



铨创科技
IRCREA

SHENZHEN IRETRON TECHNOLOGY CO., LTD

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Company Profile

Basic Information

- ∅ Chinese name: 深圳铨创科技有限公司
- ∅ English name: SHENZHEN IRETRON TECHNOLOGY CO., LTD.
- ∅ Founded on: April 2021 (formerly Shenzhen YuKaiyuan Electronic Materials Co., LTD., founded in 2016)
- ∅ Industry field: research and development, production, sales and technical services of electrochemical materials and equipment
- ∅ Headquarters address: China Merchants Science and Technology Park, Guangming District, Shenzhen City
- ∅ Production capacity: titanium anode 20,000 square meters / year, electrochemical materials 2,000 tons / year, electrolytic equipment 1,000 sets (sets) / year

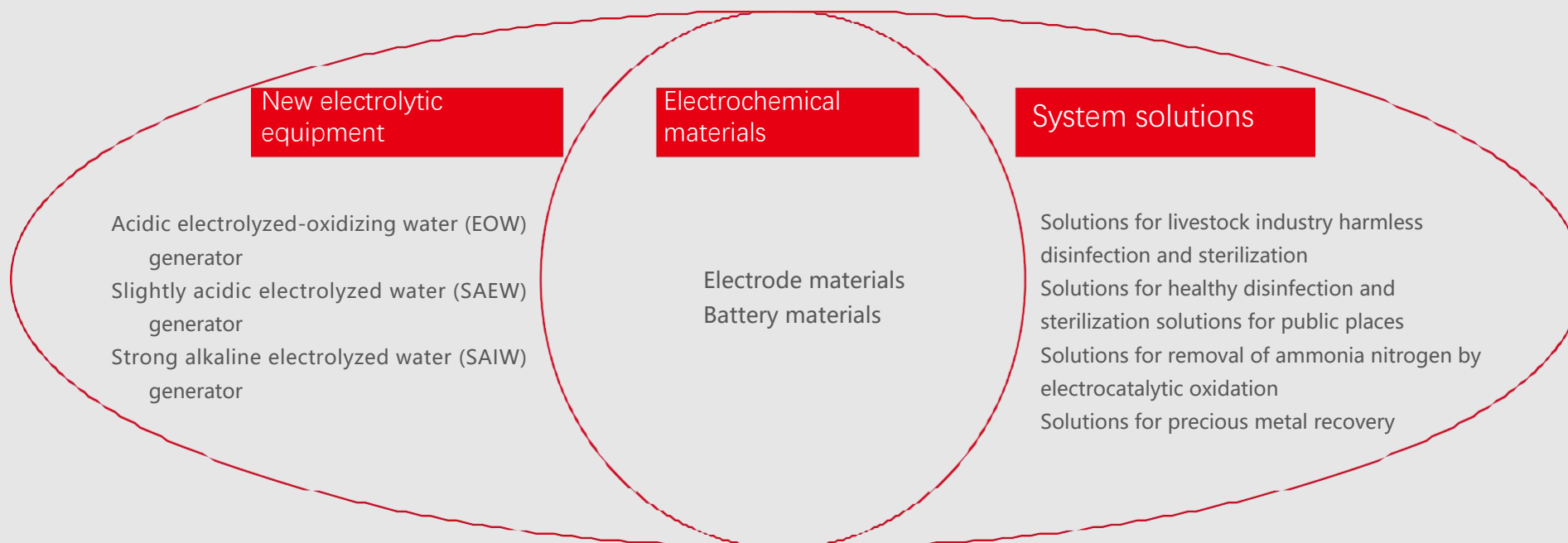


Development History

- 2022 The second production base was established in Jiangmen;
- 2021 Shenzhen Iretron Technology Co., Ltd. was founded, the new headquarter and R&D center were put into use, the high performance anode for aluminum foil formation was introduced, and the high performance anode used for electrolytic copper foil was put into mass production;
- 2020 Chlorine/ozone evolution high performance anodes used for electrolysis of water were introduced, and the company established cooperative relations with Xiaomi, Midea, Haier, Airmate, JOMOO and etc.;
- 2020 The high performance anode used for electrolytic copper foil was introduced; the high performance anode for PCB plating was put into mass production, and an excellent plating effect was achieved in Taiwan-funded factories. Also, the brightening agent were comparable to M product of the competitor in dosage and life.
- 2018 The high performance anode (VCP lines/horizontal line) used for PCB plating and high performance anode used for water treatment were introduced;
- 2017 The high performance anode used for copper recovery from copper-containing waste liquid came on the scene.
- 2016 Shenzhen Yukaiyuan Electronic Materials Co., Ltd. was founded for manufacturing insoluble anodes;
- 2010 The company cooperated with professors from Central South University and Xiangtan University for the research and development of insoluble anodes;
- 2008 The company used PCB plating brightening agent with insoluble anode for the client, and began to study the performance of the insoluble anode;
- 2005 The company cooperated with professors from Xiangtan University for the research and development of PCB plating brightening agent.

