



ES-PRO Technology Company Introduction



思铂科技
ES-PRO TECHNOLOGY

ES-PRO TECHNOLOGY SMARTENING FUTURE

ES- PRO TECHNOLOGY PTE LTD

01

COMPANY PROFILE



Brand Portfolio



Our history

- ✧ **2007:ES-PRO Technology Pte Ltd**
was established in Singapore
- ✧ **2015: ES-PRO Machinery Equipment Co., Ltd**
was established in China
- ✧ **2017: ES PRO Equipment Sdn Bhd**
was established in Malaysia
- ✧ **2018: ES-PRO Technology Co., Ltd**
was established in China
- ✧ **2020: ES-PRO Automation Technology Co., Ltd**
was established in China
- ✧ **2023: ESPRO Technology Co., Ltd.**
was established in Viet Nam
- ✧ **2025: ES-PRO Intelligent Technology Co., Ltd**
was established in China

Factory Appearance



迎 门



大 厅



前 台



业务中心



会 客 室



会 议 室



技 术 部



研 发 部



车 间



仓 库



培 训 室



文 体 室



ERP Management Software Application

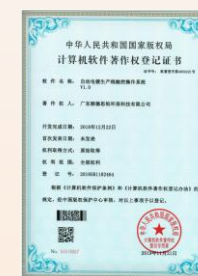


ISO 3 Standard Management System

High-Tech Enterprise



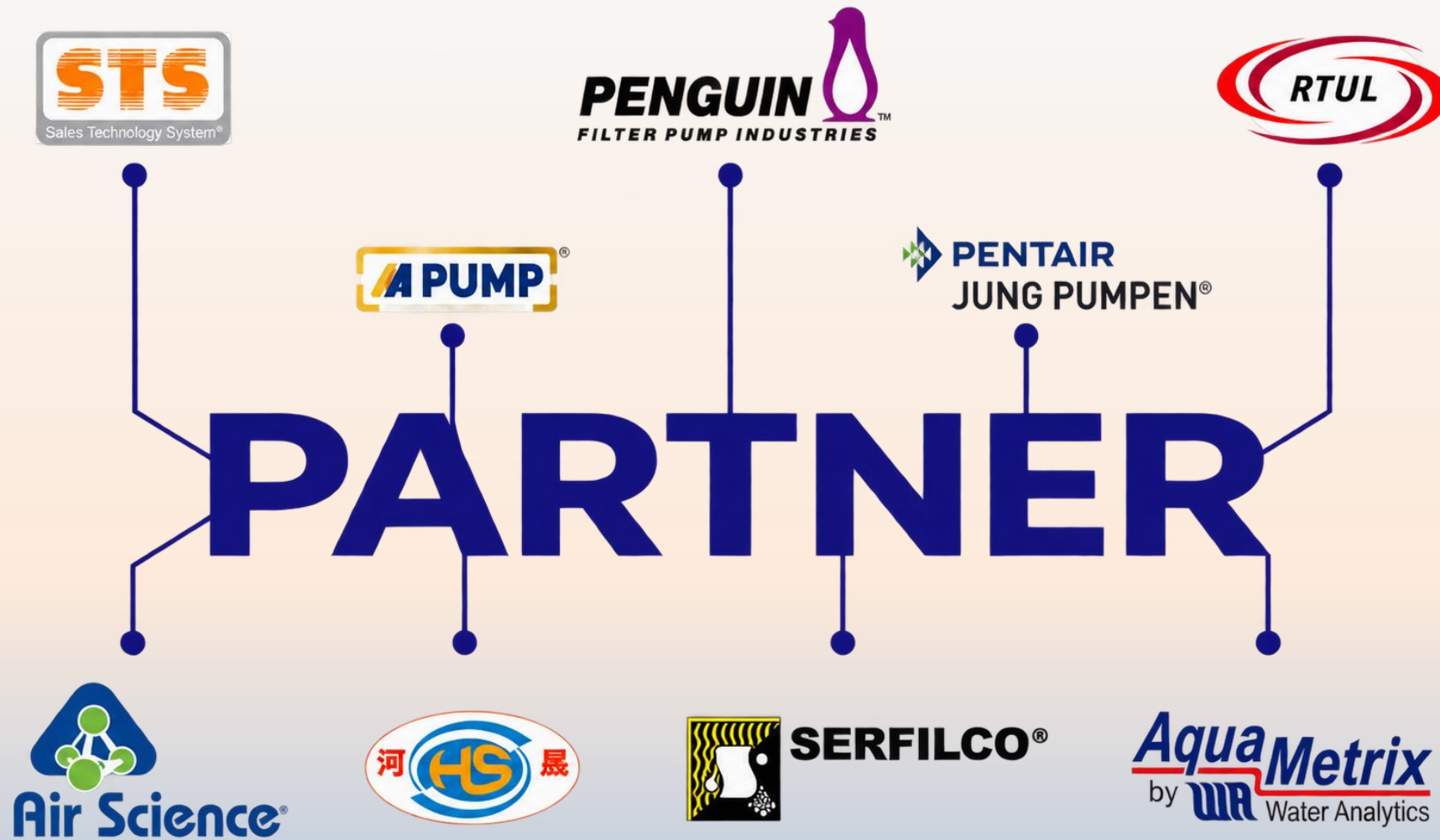
100+ Utility Patents, Invention Patents and Software Copyrights



Corporate Honors



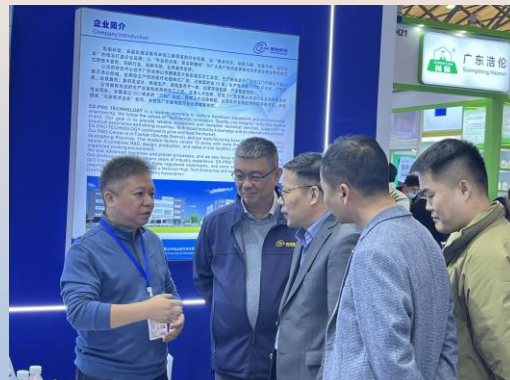
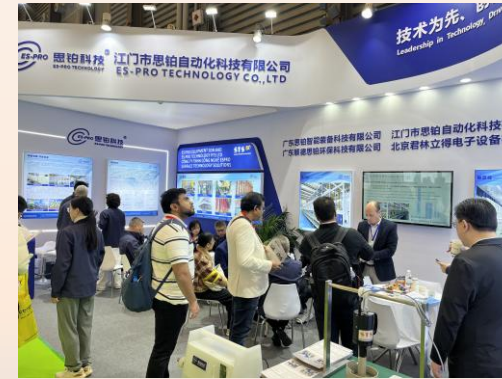
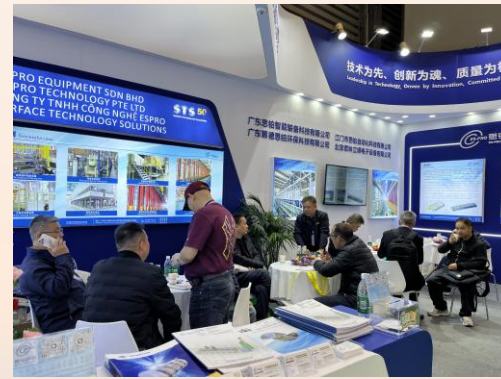
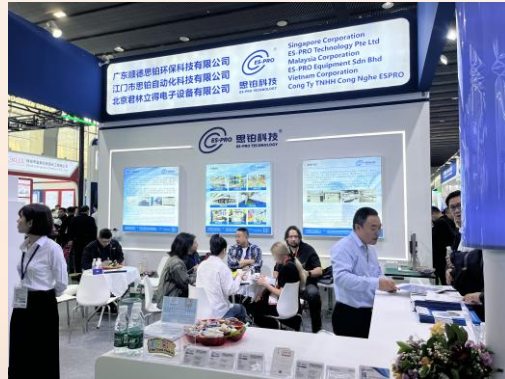
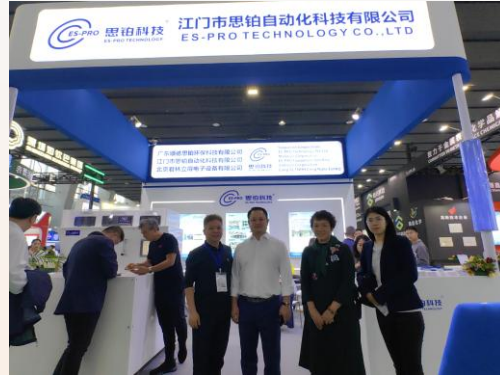
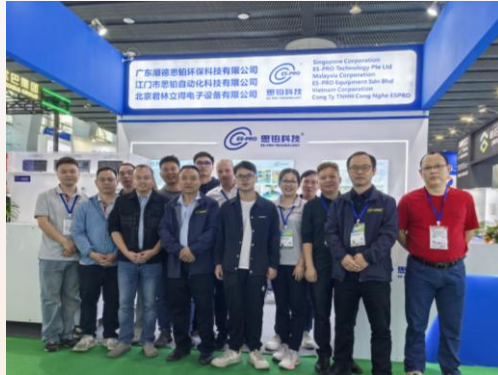
Cooperative Partners



