



Company Profile



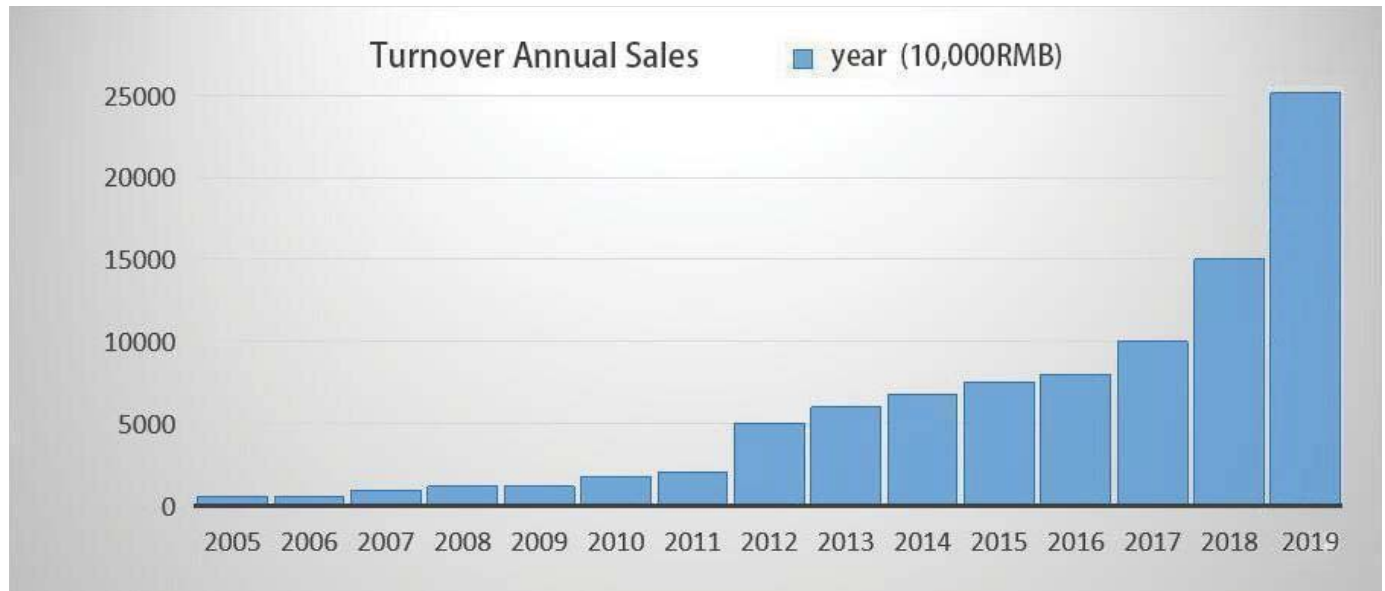
▶ YZPST Super Capacitor Factory Brief

The Factory is located in Liaoning Province, and is a professional manufacturer of super capacitors in China.

- She is one of the earliest companies in China to develop super capacitors.
- She is a national high-tech enterprise.
- She twice assumed the 863 project of the Ministry of Science and Technology.
- The company is the main drafting unit of the National Energy Administration's "Technical Standard for Super capacitors for Electric Energy Metering Equipment" .
- She is one of the founding members of the China Super capacitor Industry Alliance and is the first group of vice presidents.
- She is the domestic small and medium-sized capacitor, the highest output, the most complete model, the largest manufacturer.



► Factory size and Annual sales



	Year 1999	Year 2018	Year 2020
Factory area	500m ²	15000m ²	30000m ²
Number of employees	40 People	600 People	800 People

► Team composition



- Core technicians have 20 years of experience in supercapacitor development
- 11 senior engineers, 3 doctors, 19 graduate students
- 85 technical personnel of various degrees

Research direction

- | | |
|----------------------------|-------------------------------------|
| ■ Polar film development | ■ Manufacturing process development |
| ■ Electrolyte development | ■ Special equipment development |
| ■ Product structure design | ■ Module integration R&D |

► Honor

- Obtained the National Torch Program Industrialization Demonstration Project
- Three times won the third prize of Liaoning Province Science and Technology Progress
- Has been rated as provincial and municipal scientific and technological research results for many times.