Main Business

The company has always adhered to the electrochemical materials as the core of relevant diversified development strategy, with business covering electrochemical materials, new electrolytic equipment and system solutions. Relevant products are widely used in PCB copper plating, electrolytic copper foil, aluminum foil formation, metal extraction, metal plating, health care electrical appliance, public disinfection and sterilization, animal husbandry disinfection and sterilization, water treatment, ship corrosion protection and etc.



Corporate Culture

Objective

Become the world's leading provider of electrochemical products and system solutions

Vision

Drive a better life with technological products

Quality Guidelines

Customer oriented, integrity-based, and quality first



Core values

People-oriented, realistic, innovative, and perfect

Philosophy

Manufacturing the first-class products
Creating well-known brands

Aims

Creating values for customers
Creating opportunities for employees
Creating benefits for the company
Creating wealth for the society

Part II

R&D Force

First-class R & D team

R&D Team



**High quality R & D team,
multidisciplinary professional structure,
and abundant industry experience.**

Percentage of R&D investment in
operation revenue

>15%

R & D personnel in proportion to the
total number of employees

>30%

Chief Technology Officer

Xie Yuanshou, Professor of Xiangtan University and expert in the field of electrochemistry, with more than 50 years of teaching and scientific research experience in the field of electrochemistry, 8 monographs and more than 60 papers published, and more than 40 patents applied

Key Technical Staff

He Qiqun, Master of Xiangtan University, with 15 years of experience in electrochemical industry, 5 papers published, and 13 patents applied Bachelor of Xiangtan University, with 20 years of experience in electroplating industry, and 15 patents applied

Senior Technical Advisor

Dr. Xie Helou, Professor of Xiangtan University, doctoral supervisor. He has been engaged in the research of functional optoelectronic materials for a long time, presided over 3 NNSF projects, and won the second prize for natural science of Hunan Province, published SCI journal citation reports and more than 70 papers.

R&D Platform

Electrode Materials Research
and Development Center

Health Electrical Appliance
Research and Development
Center

Four major
innovation centers

Battery Materials Research
and Development Center

New Electrolytic Equipment Engineering
and Technology Research Center

Instruments



R&D Cooperation

The company has successively established cooperative relations with famous universities like Tsinghua University, Xiamen University, and Central South University in research of basic materials, and with intelligent electrical appliance production and design enterprises such as Xiaomi, Midea, Haier, JOMOO, Airmate, and Yinbaoshan in product application and development.

Research of basic materials



Product application and development



R&D Achievements

No.	Type of patent	Name of patent
1	Patent for invention	Ready-to-use acidic EOW device and acidic EOW preparation method
2	Patent for invention	Electrolytic equipment, wastewater treatment system and wastewater treatment method
3	New utility design	A spiral electrolyzed water generator
4	New utility design	An electrode structure for water electrolyzer
5	New utility design	An electrode for wastewater treatment
6	New utility design	A double helix electrode electrolyzer
7	New utility design	A miniature high efficiency electrode structure
8	New utility design	An acidic EOW generator
9	New utility design	A high efficiency electrolytic electrode
10	New utility design	A water conveyance structure for acidic EOW generator
11	New utility design	An electrolyzed water device for thorough purification
12	New utility design	A well-sealed wastewater electrode
13	New utility design	An efficient and stable acidic EOW generator



Part III

Main Products

A variety of customized
anode products

High performance anode- for PCB plating

Appearance (customized product)



Performance

The coating layer of anode is firm and stable, with high corrosion resistance and long service life

Effectively reduce the voltage, and the energy-saving effect is obvious

Ultra-low electroplating additive consumption, reduce production cost

The u-current density is evenly distributed and has higher through-hole /via filling yield