Cooperative Partners



Exhibition Series Activities

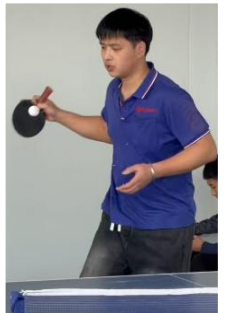


Corporate Culture



Enjoy your work

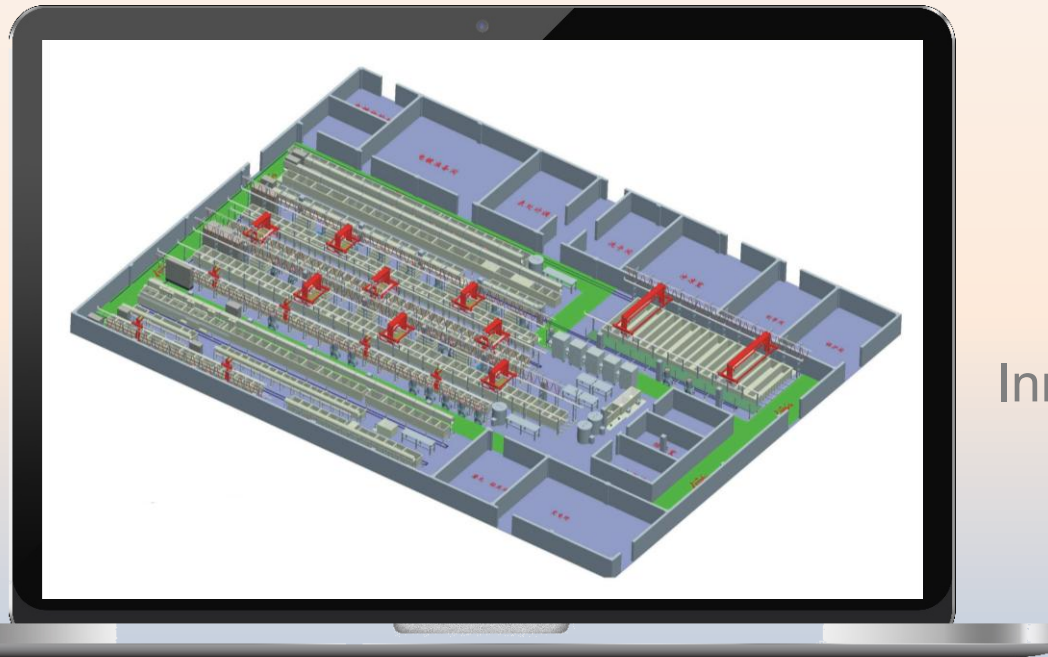
Enjoy your life



02

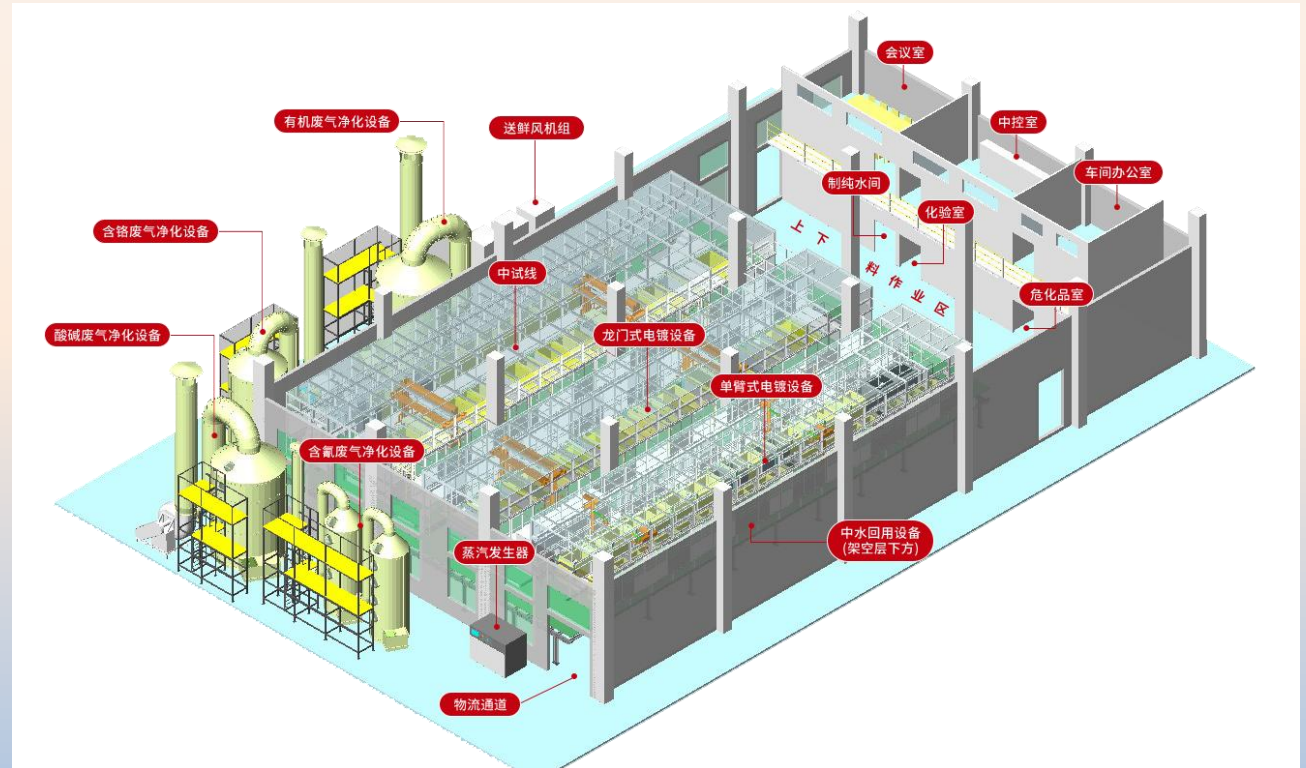
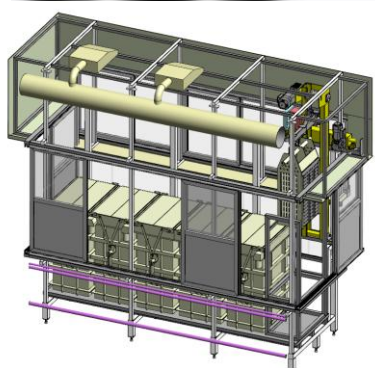
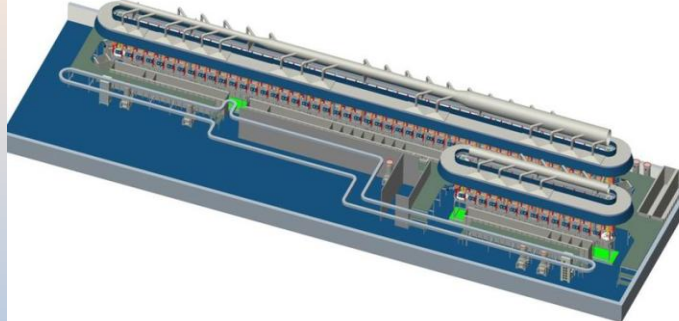
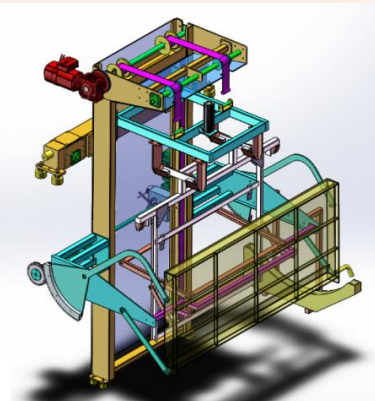
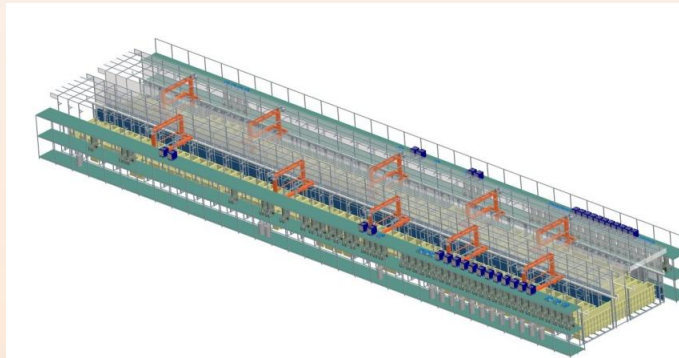
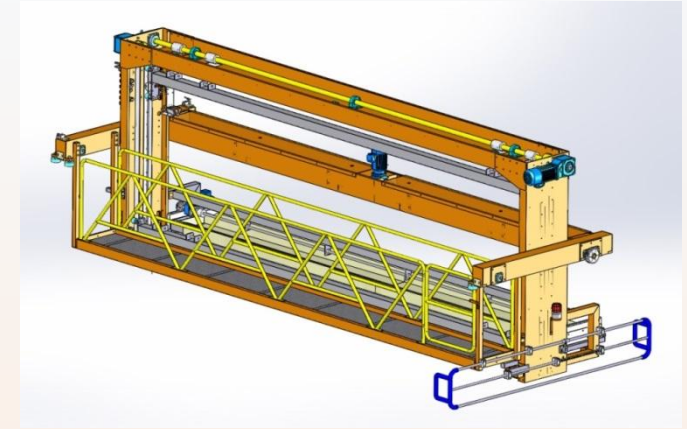
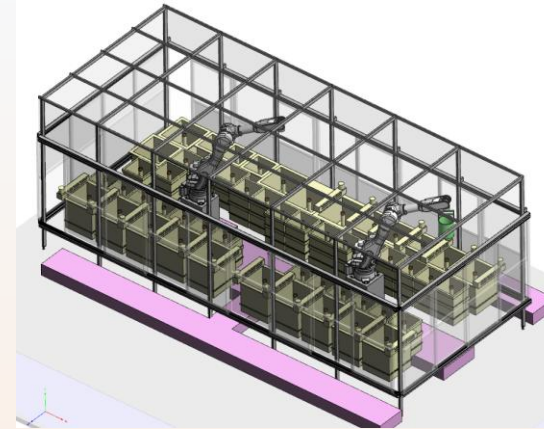
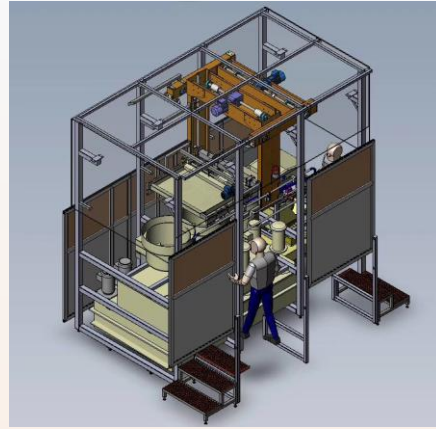
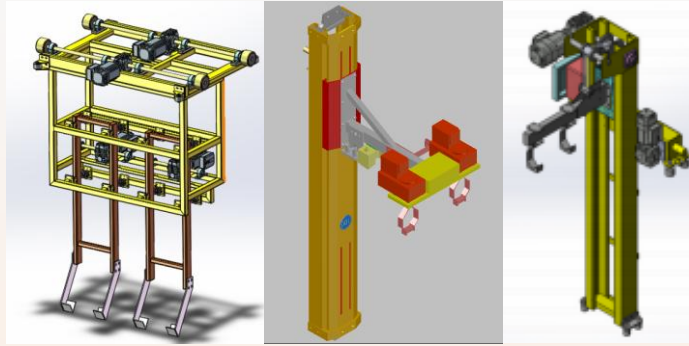
R&D Design