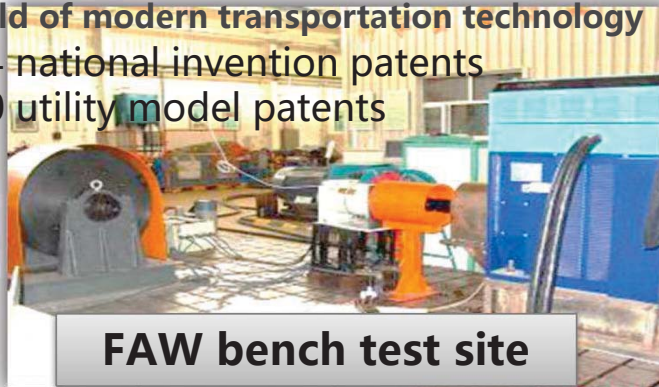
► Honor



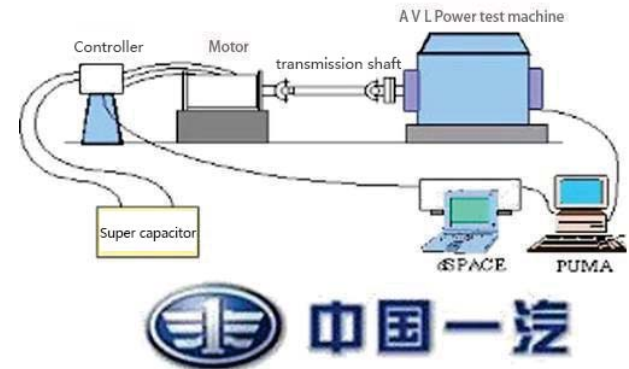
The company twice undertakes the National 863 Program Electric Vehicle Project

The 15th "863" plan major special project — Jiefang brand hybrid city bus super capacitor

The 12th Five-Year Plan of the "863" Program — R&D of super capacitor systems in the field of modern transportation technology
14 national invention patents
10 utility model patents



FAW bench test site



► Cooperative unit



CHINESE
ACADEMY
OF
SCIENCES



BEIJING UNIVERSITY
OF SCIENCE AND
TECHNOLOGY

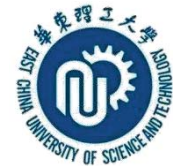
YZPST®



CENTRAL SOUTH
UNIVERSITY



BO HAI
UNIVERSITY



EAST CHINA
UNIVERSITY OF
SCIENCE AND
TECHNOLOGY



BEIJING
NONFERROUS
METALS
RESEARCH
INSTITUTE

► R&D equipment

真空混合机



用途：电极浆料混合

数显式粘度计



用途：浆料粘度测试

数字式四探针测试仪



用途：测试电极表面电阻

正反透射金相显微镜



用途：观察试样表面状态

涂布机



用途：电极片涂布

电子剥离试验机



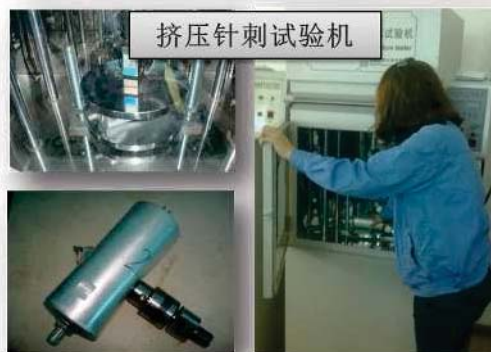
用途：电极片涂层剥离强度测试

电容测试系统

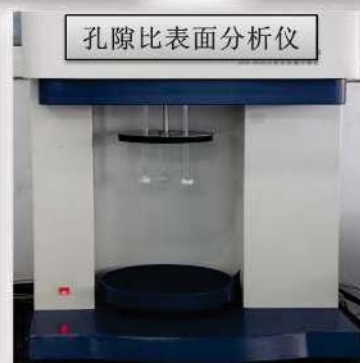
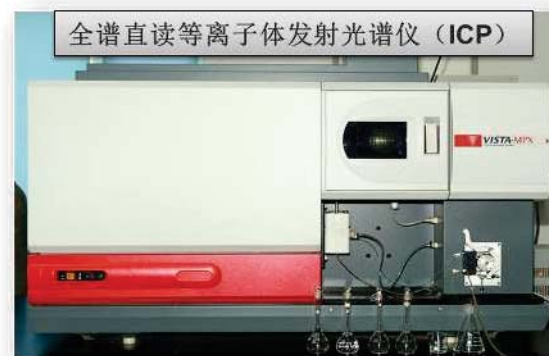


用途：测试电容器样品容量等

► R&D equipment



► R&D equipment



► Product Description

Coin Type Product Series

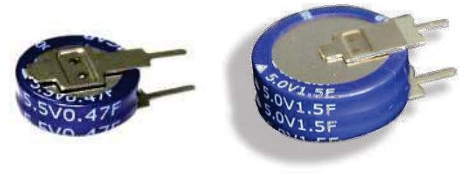
Coin Type Product Series

Use temperature range $-25^{\circ}\text{C} \sim 70^{\circ}\text{C}$, small volume, excellent voltage retention characteristics. Suitable for intelligent instrumentation.



