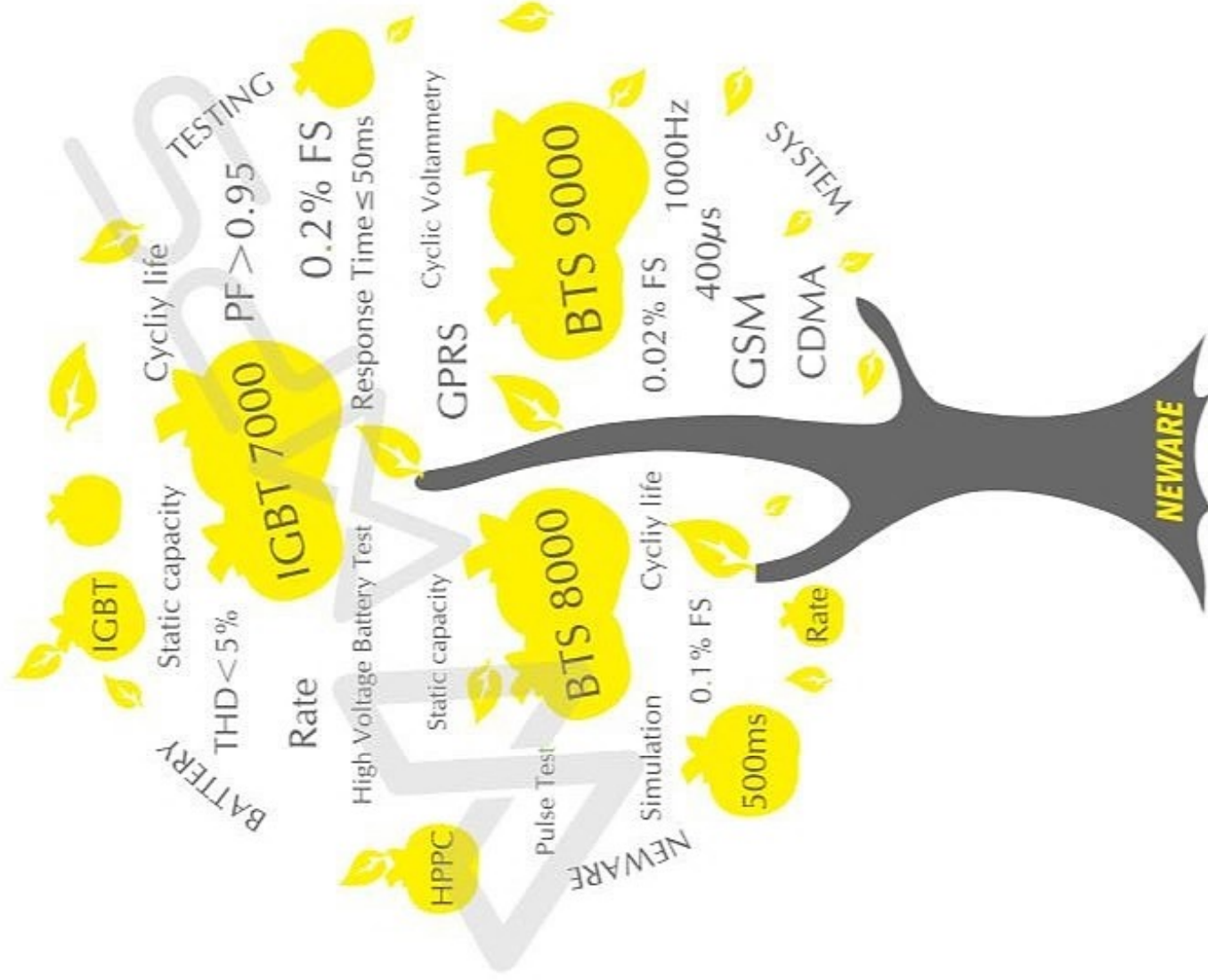


# NEWARE

(618) 233-8866 : customerservice@newareusa.com : [www.newareusa.com](http://www.newareusa.com)

20 years of innovation



## About Neware

Since 1998, Neware has been committed to providing world-class testing solutions for the batteries and capacitors. We adopt SAP as our ERP system and comply with ISO9000 quality management standard. Our factory spans over 8,000 square meters in industrial park, Shenzhen office spans over 2,000 square meters, housing all R&D, Engineering, Sales and CRM personnel. To explore international market, we launched Hong Kong and France offices in 2011.