Technology as the first

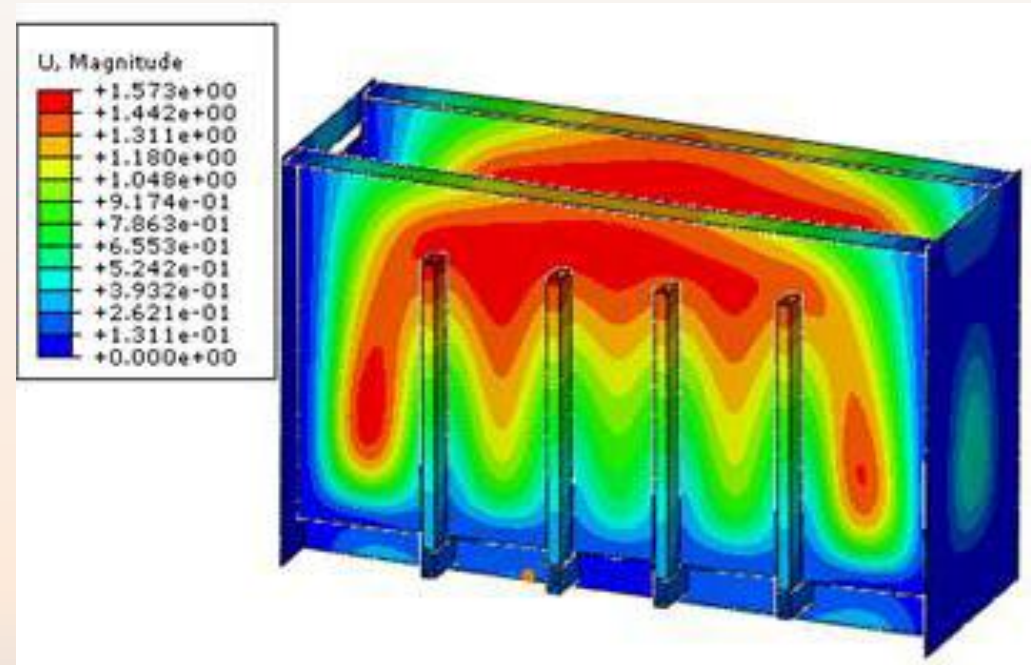
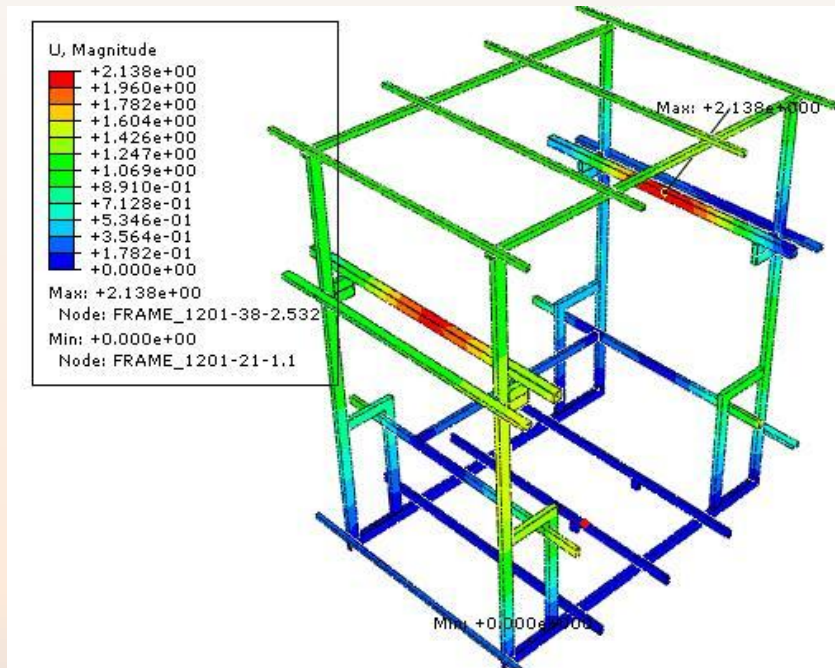