Coin Type HT Product Series

The temperature range is $-25^{\circ}\text{C} \sim 85^{\circ}\text{C}$, excellent voltage retention characteristics, suitable for intelligent instrumentation.



► Product Description

Winding Product Series

Winding Product Series

SE/HE type product uses a temperature range of $-25^{\circ}\text{C} \sim 70^{\circ}\text{C}$ low leakage, suitable for long-term continuous discharge of small current. SP/HP/LR type products use a temperature range of $-40^{\circ}\text{C} \sim 70^{\circ}\text{C}$ low internal resistance, providing instantaneous high current output.

Winding HT Product Seires

The high temperature series products are used in the temperature range of $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$, suitable for long-term stable operation in special high temperature environment.

Winding 3V Product Series

The 3V series has a temperature range of -40 to $+65^{\circ}\text{C}$ and is suitable for long-term stable operation in high pressure environments.



► Product Description

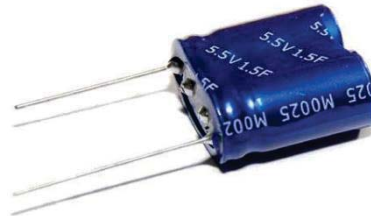
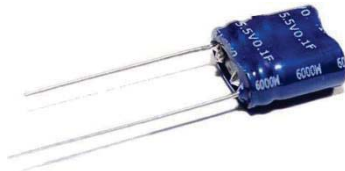
Combined Product seires

Combined Seires

SP type products use temperature range -40°C ~ 85°C ,

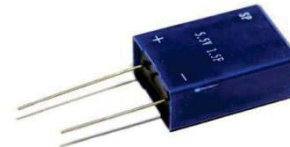
SE type products use temperature range -25°C ~ 70°C ,

The two types of combined products have high pressure resistance and are suitable for discharge in a few milliamperes (mA) and several amperes (A).



Fully sealed product series

The fully sealed product has excellent moisture resistance. After high temperature and salt spray test, the capacitor can provide better support and reliable guarantee for use under high humidity conditions such as water meter, and better meet the water meter field and related high humidity. Demand occasion



► Product Description

Module product series

Super capacitor energy storage module with protection circuit, good stability and high conversion efficiency. The voltage and capacity of the super capacitor are improved by series and parallel connection, and it has a good application prospect in the automotive field and the energy storage field.



Other types of products

- 3000F super capacitor. The shape is a cylindrical product with two ends, which has low internal resistance and is suitable for high current operation.
- 18650 type super capacitor. The same shape as the 18650 battery, the temperature range of $-40^{\circ}\text{C} \sim 70^{\circ}\text{C}$, low internal resistance characteristics, suitable for high current operation.





Quality Control





Introduction to company quality management

***We are the
industry leader***

YZPST is "credit, contract, quality, and efficiency"

for the purpose. YZPST Company takes the general manager as the quality first responsible person. The company has a quality center, which is fully presided over by the quality director. It has three functional departments: quality management department, testing center and physical and chemical room. According to the company's quality policy and quality objectives, the company's advanced R&D quality planning, incoming material management and control, process control statistics, product performance durability, shipment inspection, and after-sales service are all managed according to the ISO system.



► Quality system

Passed the ISO9001:2008 / ISO14001:2004 system audit certification, in 2014 passed the ISO/TS16949:2009 audit certification and SGS company audit of the EU ROHS, REACH certification, and strictly in accordance with the quality system management implementation. In 2014, the company passed the audit of "Samsung Electronics" (SAMSUNG), the largest electronics industry company in Korea. It also passed "ALSTOM" , "Sagemcom" and "Zhuhai Canon" (CANON), "Nanrui Group" , "Xuji Group" , "Weisheng Group" and other well-known companies have been audited and certified and become qualified suppliers.