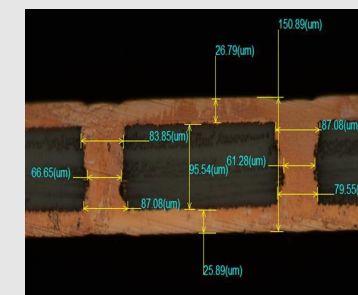
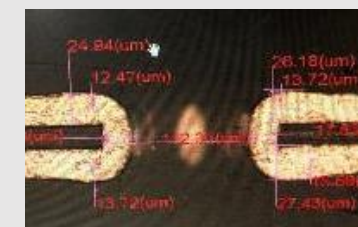
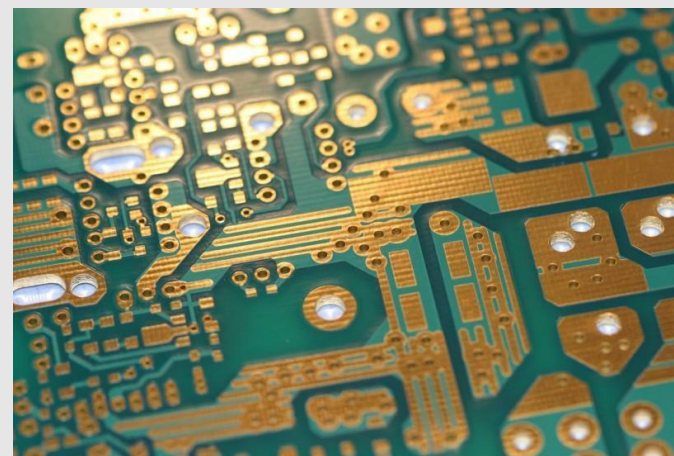
Scope of application

VCP/Horizontal line copper plating

Through hole/via filling/pulse copper plating for Flex PCB & PCB

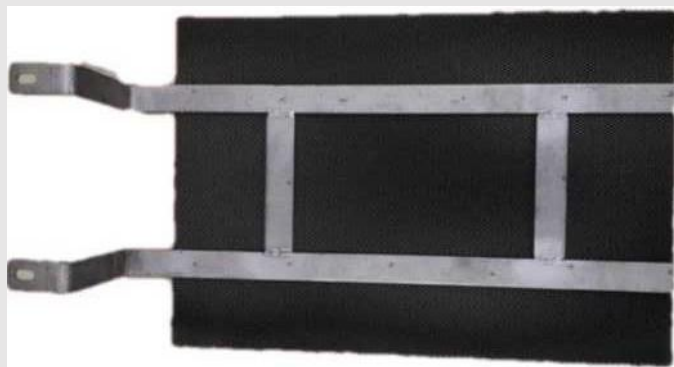
Semiconductor substrate electroplating

Scenarios for application



High performance anode for VCP via filling /Through hole electroplating

Appearance (customized product)



Features

Low additive consumption

High through-hole capability

Evenly distributed current density

High current efficiency

Application conditions

Electrolyte	$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ H_2SO_4 Additives(carriers/levelers/brighteners)
Temperature	20°C-45°C
Current density	100-3000A/m ² DC
Type of anode	Iridium tantalum oxide coated titanium anode
Service life of anode	More than two years (or as customized according to the customer's requirements)
Characteristics	<ul style="list-style-type: none"> •The coating is designed specially for DC electroplating condition of PCB •The additive consumption is stable, and the service life of anode is long
Products & Services	Manufacturing of new anodes and recoating of used anodes

High performance anode – for (horizontal and vertical) pulse electroplating

Appearance (customized product)



Features

High through-hole capability

Excellent uniformity for copper plating

High cost performance

Application conditions

Copper ion source	Horizontal pulse: Oxygen-free copper Oxygen evolution pulse: Copper oxide powder
Electrolyte	Horizontal pulse: $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ 、 H_2SO_4 、 $\text{Fe}^{3+}\text{Fe}^{2+}$ Additives Oxygen evolution pulse: $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ 、 H_2SO_4 、 Additives
Temperature	20°C-50°C
Current density	Normally 200-800A/m ² for forward pulse, 600-2400A/m ² for reverse pulse
Pulse frequency	Adjustable dependent on actual working conditions
Type of anode	Iretron special coating coated titanium anode
Service life of anode	More than one year (or as customized)

High performance anode—for gold plating

Appearance (customized product)