Innovation as the soul

3D Simulation



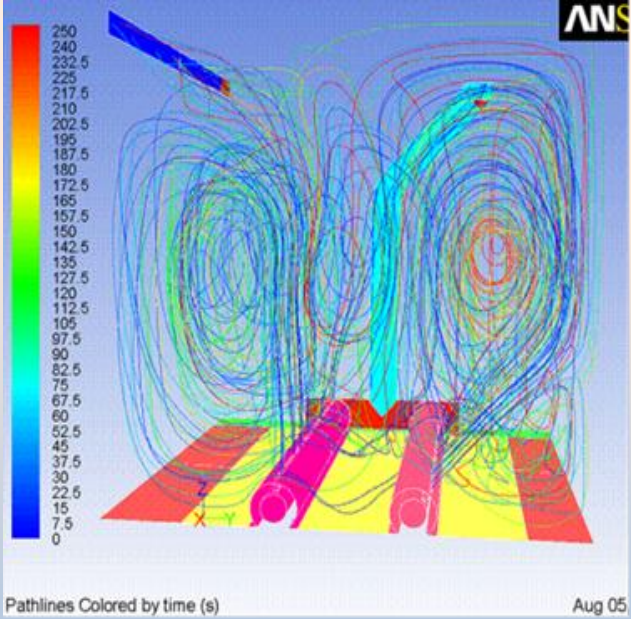
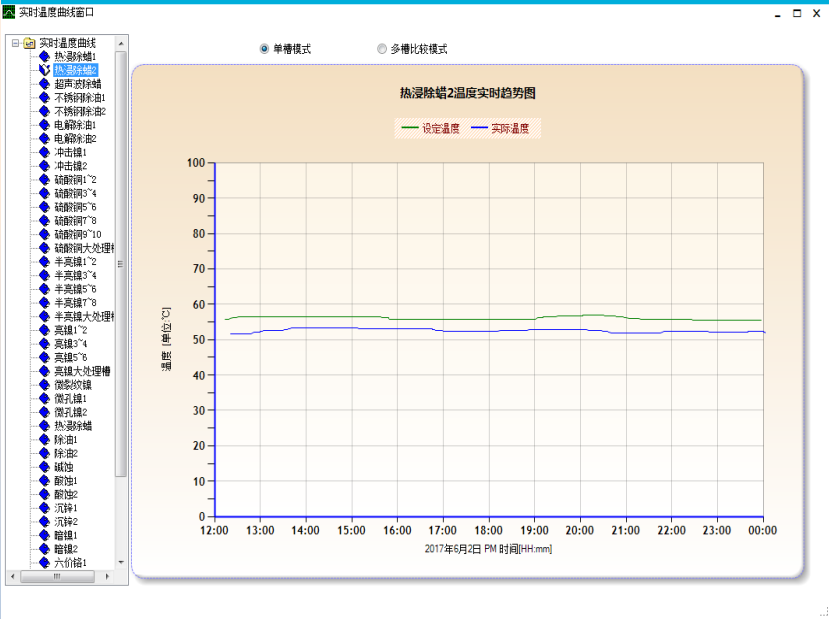
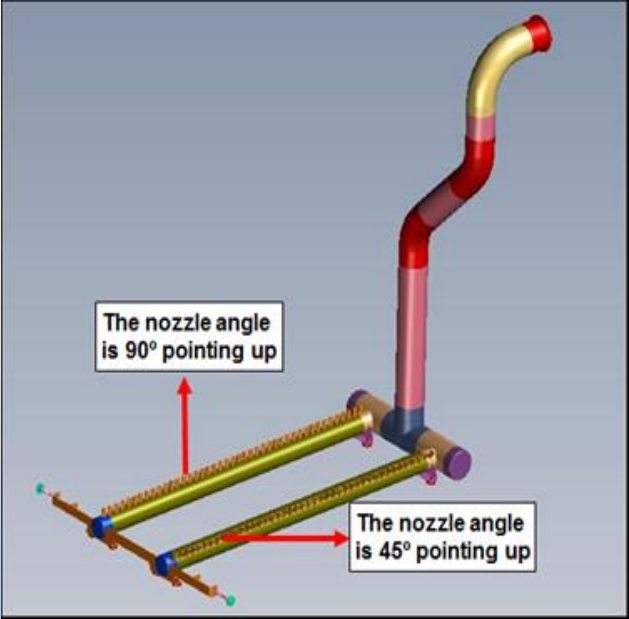
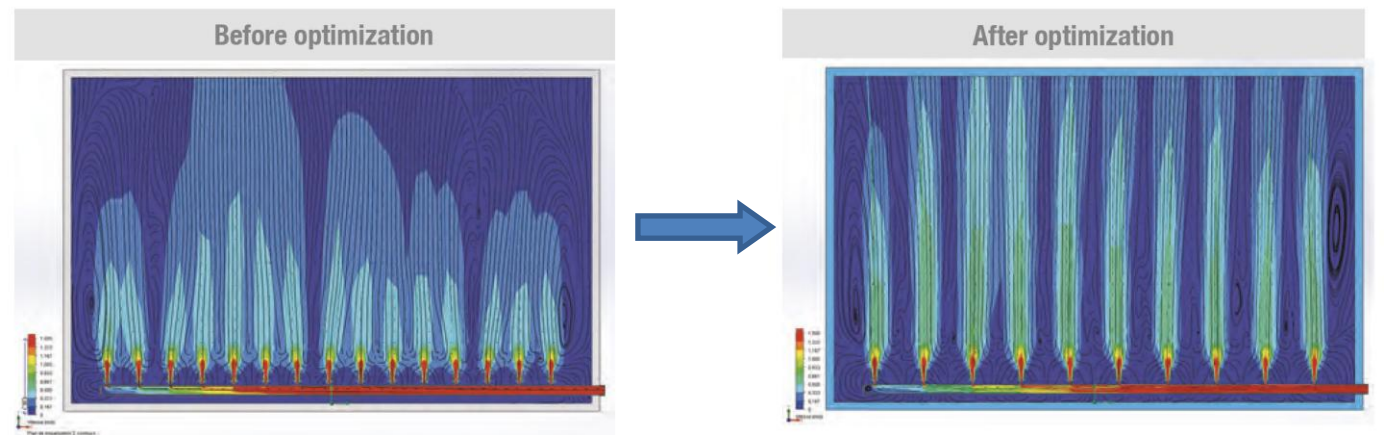
Structural Analysis



ZWCAD / ZWCAE with official authorization, applied in R&D & Design

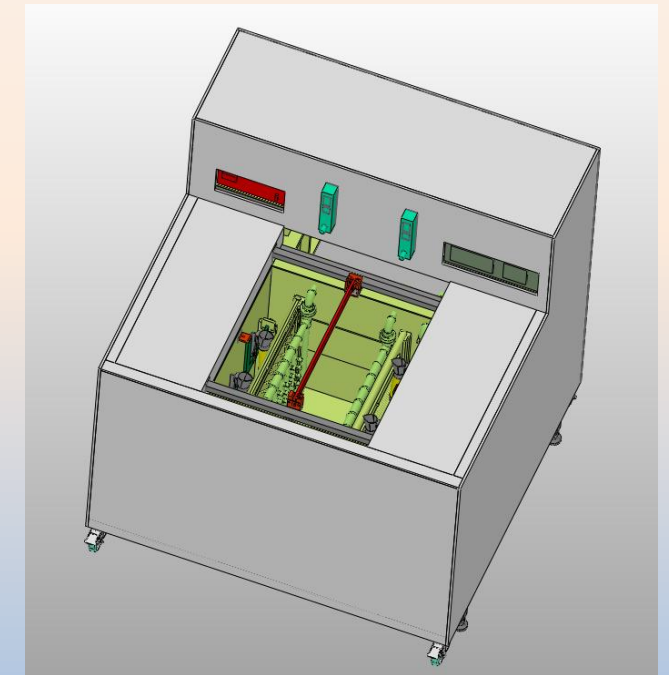
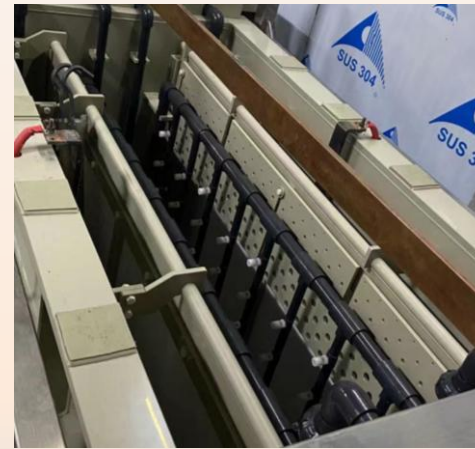
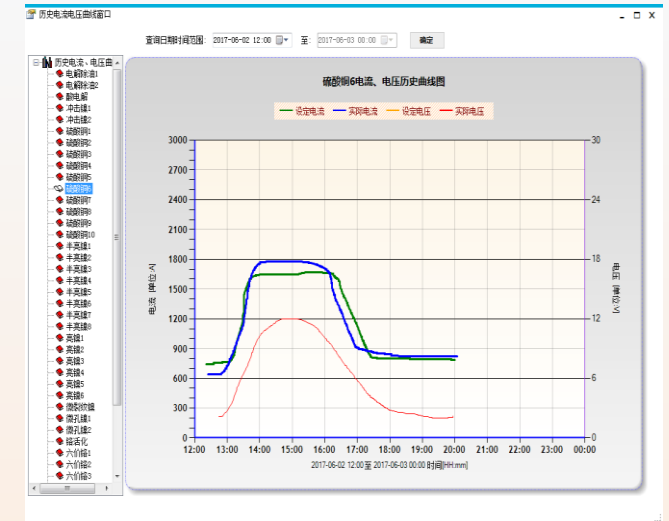
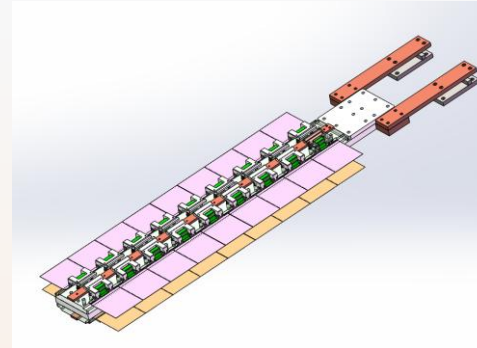
Flow Field Analysis