Quality policy:

Quality is life, innovation is the soul, a harmonious working atmosphere, guaranteeing the provision of quality products, continuous improvement, and customer satisfaction.



Production capacity



► Production management and supply capacity

Production capacity

Product Series	Daily production capacity	Monthly production capacity	Annual production capacity
Winding product	About 600 Thousand	About 15.6 million	About 180 million
Coin type Product	About 200 Thousand	About 5.2 million	About 62.4 million



► Main production equipment in each workshop

Electrode sheet production line

Vacuum mixer - Electrode slurry production



Vertical film rolling machine - electrode sheet production



Continuous coating machine - electrode sheet production



Slitting machine - electrode sheet production



► Main production equipment in each workshop

Winding product line

Fully automatic winding machine - Rolling of super capacitor core



Plug-in machine - installation of rubber plug on the core



Glove box - impregnated and packaged after removal of the core



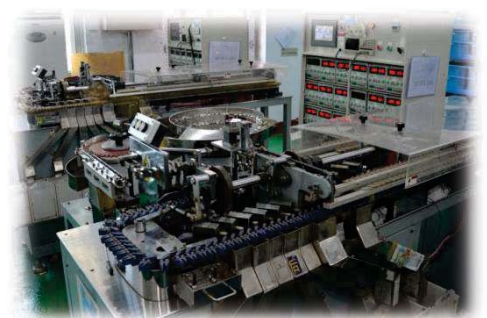
Automatic casing machine - set of heat shrinkable tube



► Main production equipment in each workshop

Product test line and module product line

Fully automatic test sorter - product performance screening



Product Testing - Monolithic, Modular
Product Testing



Product Assembly - Module
Product Soldering



Product Assembly - Module
Product Assembly



► Main production equipment in each workshop

Coin type production line

Monolithic package



Set of thermoplastic tubes



Coin type product laser spot welding





Market service



► Market service capability

1. Market service area: :

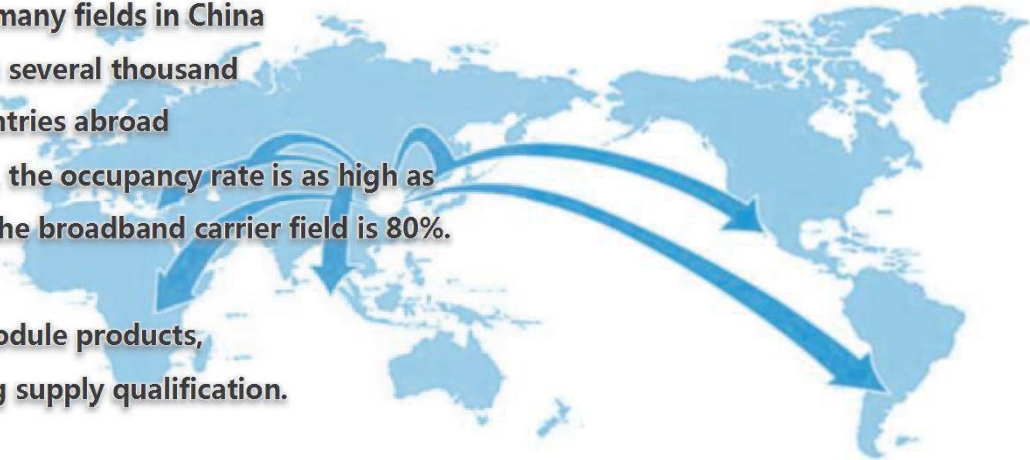
- Product application covers many fields in China
- The number of customers is several thousand
- Covering more than 50 countries abroad
- In the field of smart meters, the occupancy rate is as high as 80%. The market share for the broadband carrier field is 80%.