1999 CIBF 4th

The first-generation tester came out, based on RS232.

2001 CIBF 5th

BFGS (Battery Formation and Grading System) went into mass production.

2003

The 2nd-generation tester BTS-2000 came out.

2004 CIBF 6th

ISO9000 certified, and adopted the SAP system.

2006 CIBF 7th

The 3rd-generation tester BTS-3000 was developed successfully, with max power up to 21kVA.

2007

Adopted AMEBA business model, and we have also enlarged our office and factory.

2008 CIBF 8th

The 4th-generation tester BTS-4000 was developed successfully, it provides pulse DCIR test.

2009

EVTS-6000 and auxiliary channel have been developed successfully, which provide EV battery testing. Growing into one of the main suppliers of EV battery testers in China.

2010 CIBF 9th, EVS-25

The 5th-generation tester BTS-8000 was developed, providing simulation of driving. Our company was awarded the "Harmonious Labor Relations Enterprise" and the "Top 500 Growing Enterprise" by the government.

2012 CIBF 10th

The 6th-generation tester BTS-9000 was developed, providing the high-performance test solution to battery material research.

2013 EVS 27

LIMS was launched for laboratory information management. It complies with ISO17025 and focuses on testing process and result management. And we were awarded the Top 100 Independent S&M Innovation Company. New instrument utilizing energy saving technology successfully launched.

2014 Battery Japan, Battery Show, CIBF 11th

We attended Battery Japan 2014 and Battery Show 2014 as an exhibitor.

2015 Battery Japan, Battery Show, EVS28 Korea, Intersolar Europe 2015

More BTS9000 models launched successfully. The market share of Neware reached new heights.

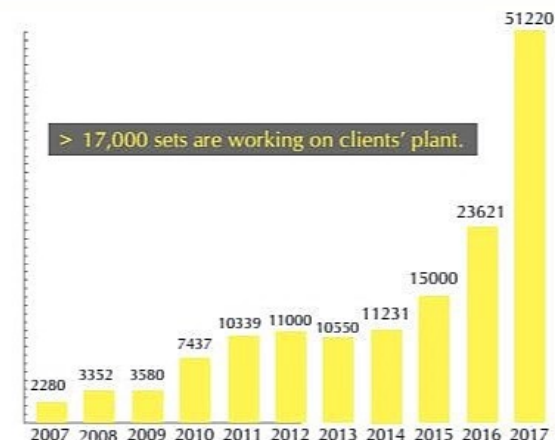
2016 CIBF 11th

More BTS9000 models launched successfully. The market share of Neware reached new heights.

2017

Sales increased 1.5 times comparing with year 2016. Joined in more than 40 conferences and exhibitions domestic and overseas.