Flow Field Analysis → Optimized Solution
Distribution → Uniform Plating Layer



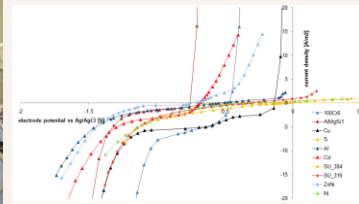
Electric Field Analysis

Electric Field Analysis → Optimized Electric Field Line Distribution → Enhanced Plating Layer Uniformity

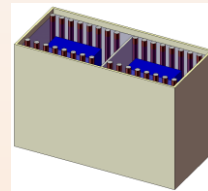
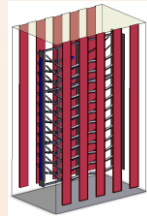


Electroplating Simulation

Electrochemical data collection



Models of facilities such as tanks, anodes and cathodes, and pipelines



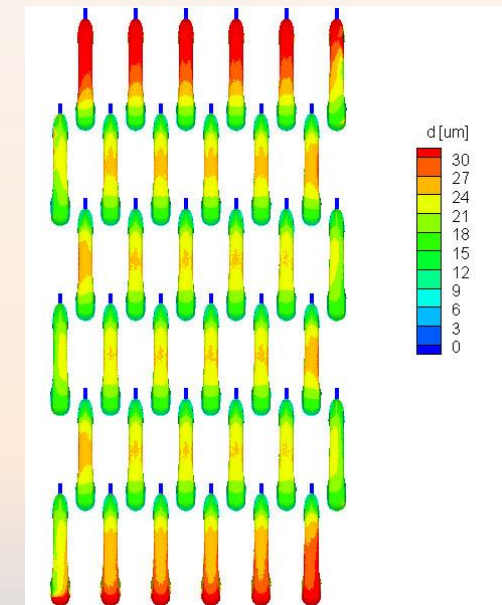
Process parameters: voltage, current, pH value, Baume degree, process time, auxiliary anode, contact resistance, etc

Part structure model



Surface treatment simulation software

Electroplating Simulation Technology (Joint Development)



Simulation of various film layers: film thickness, current density, risk areas, etc.

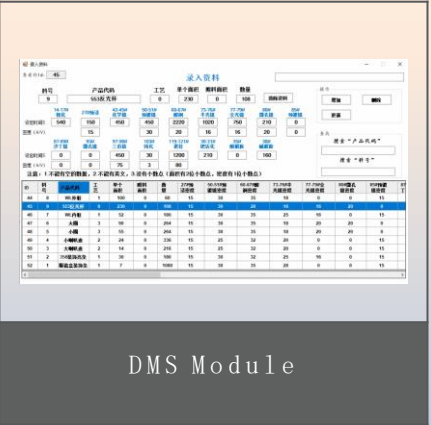
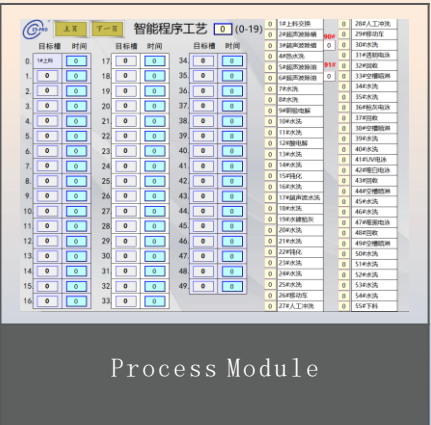
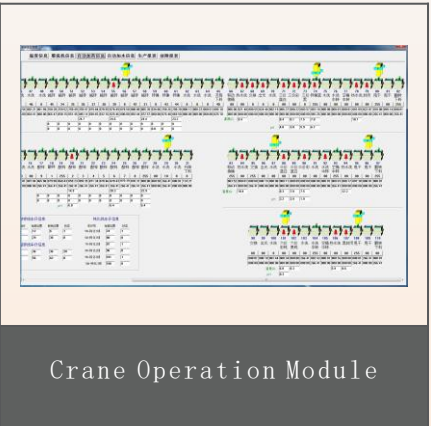
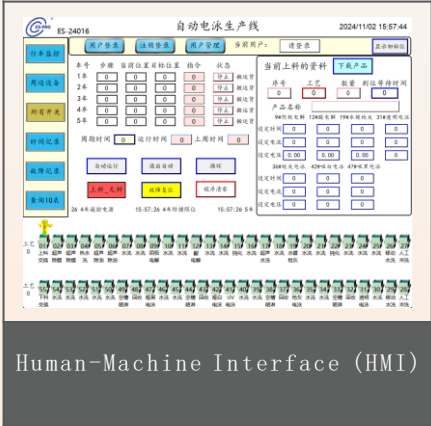
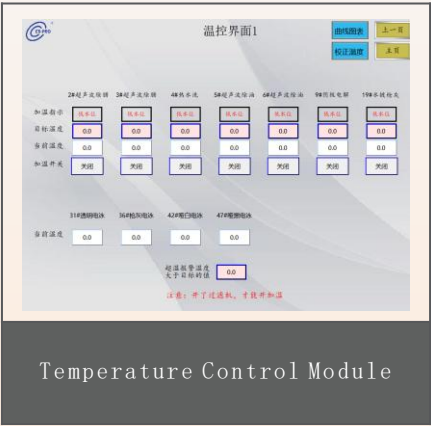
Electric Control

Adopt high-quality reliable electrical brands (Mitsubishi, Omron, Siemens, Schneider), ensuring stable equipment operation and sustained high efficiency.

Electrical control design and implementation comply with international standards, ensuring superior performance, easy O&M and robust long-term operation throughout the life cycle.



Modular Design



Processing Equipment



In the field of plastic processing, we utilize panel splicing and bending techniques to significantly reduce weld seams and effectively prevent leakage risks. For the reinforcement of tank steel frames, we have innovatively adopted the "pre-bending" process, which effectively prevents bulging.



In metal parts processing, we rely on precision lathes, milling machines, and laser cutters to ensure machining accuracy. The surface of metal products is treated with a spraying process to further enhance corrosion resistance.