2. Complete product range :

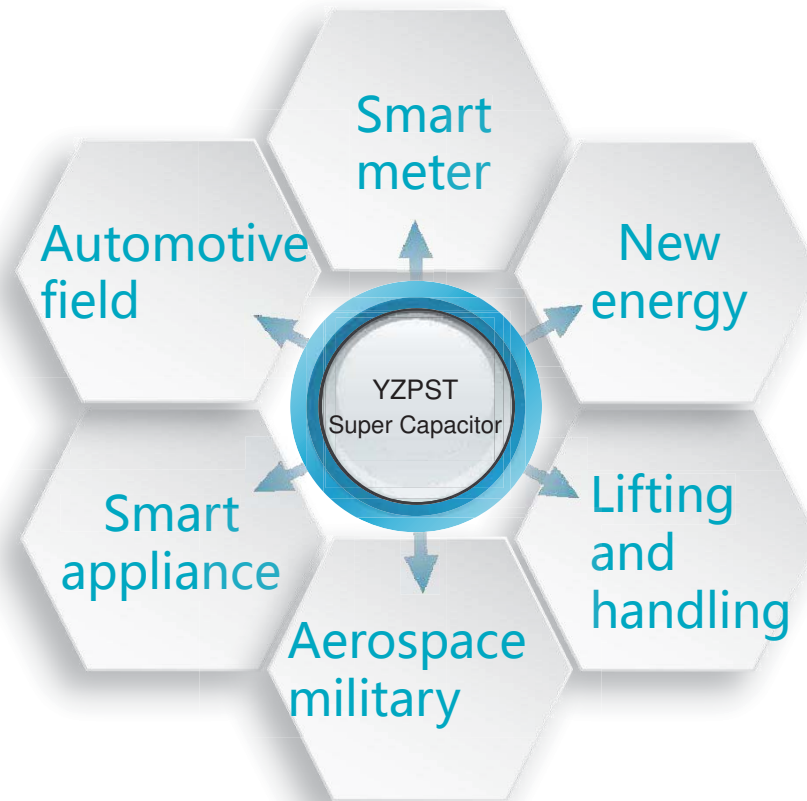
- From 0.47F to 3000F and module products,
- And have the corresponding supply qualification.

3. Customer service :

- Professional technical engineer responsible for selection and design



► Application field



► Application field

Smart Meter



Electric Meter



Water Meter,



Gas Meter

- Long life, charging and discharging more than 500,000 times, Charge and discharge 20 times a day for 60 years.

- It can be charged with a large current, and the charging and discharging time is short. The charging circuit is simple and has no memory effect.

► Application field

Automotive field



«Low temperature start

The battery does not work in cold areas. Super capacitor temperature lower limit of -40°C , can release large current, complete low temperature start, extend battery life



« Car electronics

Super capacitors can be used as backup power for automotive electronics, or provide high power and high current for car audio to improve sound quality.

Hybrid pwer »

The stored energy is recovered by the super capacitor when braking or breaking, and the energy is released when the acceleration is started next time, providing power to the vehicle and saving fuel.



Electric bus »

As the main energy storage power source, super capacitor can complete the extremely fast charging when the vehicle is parked at the bus stop, achieving zero emission and no pollution.



► Application field

New energy generation



PV

As an energy storage device for photovoltaic power generation, super capacitors have the advantages of fast charging and discharging, long life cycle, no manual maintenance, and wide temperature range.