Features

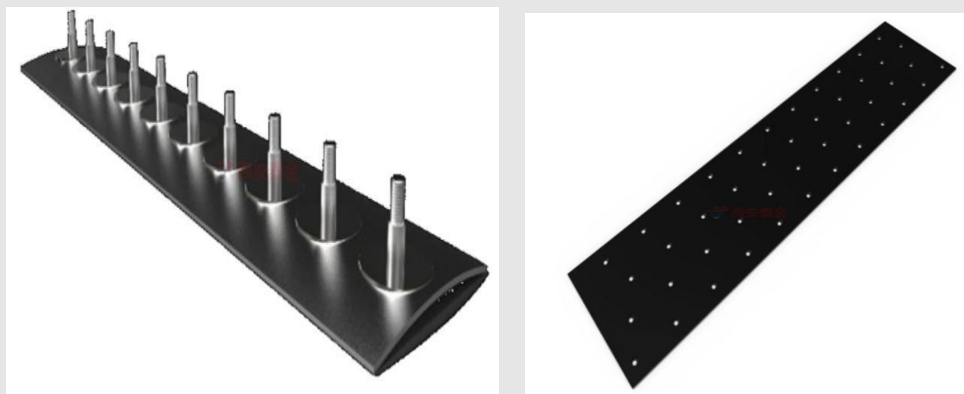
- Long service life and stable performance
- Low cell voltage and uniform current distribution
- Low additive consumption
- Low comprehensive cost and high cost performance

Application conditions

Electrolyte	Gloss agent & Other additives Au: 4-10g/l CN: low concentration pH:4-5
Temperature	40°C-60°C
Current density	0.1-1.0ASD, average 0.2ASD
Type of anode	<ul style="list-style-type: none"> •Mixed precious metal oxide coated titanium anode •Electroplated platinum titanium anode
Characteristics	<ul style="list-style-type: none"> •Suitable for PCB gold plating process •Platinum/precious metal oxide composite for the electroplated platinum anode •Customizable electroplated platinum titanium anode or mixed precious metal iridium oxide coated titanium anode
Features & Services	Manufacturing of new anodes and re-coating/re-plating of old anodes

High performance anode—~~for~~ electrolytic copper foil

Appearance (customized product)



Scope of application

Copper foil generation (4-35 microns)

Post-treatment of copper foil

Scenarios for application

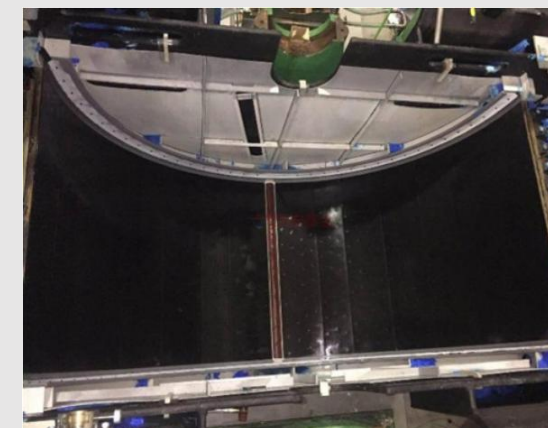
Features

Stable electrode spacing, excellent activity, and long service life

High current density, uniform current distribution, and high production efficiency

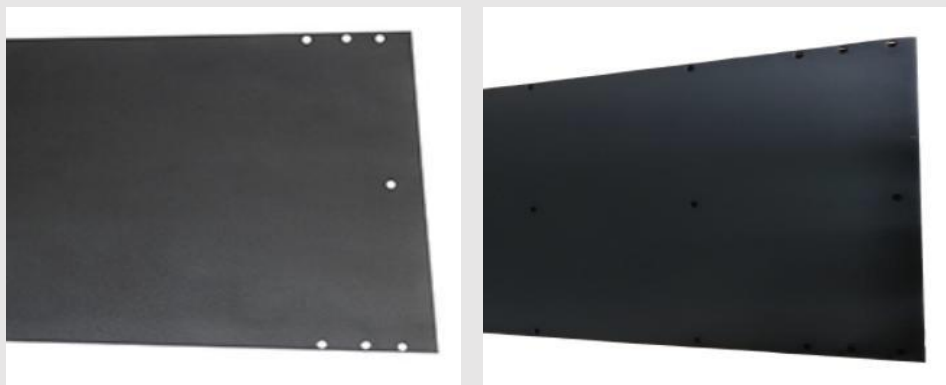
Low operating voltage and low energy consumption

Smart design and easy installation



High performance anode—for aluminum foil formation

Appearance (customized product)