## 1 Neware Market



## 2 Neware Profile



Since 1998  
20 years



Revenue for R&D  
10 %



Largest Single Unit  
1000 kVA



Shipped Equipments  
170,000 sets



Uninterrupted  
Operation Hours  
68,000 h



Customers  
26,000



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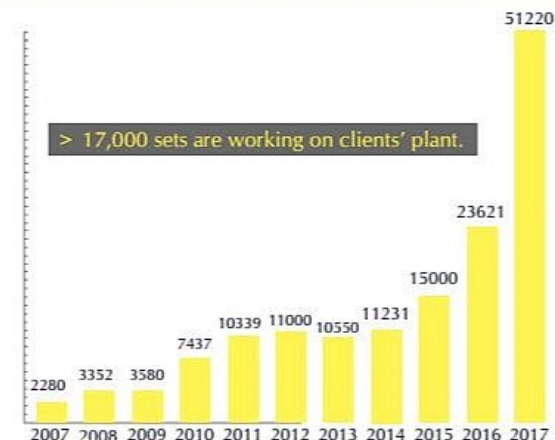
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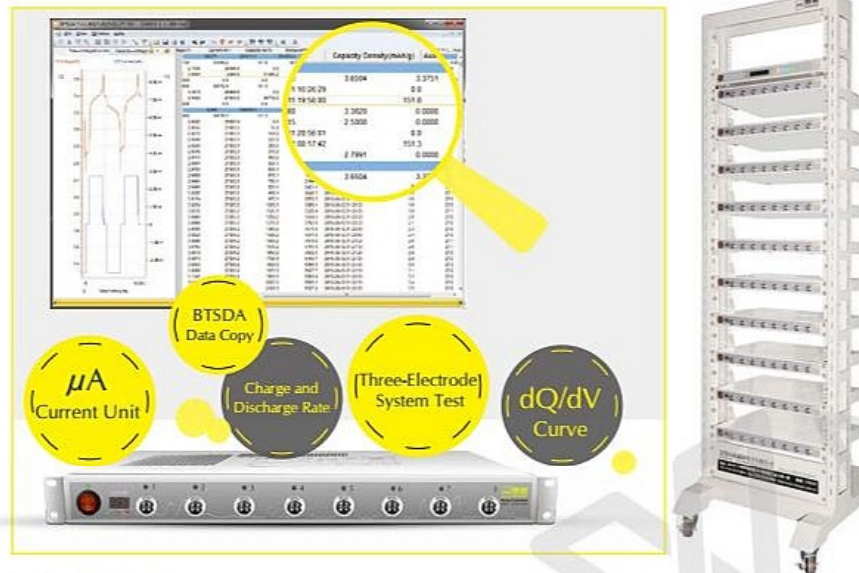
Uninterrupted  
Operation Hours  
68,000 h



Customers  
26,000

## BTS 4000 (Power)

BTS 4000 entered into market in the year of 2008. Now it is one of the most successful and most popular battery testing system in China. Thousands of battery manufacturers, battery research institutes and laboratories use it as their primary testing partner for their various testing activities.



### Applications

DCIR / Pulse Test / HPPC;

Rate, Static capacity, cycle life and etc.

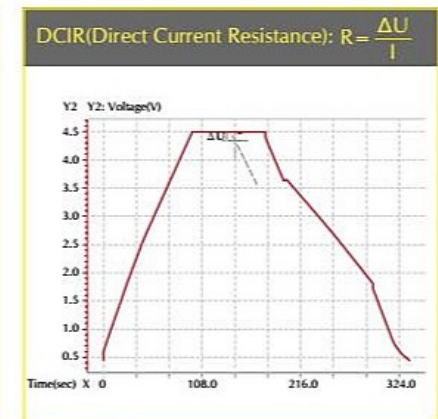
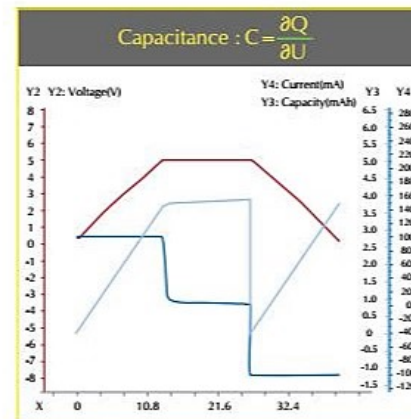
### Feature

Resolution:	AD: 16bit; DA: 16bit;
Accuracy:	0.05% FS;
Response Time:	$\leq 10ms$ (Current in the range 10% ~ 90% FS);
Max. Output Power:	21kVA;
Data Acquisition Frequency:	10Hz/100Hz Optional;
Minimum Pulse Width:	500ms.

\*For testers power range  $\leq 30VA$ , the accuracy is 0.05%FS  
For testers power range  $> 30VA$ , the accuracy is 0.1%FS

## BTS 4000 (Power)

Due to the rapid data acquisition frequency, BTS 4000 could also be applied for super capacitor or EDLC (Electronic Double Layer Capacitor) tests. Through our advanced software, the capacitance, DCIR(Direct Current Internal Resistance) and LC(Leakage Current) could be easily calculated.



