerless locations

### TECHNICAL SPECIFICATIONS

S.No	Model	LI005	LI007	LI009	LI012
1	DC Input (V)	5 & 12			
2	Base	USB / DC connector			
3	Corelated Colour Temperature (CCT)	3000 / 7000 / 12000 K			
4	Power (W)	5	7	9	12
5	Usage Time (Hrs)	3.5 to 5			
6	Battery	3.7 V 2000 mAh			
7	Life Cycle (Nos)	700-1000			



# PRODUCT RANGE



## Cell

- ▶ Lithium-ion
- ▶ Lithium Ferro Phosphate (LFP)
- ▶ LIPO
- ▶ Cylindrical, Polymer and Prismatic

## Battery Pack

- ▶ Lithium-ion  
(Cylindrical / Polymer / Prismatic)
- ▶ Based on LFP, NMC, LMO, LCO chemistries  
Up to 5 KWh & extendable  
Soft and hard pack options
- ▶ For Solar, EV, Telecom &  
Portable Applications

## Portable Storage

- ▶ Home Lighting Power Bank
- ▶ UPS Power Inverter
- ▶ Portable Lithium Generator

## Other Products

- ▶ BMS/PCM
- ▶ Power bank
- ▶ Hand held search light
- ▶ Mobile & Computer accessories

ENERGY  
ANYTIME  
ANYWHERE

We are certified for the essential parameters of the industry which includes:



Further we are empanelled with following agencies:

**DRDO-SASE | BEL | COD**  
& many more

**MNRE Channel Partner**

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