塑胶加工领域，我们运用拼板、折弯技术，大幅削减焊缝，严防泄漏隐患。针对槽体钢骨加固，我们创新采用“预弯”工艺，有效预防鼓胀。



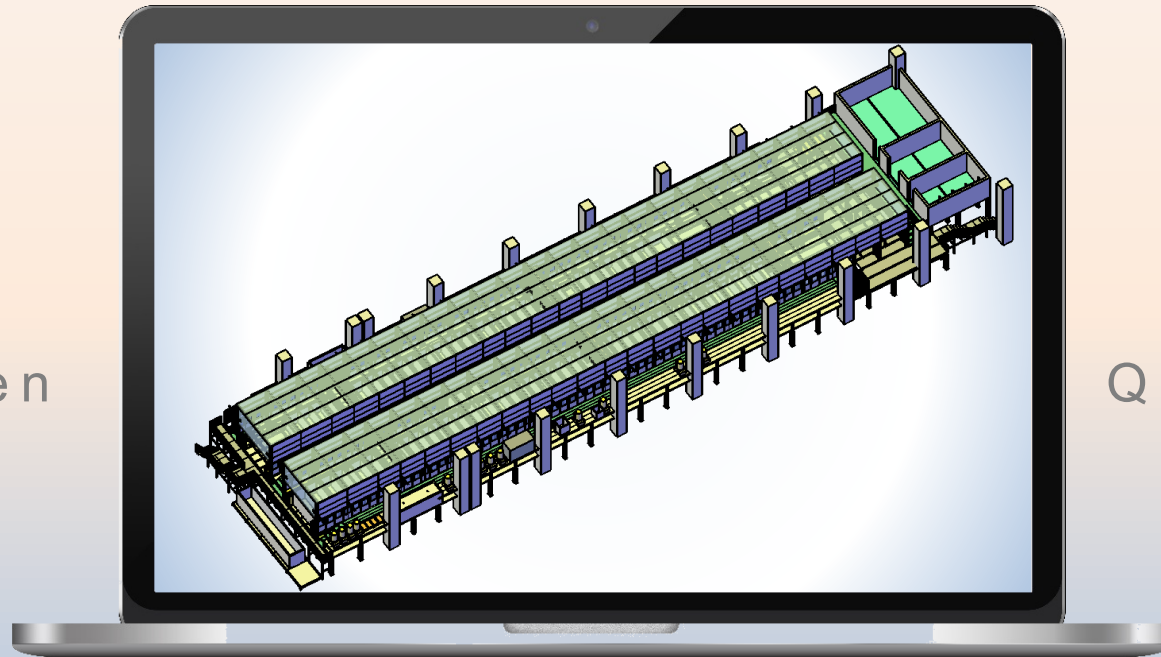
金属零件加工，我们凭借精密车铣床、激光切割机等设备，确保加工精度。金属制品表面施以喷塑工艺，进一步提高防腐性能。



03

Our projects

Integrity-Driven



Quality-Driven

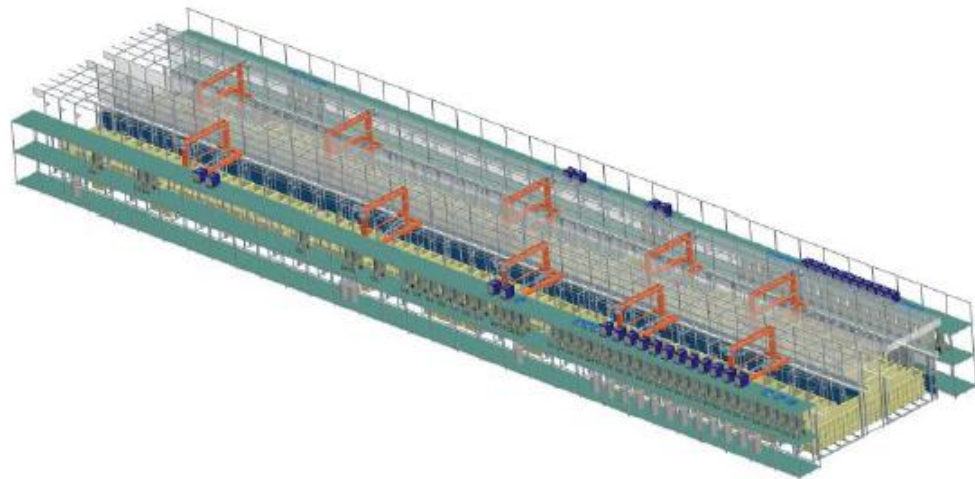
Gantry-Type Electroplating Equipment

This equipment is ideal for electroplating various products in small batches, with gantry crane flexibility to accommodate diverse electroplating needs, including zinc, copper, nickel, chrome, tin, gold, silver, phosphating, oxidation, electrophoresis, and chemical plating.

It supports multiple plating methods, including rack plating, barrel plating, vibratory plating, and rotary plating, with program control ensuring seamless switching for mixed plating, maximizing capacity while maintaining consistent process parameters.

The crane design is compact and stable, with options for liquid collection trays, dewatering, and exhaust systems. It is equipped with auxiliary brakes and special track structure, prevents slippage in harsh environments, enhancing crane efficiency.

Multi-dimensional oscillation, optimized piping, jet devices, and improved anode-cathode arrangements, along with high-efficiency shielding, enhance plating uniformity, reduce plating time, minimize material usage, and conserve water and electricity.



The **Precious Metal Electroplating Equipment** combines exquisite design with multiple patented technologies, emphasizing the meticulous craftsmanship of the equipment. Through optimized design, it enhances the uniformity of electroplating, significantly reducing the consumption of precious metals and saving customers considerable costs.



The **Electronic Electroplating Equipment** features a unique oscillating structure design that enhances the impact between the auxiliary materials and the interior of deep blind holes, effectively cleaning the holes and creating favorable conditions for subsequent electroplating processes. Additionally, the design of the workpiece carrier prevents the bending of parts, thereby improving the electroplating yield rate.



The **Lock Electroplating Equipment** adheres to the principle of meticulous craftsmanship, optimizing the electroplating process and equipment configuration to enhance the deep plating capability for blind holes and threaded holes in locks. At the same time, the flexible control of the program allows for the customization of multiple colors in the electroplating process, meeting diverse customer needs.



Motorcycle and Automotive Electroplating Equipment is designed to meet the diverse needs of various parts, including zinc, zinc-nickel, copper-nickel-chrome, hard chrome, plastic interior and exterior electroplating, aluminum plating, as well as anodizing and passivation. The equipment is tailored and configured based on the specific requirements of different sub-industries, ensuring optimal electroplating solutions for each product.



Sanitary Ware Electroplating Equipment is designed to accommodate the primary materials of bathroom products, including zinc alloys, copper, stainless steel, aluminium, and plastics. The equipment structure and design are adjusted based on the complexity of product cavities, enhancing the internal cleaning effectiveness. Additionally, it ensures a balanced distribution of electric current across high and low areas of the product, preventing issues such as burning, uneven plating, or missing coatings.



Plastic Electroplating Equipment is designed to accommodate the lightweight nature of plastic parts and the tendency for tooling to easily detach. Special components are employed to ensure the smooth operation of the equipment. Additionally, a robust exhaust design is incorporated to prevent chrome mist from affecting product quality, ensuring the flawless execution of the metallization process.



Anodizing Equipment is designed for various oxidation processes of materials such as aluminum alloys, magnesium alloys, and titanium alloys. These include standard anodizing, hard anodizing, conductive anodizing, and chromic acid anodizing, along with subsequent processes like electrocoloring, chemical coloring, sealing, and sterilization. The products serve multiple industries, including electronics, automotive, aerospace, and more.



Building Materials and Hardware Electroplating Equipment features a unique hoisting design that facilitates the draining of long tubular profiles and reduces cross-contamination between solutions. For large-sized workpieces, additional auxiliary anodes are incorporated to ensure a more uniform coating, bringing innovative improvements to the electroplating process.



Micro-Arc Oxidation (MAO) Equipment utilizes the MAO process to achieve high corrosion resistance and wear resistance on aluminum, magnesium, and titanium materials. Due to the high voltage nature of MAO, the equipment incorporates a mesh grid to isolate the anode and cathode, and employs necessary safety measures to prevent electrical shock hazards.



Phosphating and Electrophoresis Equipment features a water-bath phosphating tank with a conical bottom design for easy cleaning. The electrophoresis tank uses membrane tube anodes to control the acidity and conductivity of the bath solution. Special piping design prevents air pocket formation on workpieces. Additionally, a linear drying temperature curve is implemented to prevent paint film blistering or poor adhesion rates.