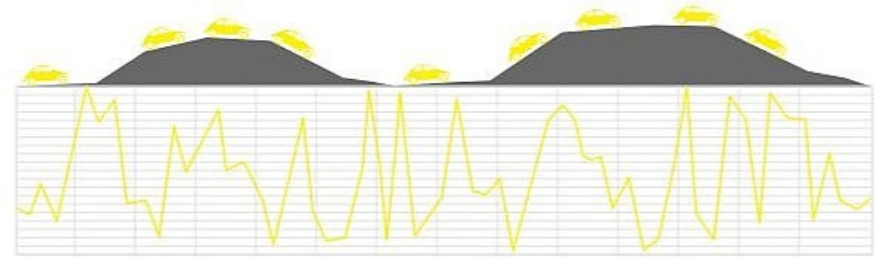
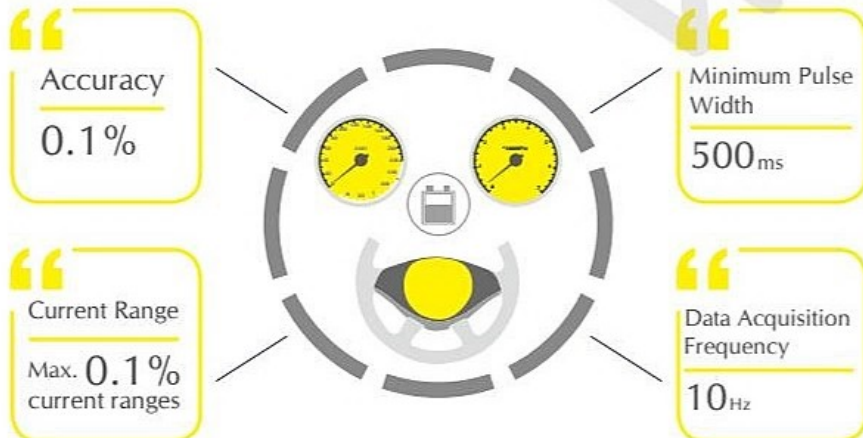


# BTS 8000 (Driving Cycle Simulation)

## Application



## Features

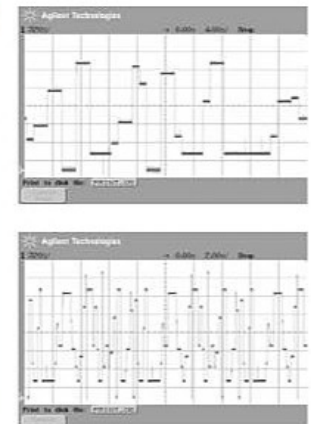
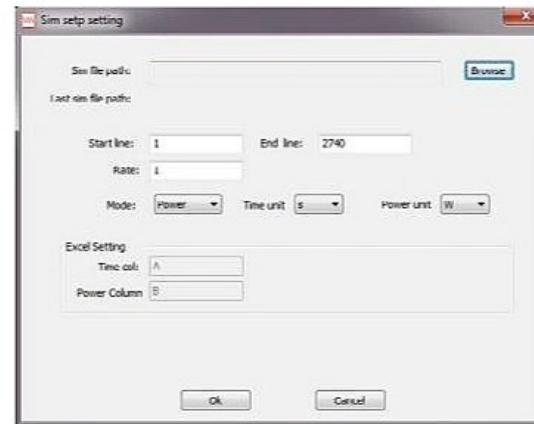


## Applications

Driving Cycle Simulation;  
Pulse Test / HPPC;  
Rate, Static capacity, cycle life and etc.

## Feature

Resolution:	AD: 16bit; DA: 16bit;
Accuracy:	0.1% FS;
Response Time:	≤ 20ms (Current in the range 10% ~ 90% FS);
Max. Output Power :	21kVA;
Data Acquisition Frequency :	10Hz;
Current Ranges:	Max. 4 current ranges;
Minimum Pulse Width:	500ms.



## IGBT 7000 (Electric Vehicle Testing System)

Characterized with IGBT, reversible AC/DC converter and CAN supported, our EVTS 7000 brings you higher energy efficiency, smaller space and much convenient to utilize the existing gauge integrated in BMS/BMU.