Scope of application

High/medium/low voltage aluminum foil formation
Ammonium citrate/ammonium adipate/boric acid system

Features

- Good corrosion resistance and long service life
- High temperature/current shock resistance and high current efficiency
- Low operating voltage and low energy consumption
- Light in weight electrodes, easy to install

Scenarios for application



High performance anode—~~for~~ metal extraction

Appearance (customized product)



Features

- Stable and uniform coating and long service life
- High circuit density and high extraction efficiency
- Low operating voltage and low energy consumption
- High corrosion resistance and low requirement for impurities in the solution

Scope of application

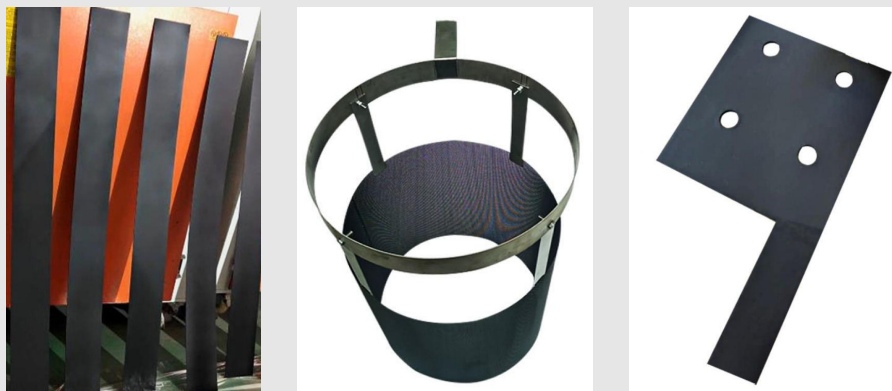
- Electrolytic production of nickel and cobalt
- Recovery of copper from etched liquid
- Recovery of precious metals from industrial wastewater
- Refinement of precious metals (gold, silver, rhodium and palladium)

Scenarios for application



High performance anode—for metal plating

Appearance (customized product)



Features

- Stable and uniform coating and long service life
- Resistance to high current and high plating efficiency
- Low operating voltage and low energy consumption
- No contamination of plating solution, thus realizing clean production of electroplating industry

Scope of application

- Precious metal plating (gold, silver, rhodium and palladium)
- Hexavalent/Trivalent chromium electroplating
- Tin/zinc plating of steel plate
- Electroplating of other metals like copper and nickel

Scenarios for application



High performance anode—for water treatment

Appearance (customized product)



Features

- Stable ,uniform coating layer with long service life
- High electrocatalytic activity and high electrolytic efficiency
- High corrosion resistance and wide range of application

Scope of application

- Circulating water electrolysis for descaling
- Electrocatalytic oxidation for lowering industrial wastewater COD/ammonia nitrogen
- High purity water preparation
- Desalination and desalting of sea water

Scenarios for application



High performance anode—for water electrolysis

Appearance (customized product)



Features

Uniform and stable coating layer , long service life

High electrocatalytic activity and high electrolysis efficiency

No metal ion precipitation, no corrosion, and high safety and reliability

Flexible electrode shapes adapted to different product appearances

Scope of application

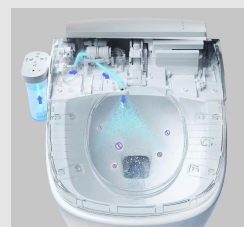
Preparation of EOW water/ozone water/hydrogen-rich water/hydroxyl water

Disinfection and sterilization of drinking water/pool water/fruits and vegetables/medical products

Disinfection and sterilization of restaurants/hotels/public places/farms

Disinfection and sterilization of cosmetic instrument / washing machine / dishwasher / smart toilet / sweeper

Scenarios for application



Electrolytic equipment for generation of acidic oxidation potential water (EOW)

Performance characteristics

The water generated by acidic oxidation potential water (EOW) equipment has strong acidity and high oxidation potential

Chemical reduction potential can quickly kill viruses, bacteria, and microorganisms in the range of contact, with non-toxic, no irritation, no damage to skin and mucous membrane, quickly reduction to water without residue after use. Its sterilization rate is faster than slightly acidic hypochlorite water, but the sterilization duration is short and difficult to preserve, and generally can only be used for use.