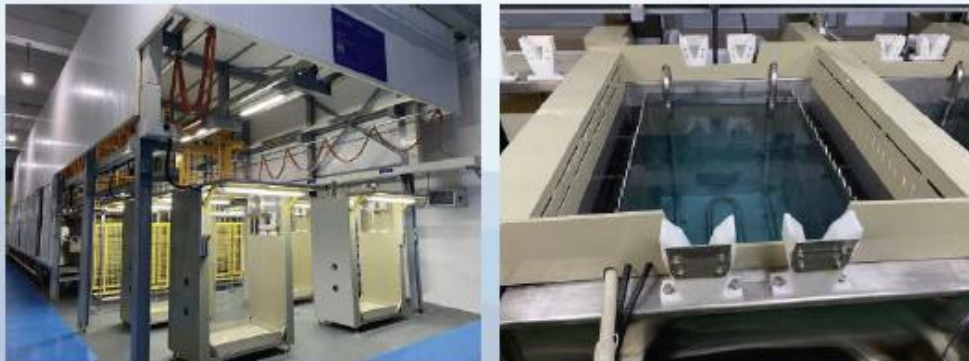
Chemical Electroplating Equipment for mainstream plating types, such as electroless copper, electroless nickel, electroless palladium, and electroless tin, are highly sensitive to temperature due to the thickness of the chemical plating film. Therefore, heating methods often employ water bath designs or near-temperature heating/cooling systems to ensure uniform heat distribution in the plating bath, resulting in superior plating quality.



Casting Alloy Specialty Cleaning Equipment is primarily used for cleaning engine turbine blades, where the cleaning solutions consist of highly corrosive acids and alkalis, posing significant risks to both equipment and personnel. To prevent corrosion, the equipment is constructed using special materials and coatings. Additionally, it is equipped with an automatic tank cover with cooling features, which helps to contain and prevent the harmful fumes from the strong acids and alkalis from evaporating, ensuring safety during operation.



Pre-coating Cleaning Equipment is commonly used for cleaning parts such as locks, bathroom fixtures, and plastic components before PVD (Physical Vapor Deposition) coating. It requires high cleanliness standards, with real-time monitoring of water quality. The slow-lift design helps break the water film, minimizing water marks. The product's drying temperature curve is controlled linearly to prevent the increase of internal stresses during the drying process.



Lighting Fixture Electroplating Equipment faces the challenge of diverse styles and colors, demanding complex electroplating processes. The system integrates an automatic water-washing mechanism with the plating tank to meet the needs of multi-process and multi-product electroplating for lighting fixtures. This solution ensures easy and smooth operation, with high-efficiency and flexible processes, while maintaining exceptional quality.



Smart Vibratory Electroplating Equipment is primarily used for plating needle-like components. It ensures better coverage and uniformity of the plating layer by precisely controlling the vibration intensity and the workpiece rotation cycle. The vibratory screening can communicate via Wi-Fi signals to capture real-time data, allowing for monitoring of the plating effect.



The PCB Chemical Plating Equipment is primarily used in processes such as chemical copper, chemical tin, chemical palladium, and chemical nickel-gold. It employs a basket-loading method for workpieces and incorporates special piping designs and oscillating structures to enhance its deep plating capabilities or to achieve through-hole metallization.



The Semiconductor Equipment Cleaning and Repair Machine is designed to address issues such as crystallization, wear, and corrosion that occur during the operation of semiconductor equipment. These issues require cleaning or repair to restore the equipment for reuse. This specialized cleaning and repair machine is widely used in the semiconductor equipment recycling industry.



The Circuit Board Electroplating Equipment is commonly used for processes such as copper plating on the board surface, pattern plating, or nickel-gold plating. It employs different clamping methods for hard boards, thin boards, and flexible boards to ensure effective conductivity and enhance the uniformity of the electroplating process.



The Small Hardware Roller Plating Equipment is commonly used for processes such as zinc plating, copper plating, nickel plating, tin plating, gold plating, and silver plating on small hardware. It is designed with varying roller barrel length-to-width ratios and perforation rates according to different workpiece sizes, ensuring optimal workpiece rotation cycles within the barrel for improved plating efficiency.



Precision Roller Plating Equipment is primarily used in the electronic plating sector, where products are small, prone to deformation, and susceptible to material jamming. As such, the roller barrel structure is more refined, and the equipment's transmission system is designed for greater reliability. Additionally, it is essential to maintain continuous electrical conductivity to ensure the quality of the roller plating process.



Roller Barrel Design is tailored to the size and plating requirements of the workpieces. Our company offers a wide range of non-standard roller barrel designs, incorporating advanced domestic and international roller plating technologies along with years of technical expertise. We are committed to providing high-quality products and services to our customers.



Rotary Barrel Set



Perforated
Rotary Barrel



Slotted Rotary Barrel



Acrylic Rotary Barrel



Adjustable-Speed
Rotary Barrel



Smart Rotary Barrel



Open-Top
Rotary Barrel



Conical Hole
Rotary Barrel



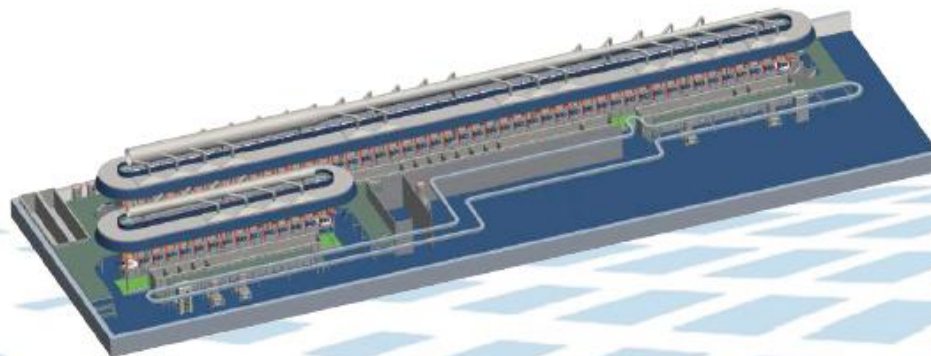
Molded Plate
Rotary Barrel

Circular Vertical Electroplating Equipment

This product is widely applied in electroplating fields with large production capacities and relatively simple processes, including but not limited to mass production scenarios for hardware products, locks, bathroom fixtures, plastics, educational supplies, motorcycle parts, and automotive components. Its mechanical design is simple and efficient, greatly reducing equipment maintenance and upkeep costs.

In the production process, the conversion of the hanging fixtures between the loading/unloading and suspension chain is automatically completed by a high-precision robotic arm, effectively reducing manual labor intensity and significantly improving production efficiency. The steel frame of the large-length tank is meticulously designed with a "pre-bending" treatment to ensure structural stability and prevent bulging or deformation. The open design of the line body is intuitive and spacious, with a roof canopy structure that not only optimizes ventilation but also prevents dust from falling, thereby improving the cleanliness of the production environment.

The application of an automatic rapid flying car device can be flexibly controlled by the program to optimize the process combination. The circulating pipeline adopts a counter current advancement design to improve the blending of chemicals in various areas of the tank. The floating pressure-type conductive device and water cooling system enhance electrical conductivity stability and prevent overheating of conductive heads. The bidirectional anode interconnection design ensures even current distribution on both sides of the workpiece, reduces thickness variation, and further improves plating efficiency and production output.



Copper and Stainless Steel Electroplating Equipment

is designed for the electroplating of these hard materials, which often require polishing treatment before the process. The pre-treatment includes ultrasonic cleaning and high-pressure washing systems, ensuring that both the surface and internal cavities of the workpieces are thoroughly cleaned. This meticulous cleaning process provides an ideal foundation for the subsequent electroplating, ensuring high-quality results and optimal plating performance.

Zinc Alloy Electroplating Equipment

Zinc alloy, being a relatively soft material, presents unique challenges for electroplating. We meticulously craft each step of the process, paying meticulous attention to detail to prevent cross-contamination between plating solutions. Our commitment to perfection ensures that we deliver products that meet the highest quality standards.



Motorcycle and Automotive Parts Electroplating Equipment

is specifically designed for high-volume production of various auto components. Tailored to meet stringent coating quality and thickness requirements, this equipment ensures the electroplating process aligns precisely with the performance standards of each part. Additionally, it features auxiliary tanks for solution circulation, facilitating efficient maintenance of electroplating solutions and enhancing operational reliability.



Plastic Electroplating Equipment enables the metalization and curing of plastic products in separate stages, optimizing the quality of each electroplating process. Precise parameter control addresses common challenges such as plating part floatation and detachment, ensuring stable and reliable production.