# IGBT

## CAN Bus



## Applications

DCIR / Pulse Test / HPPC;

Rate, Static capacity, cycle life and etc.

## Feature

Resolution:	AD: 16bit; DA: 16bit;
Accuracy:	0.1% FS;
Response Time:	≤ 10ms (Current in the range 10% ~ 90% FS);
Max. Output Power:	21kVA;
Data Acquisition Frequency:	10Hz;
Channels Parallel:	Up to 4 channels;
Minimum Pulse Width:	500ms.

For some battery packs without BMS, our auxiliary voltage and temperature sensors will help you to detect the voltage and temperature of every single cell in battery packs.

**Voltage** and **temperature** of cells in battery packs.





## BTS 9000

### Applications

GSM / CDMA / GPRS and other pulses tests;

Rate, Static capacity, cycle life and etc.

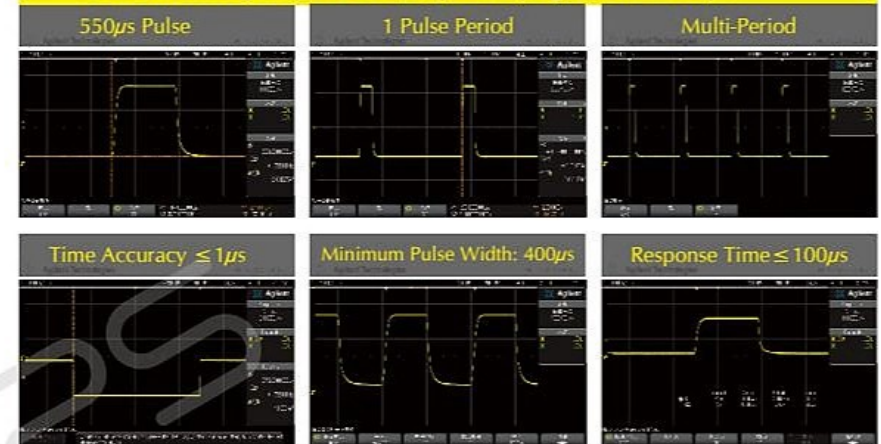
### Feature

Resolution:	AD: 16bit; DA: 16bit;
Accuracy:	0.02% FS;
Response Time:	$\leq 100\text{ms}$ (Current in the range 10% ~ 90% FS);
Minimum Pulse Width:	400 $\mu\text{s}$ ;
Data Acquisition Frequency:	1000Hz;
Voltage Range:	5V;
Current Ranges:	Range 1: 160 $\mu\text{A} \pm 32\text{nA}$ Range 2: 5mA $\pm 1\mu\text{A}$ Range 3: 160mA $\pm 32\mu\text{A}$ Range 4: 5000mA $\pm 1\text{mA}$



## Cutting-edge Technology for Battery Material Research

GSM Curves Output by BTS 9000, Captured by Agilent Oscilloscope



Hardware  
response time  
 $\leq 100 \mu\text{s}$

Min pulse  
width  
400  $\mu\text{s}$

Accuracy  
0.02%



4 ranges

Data acquisition  
frequency  
1000Hz

Offline mode  
data protection  
16GB

## BTS ES (Energy Saving)



### Applications

Bulk Testing / Mass Production Testing;  
Rate, Static capacity, cycle life and etc.

### Feature

Resolution:	AD: 16bit; DA: 16bit;
Accuracy:	0.1% FS;
Response Time:	≤ 20ms (Current in the range 10% ~ 90% FS);
Max. Output Power:	10kVA (user-definable);
Data Acquisition Frequency:	1Hz;
TDK(Total Harmonic Distortion):	5%;
PF:	≥ 0.98.