Wind power

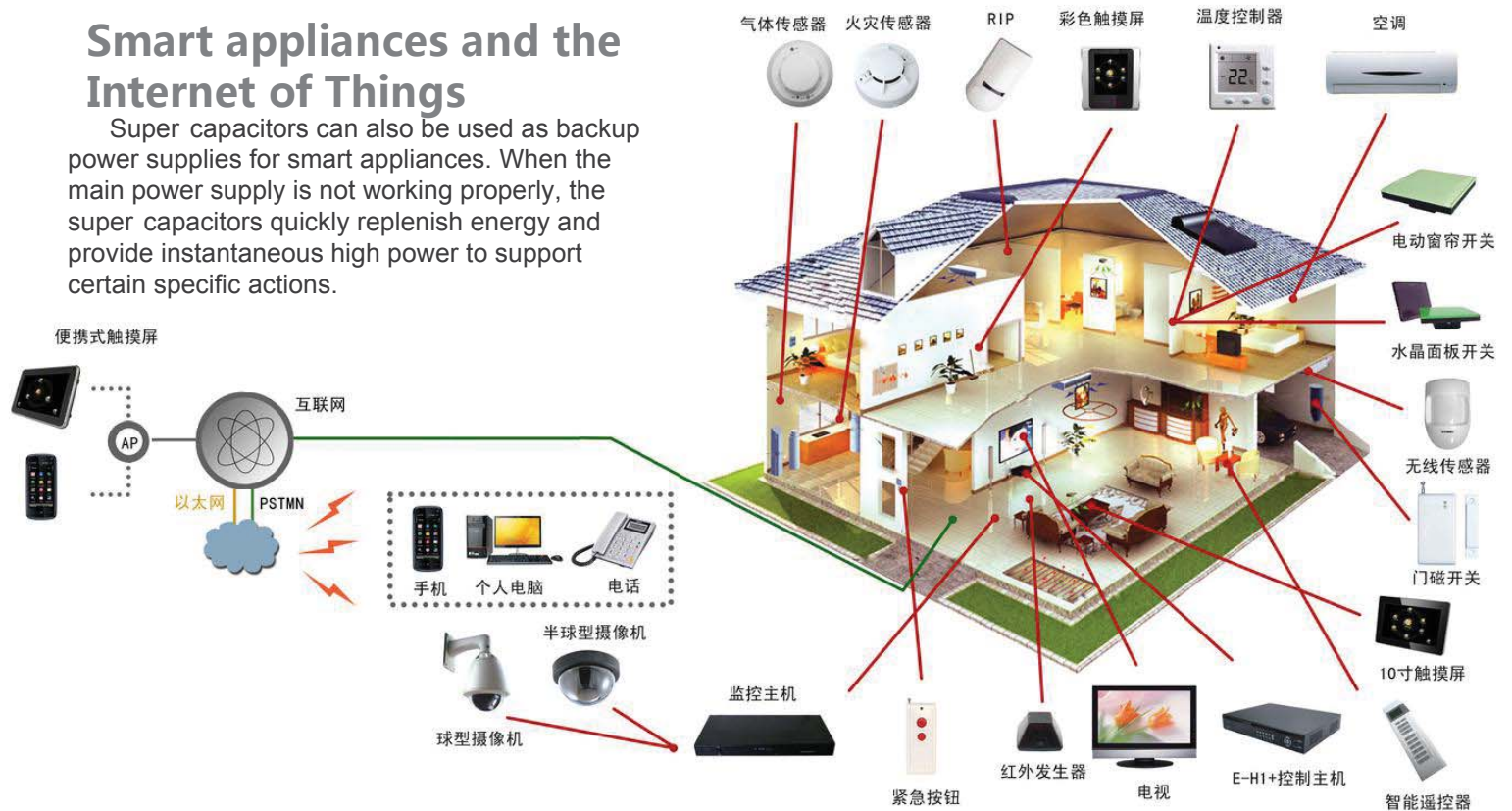
As an energy storage device for wind power generation, super capacitors can complete the energy buffering under the condition of uneven wind power to achieve stable energy storage. Super capacitors can also be used as a power source for fan pitch systems.



► Application field

Smart appliances and the Internet of Things

Super capacitors can also be used as backup power supplies for smart appliances. When the main power supply is not working properly, the super capacitors quickly replenish energy and provide instantaneous high power to support certain specific actions.



► Application field

Smart Appliances

Super capacitors play an important role in the communication module of smart home appliances



► Application field

Intelligent electronic door lock

Intelligent door lock refers to the lock that is more intelligent and simple in terms of user safety, identification and management on the basis of traditional mechanical lock. Use the latest technology, including remote access, biometrics, wireless and GPS. High-end electronic door locks have built-in super capacitor technology, which is supplemented by electricity. It is specially designed to handle large starting currents and can store power for a long time, up to 14 weeks.



► Application field

Lifting and handling



Port crane

The supercapacitor module is installed, which can quickly discharge large currents when starting, and drive the motor to lift the cargo; when the energy is decreased, the supercapacitor can be quickly absorbed. It not only plays the role of energy saving and environmental protection, but also reduces the impact of large port cranes on grid voltage.



New forklift

The use of supercapacitors as the power source for the forklift's ascending/descending drive mechanism enables the transmission and reception of peak power and current for energy recovery, which greatly saves fuel.



AGV automatic truck

AGV is a new type of unmanned transport vehicle used in manufacturing, logistics and other industries. As a power source, the super capacitor can be installed on the pick-up/unloading station, and the charging is completed at the same time as the loading and unloading operation, which greatly improves the working efficiency; and can withstand frequent high-current charging and discharging, and has a long service life.

► Application field

Aerospace military



重型车辆启动：启动速度快可靠性高



新式地面战车：混合动力续航时间长



轨道式电磁炮：瞬间发射破坏能力强



航空母舰：电磁弹射器高功率大推力



电磁装甲：电能脉冲电磁力场防护罩



战略激光武器：高精度威慑打击力量

YZPST

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Thanks for watching



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