Building Hardware Electroplating Equipment

is designed to prioritize production output and reduce labor costs. By incorporating automated transfer systems, it minimizes manual operations, catering to large-scale production requirements. This equipment effectively lowers operational expenses for clients and enhances competitive advantage.

Small Hardware Rotational Electroplating Equipment is tailored for plating small hardware components. Each rotating arm is equipped with conductive head devices, allowing bidirectional rotation with adjustable speeds to ensure an even coating on all surfaces. This rotational plating design increases loading capacity, significantly boosting production output.





Drag-Chain Electrophoresis Equipment

is widely used for electroplating in products like furniture hardware, construction materials, and sports equipment, making it ideal for operations like phosphating, electrophoresis, and spraying. Designed to span multiple spatial levels, it facilitates seamless material transfer and significantly reduces operational costs.

Tunnel-Type Baking Equipment utilizes a controlled temperature curve, effectively reducing internal stress in products and ensuring a stronger bond between the coating and substrate. This tunnel oven features multiple heating options, typically employing hot air circulation to evenly heat the workpieces, optimizing energy efficiency.



Automatic Transfer and Switching System



Hi-Speed Shuttle System

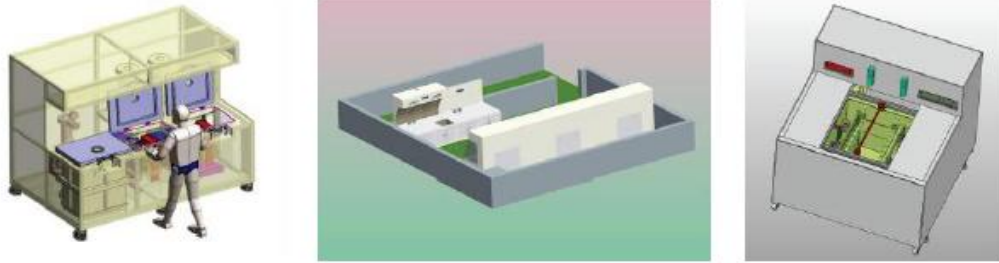
The **Robotic Transfer Arm** is a high-efficiency, precision-engineered solution designed for flexible and adaptable operation, mimicking human motion to replace manual tasks. It reduces labor intensity and minimizes secondary contamination during processes. Unaffected by workshop conditions, the robotic arm is capable of operating in dark environments, enabling fully automated, "lights-out" production, improving overall efficiency and consistency.



Precision Electroplating Equipment

Precision electroplating is a cutting-edge technology in the industry and a key direction for the deeper development of the surface treatment field. We have made significant investments in research and development, improved manufacturing processes, enhanced equipment precision and performance, and aligned with advanced international equipment technologies to lead the industry's development.

This equipment is widely used in industries such as packaging, ceramics, carriers, probes, medical instruments, and optical materials. It is suitable for electroplating on high-difficulty, high-demand products, whether due to the special nature of the base material, the complexity and extremity of the product shape, or the high standards required for the electroplating process. Our targeted research and design, high standards in material selection, and meticulous process control allow us to create high-precision electroplating equipment tailored to our customers' needs, effectively solving practical challenges.



Jewelry plating line can be designed as a manual, semi-automatic, or fully automatic line, depending on the production capacity and process requirements. For jewelry applications, ES-PRO can also customize the tank size, jig or rack design, rectifier control, filtration, temperature control, chemical dosing, and process timing.

Our main focus is to provide stable process control, good coating uniformity, consistent surface appearance, and easy operation for the customer. The line can also be integrated with PLC, HMI, recipe control, process monitoring, production data recording, and traceability when required.



Packaging Shell Electroplating Equipment is a modern tool specifically designed for metal surface treatment, providing electronic components with a robust and reliable protective coating. The complexity of electroplating the cavities, along with the high demands for uniform film thickness, requires precise control. The post-plating process ensures the product is thoroughly clean, with no watermarks remaining.



Ceramic Substrate Electroplating Equipment is designed for ceramic materials, which provide excellent insulation and thermal stability, making them ideal for signal isolation and shielding. Our precise design ensures uniform plating and strong adhesion, delivering high-quality results for these specialized applications.



The Carrier Plate Hole Filling Electroplating Equipment is designed for carrier plate, which serve as the critical link between chips and circuit boards, facilitating signal transmission, chip protection, and heat dissipation. Given the stringent requirements for hole filling electroplating, our equipment utilizes ultrasonic-assisted technology to enhance deep plating capability and achieve superior coating density, ensuring optimal performance and reliability.



Medical Equipment Electroplating Equipment serves a wide range of medical devices, including endoscopic instruments, dental equipment, and other specialized tools that require high electroplating standards. Vibration and cleaning effects are critical factors that can negatively impact the plating process. Through dedicated research and development by our team, we have successfully addressed these electroplating challenges, demonstrating the outstanding integration of technology and the medical industry.



Vacuum Electroplating Equipment is used for the cleaning and electroplating of components with pinholes, blind holes, and ultra-fine gaps. It features an advanced sealed tank design and utilizes efficient vacuum technology to ensure complete coverage during the electroplating process. This solution effectively addresses the challenge of ensuring that plating solution reaches areas such as holes, cavities, and narrow gaps where conventional methods may fail. It contributes significantly to the advancement of the surface treatment industry.



Optical Material Electroforming Equipment features an innovative rotary drum design, layered pipeline configuration, special anode arrangement, and the use of conductive bearings. These design elements have ingeniously addressed the critical issue of product uniformity, enhancing the reliability of the electroplating process. This technological breakthrough sets a new benchmark for the precision processing of optical materials.



Safety, Environmental Protection, Cost Reduction, and Efficiency Enhancement

We ensure safe equipment operation by managing risks throughout design, construction, and use, addressing mechanical, energy, fall, hazardous, and operational risks.

Aligned with national environmental policies, ES-PRO TECHNOLOGY focuses on energy conservation and green production. Our containment system prevents leakage, and our water control and zero-discharge recycling systems conserve water and reduce waste. Our gas scrubber meets environmental standards by optimizing gas neutralization, while intelligent monitoring tracks and adjusts energy use and emissions in real time.

To reduce costs and boost competitiveness, we optimize processes for better electroplating quality, efficiency, and yield. By improving program control and plating tank design, we minimize water, electricity, and material waste. Big data analytics further enhances resource allocation and operational efficiency.

Pure DI Water Production Equipment

The pure water production equipment improves reliability by seamlessly integrating reverse osmosis, resin exchange, and Electrodeionization (EDI) technologies, ensuring a stable and consistent water quality supply for the production line.



Recycled Water and Wastewater Treatment Equipment

ES-PRO TECHNOLOGY focuses on "energy conservation" and "clean production" by efficiently reusing rinse water. The system ensures over 90% water recovery, preventing cross-contamination between different water qualities. This innovative approach significantly enhances water resource efficiency and sets a new standard for sustainable water conservation in the industry.



Environmental Protection and Purification Equipment

ES-PRO TECHNOLOGY uses high-performance flame-retardant materials like PPS, PVC, and FRP for exhaust ducts and scrubbers to ensure production environment safety and stability. To handle acidic fumes, cyanide gases, chromium mist, and organic emissions from electroplating and spraying processes, we implement separate collection and treatment methods. Advanced treatment technologies guarantee that all gases meet emission standards, maintaining environmental purity.



04

Customer Base

Expanding vision



Connecting the world

Our Customer



- **Product Positioning:** Focused on specialized industries and targeted markets, with the brand positioned in the mid-to-high-end segment. Our four core competitive strengths are **technology, management, quality, and service**.
- **Key Industries:** Defense and heavy industry, aerospace, automotive and motorcycle parts, construction materials and hardware, plastic products, electronic packaging, special-purpose equipment, environmental protection equipment, and other industries.
- **Global Presence:** ES-PRO Group covers **more than 30 countries and regions**, including China, Singapore, Malaysia, Vietnam, Thailand, Myanmar, India, Japan, South Korea, Indonesia, Russia, Pakistan, Egypt, Algeria, Morocco, Mexico, Canada, Australia, and more

Contact Us

顺德研发中心

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A close-up photograph of two hands shaking in a firm grip, symbolizing agreement or partnership. The hands are wearing dark blue sleeves. The background is a bright, out-of-focus indoor setting.

Thank you

ES-PRO TECHNOLOGY — SMARTENING THE FUTURE
LOOKING FORWARD TO GOING FURTHER, TOGETHER