Application area

Medical equipment washing, disinfection and sterilization

The wound wound was rinsed and sterilized

Skin sterilization, anti-inflammatory, anti-itching

Food sterilization and preservation

Product appearance (non-standard products, customized on-demand)



Electrolytic equipment for generation of micro-acid electrolytic water generation

Performance characteristics

The water generated by microacidic electrolysis water equipment has weak acid and strong oxidation, which can kill viruses, bacteria, and microorganisms in the contact range; use no irritating odor, non-toxic, environmentally friendly; its sterilization speed is slower than EOW, but easy to save; no corrosion to the equipment, long sterilization duration

Application area

Wash fruits and vegetables to remove agricultural residues, sterilization and preservation

Food factory raw materials, equipment cleaning and sterilization and preservation processing

Medical equipment disinfection and sterilization, oral cleaning and sterilization

Environmental humidification to prevent influenza, odor removal, mildew prevention

Product appearance (non-standard products, customized on-demand)



Novel electrolytic equipment for generation of weakly alkaline electrolytic water

Performance characteristics

The water generated by electrolytic equipment for generation of weakly alkaline electrolytic water is rich in hydrogen ;

To promote human and animal absorption, improve prevention capacity of disease

Improve the production of eggs and milk of farm animals ;

Improve plant resistance to diseases and insect pests.

Reduce the use of pesticides

Improve the soil condition.

Application area

Make hydrogen-rich water for drinking and cooking

Animal husbandry

Vegetable soilless cultivation;

Tea, coffee extraction

Acid soil restoration

Product appearance (non-standard products, customized on-demand)



Novel electrolytic equipment for generation of strong alkaline electrolytic water

Performance characteristics

Strong alkaline and high reduction potential, can effectively remove the oil and static electricity on the surface of object;;
No irritating to the skin, will not cause skin burns compared to the alkali water formed by caustic sodium;

Good industrial cleaning agent.

Application area

Beverage, food, winery and other enterprises pipeline cleaning

Industrial equipment to remove oil pollution, lubrication, rust prevention

Instead of trichloroethylene cleaning solution for product defat and waxing instead of chemical reagent for printing and dyeing industry and decoloring and coloring metal surface decontamination, glass surface dust removal and antistatic electricity

Product appearance (non-standard products, customized on-demand)



Part IV

Partners

Examples for PCB application

Shenzhen Chongda Multilayer Circuit Board Co., Ltd.

Dongguan Universal P.C.B.Equipment Co., Ltd.

Kunshan Dongwei Technology Co., Ltd.

Shennan Circuit Co., Ltd.

Kinwong Electronics Co., Ltd.

UNIMICRON TECHNOLOGY(Kunshan) Co., Ltd.

AKM(Suzhou) Flexible Circuit Board Co., Ltd.

Holitech Technology Co., Ltd.

AKM(Panyu) Electronic Industrial Co., Ltd.

Camelot Electronics Technology Co., Ltd.

Forewin Flex Corporation Limited

Examples for PCB application

Guangzhou Mingyi Electronic Machinery Co., Ltd.

Kunshan Botong Machinery Equipment Co., Ltd.

Nanya Electronic Materials (Kunshan) Co., Ltd.

Tripod Technology (Wuxi) Electronics Co., Ltd.

Zhuhai Zixiang Electronic Technology Co., Ltd.

Shenzhen Xinyu Tengyue Electronics Co., Ltd.

Kunshan Kunzhiyi Machinery Technology Co., Ltd.

Ji'an Jingsheng Machinery Co., Ltd.

Examples for electrolytic copper foil application

Guangdong Chaohua Technology Co., Ltd.

Huizhou United Copper Foils Co., Ltd.

Dongguan Huawei Copper Foil Technology Co., Ltd.

Meizhou Weilibang Electronic Technology Co., Ltd.

Ganzhou Yihao New Material Co., Ltd.

Jiangxi Xinwei Copper Foil Co., Ltd.

Fujian Qingjing Copper Foil Co., Ltd.

Jiangxi Xinborui Technology Co., Ltd.

Hunan Longzhi New Material Co., Ltd.

Nanya Electronic Materials (Kunshan) Co., Ltd.

Guangdong Yinghua Electronic Technology Co., Ltd.

Nuode Investment Co., Ltd.

Yunnan Huitong New Material Technology Co., Ltd.

Jiangxi Tongbo Technology Co., Ltd.

Tongling Huachuang New Material Co., Ltd.

Partners





铱创科技
IRCREA

IRETRON's Vision: Become the world's leading provider of electrochemical products and electrolytic system solutions.

THANKS