For a battery manufacture, it manufactures 25Ah batteries with LFP cathode, and have below similar testing process:

Formation(Fully Charged) ➡ Fully Discharged ➡ Fully Charged ➡ Fully Discharged  
➡ 50% SOC

Coulombic Efficiency	100%
Daily Input	1,000pcs
Electricity Price	0.18US\$/kWh
Internal Consumption (for charge/discharge per channel)	8Wh

	Discharge	Charge
Energy Saving	54%	67%
Conventional		45%

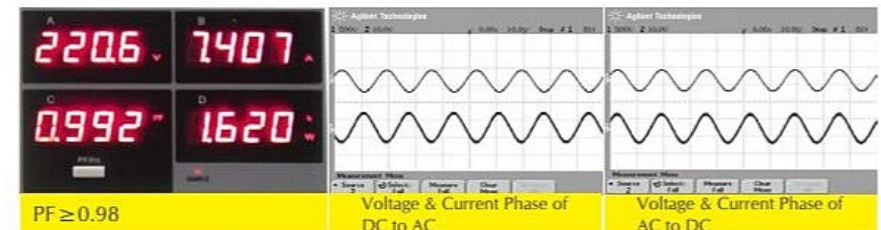
	Energy Required for Charge	Energy Required for Discharge	Energy Consumption
Energy Saving	$2.5 \times (25 \times 3.2 \times 1,000) / 67\%$	$-2 \times (25 \times 3.2 \times 1,000) / 54\%$	$4.5 \times 8 \times 1,000$
Conventional	$2.5 \times (25 \times 3.2 \times 1,000) / 45\%$	0	$4.5 \times 8 \times 1,000$

Unit: Wh



Total Daily Electricity Consumption	Annual Electricity Consumption
248.1kWh	64,506kWh
480.4kWh	124,915kWh

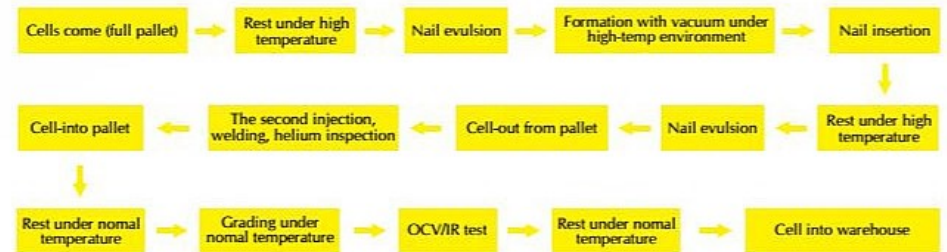
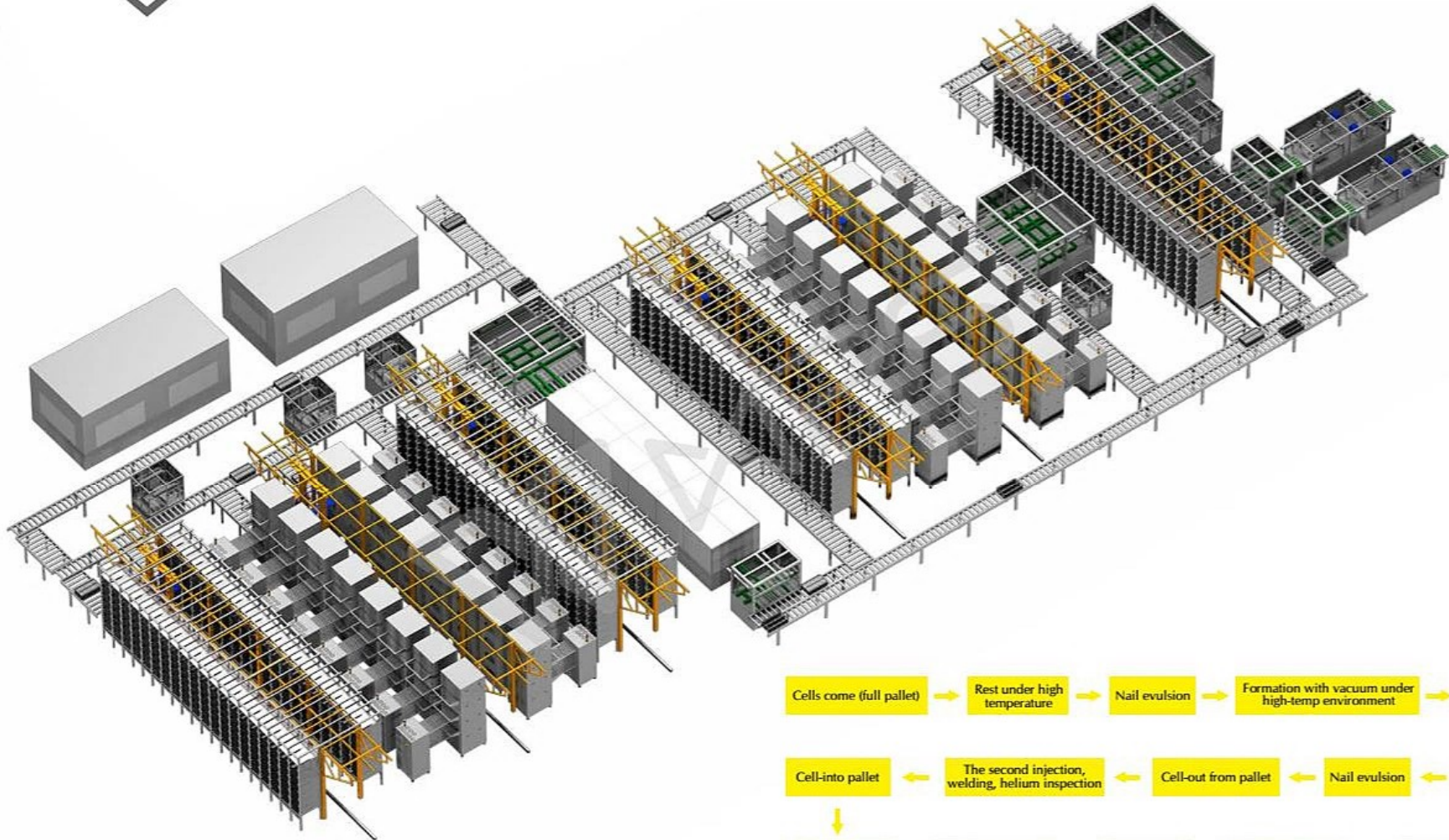
Total Energy Saved	60,407.62kWh
Total Money Saved	US\$ 10,873.37
Total Carbon Dioxide Reduced	42.62Metric Ton



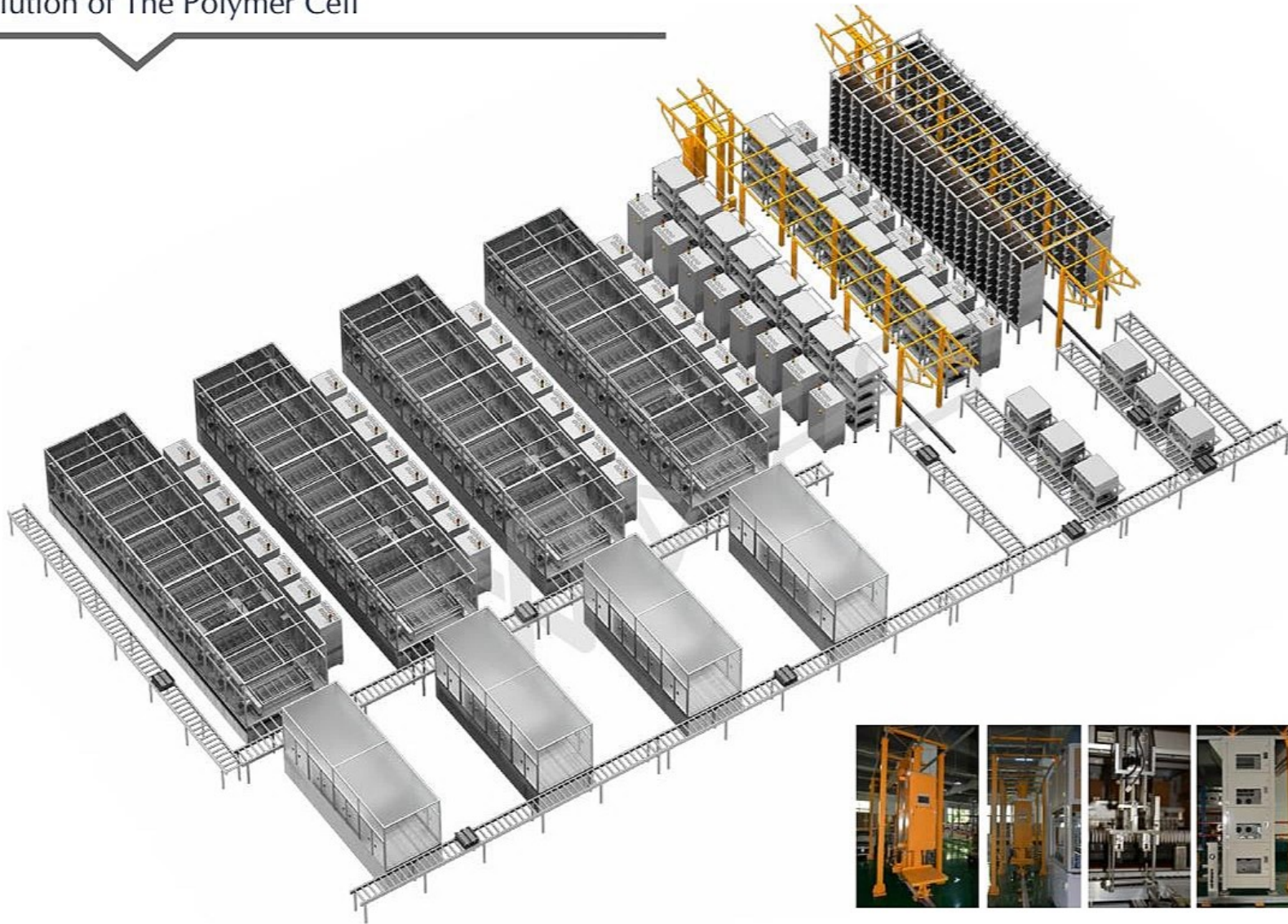
Greenhouse Gas Equivalencies Calculator: <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>



# Solution of The Prismatic Cell



## Solution of The Polymer Cell





## Accessories



## Products Sheet

		≤18KW	≤18KW	≤10KW	≤225KW
Category	Application and specs	BTS 4000	BTS 8000	BTS 9000	IGBT 7000
Formation and Grading	Cell	✓			
	Super Capacitor	✓			
Capacity、Power、Energy、SOC Testing、Cycle	Battery(cell、 module、 pack)	✓	✓	✓	✓
	Super Capacitor	✓	✓	✓	✓
	BMS CAN bus Supported	✓	✓	✓	
	UPS	✓	✓	✓	
Simulation	Battery(cell、 module、 pack)		✓	✓	
	Super Capacitor		✓	✓	
	Power Supply		✓	✓	
DCIR	Battery(cell、 module、 pack)	✓	✓	✓	
EV/HEV Testing	Battery、 Super Capacitor	✓	✓	✓	✓
	Production Testing	✓	✓	✓	✓
Pulse and HPPC Testing	Battery(cell、 module、 pack)	✓	✓	✓	
	Super Capacitor	✓	✓	✓	
Sampling Rate(Max)	1Hz				✓
	10Hz	✓			✓
	1000Hz			✓	
Rising Time (10%~90% Load)	100μs			✓	
	20ms	✓	✓		
	100ms				✓
	1s				
Voltage Range	5V	✓	✓	✓	
	10V/20V	✓	✓	✓	
	48V/60V/110V	✓	✓	✓	
	200V/500V/800V				✓
Current Range	160μA/1mA/50mA/3A/6A	✓		✓	
	10A/20A/50A/100A/200A	✓	✓	✓	
	300A/500A/1000A	✓	✓	✓	✓
	3000A	✓			
Number of Channels	1CH/2CH/4CH	✓	✓	✓	✓
	8CH/16CH/32CH	✓		✓	
	64CH/80CH/128CH	✓			
	256CH/512CH				
Technology	THY				
	IGBT	✓			✓

# NEWARE

One of the best battery testing system researcher and maker from China.



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