



COMPANY PROFILE



50+ Years
Of experience



ELECTRO MAGNETIC innovative technologies

ABOUT US

Kerone Engineering Solutions Ltd is a global leader in advanced industrial heating, drying, cooling & end to end process engineering solutions. With over five decades of proven expertise, we specialize in designing, manufacturing, and delivering highly customized, cutting-edge systems tailored to the evolving needs of industries worldwide.

Our commitment to engineering excellence, sustainability, digitalization, and technological innovation has positioned us as a trusted partner for businesses across multiple sectors. By integrating Artificial Intelligence (AI), Machine Learning (ML), and Internet of Things (IoT) technologies into our systems, Kerone ensures smarter automation, real-time monitoring, predictive maintenance, and data-driven process optimization—empowering our clients to achieve greater productivity, efficiency, and reliability.



50+

Years of Experience



10,000+

Satisfied Clients



500+

Employee



100+

Experts



50+

Global Presence



50+ Years Manufacturing Excellence



Great Sale Support



Highly Customized Product



Adherence to Standards



Sound Infrastructure



Team of experts Delivering Quality



Timely Delivery



Cost Effective Solutions



INDUSTRIES WE SERVE

- ✓ Food Processing & Agro-Processing
- ✓ Chemicals & Petrochemicals
- ✓ Pharmaceuticals
- ✓ Textiles, Automotive & Aerospace
- ✓ Paper & Packaging
- ✓ Ceramics & Glass
- ✓ Rubber & Plastics
- ✓ Environmental & Waste Management
- ✓ Oil, Gas & Steel Industries



- ✓ Industry Expertise – Over 50 years of global engineering leadership.
- ✓ Custom Solutions – Tailored engineering that meets unique industrial requirements.
- ✓ Global Reach – Trusted by industries across continents with proven reliability.
- ✓ Digital & Smart Systems – AI/ML-powered automation, IoT-based monitoring, and predictive insights.
- ✓ Cutting-Edge Technology – Continuous innovation in heating, drying, and advanced processing.
- ✓ Energy Efficiency – AI-optimized designs for lower energy consumption and sustainability.

QUALITY & COMPLIANCE

At Kerone, quality and compliance are non-negotiable. All our solutions are engineered in adherence to international standards and industry best practices, ensuring maximum safety, durability, reliability, and efficiency. With integrated digital technologies, we enable smarter quality control and compliance tracking across all operations.



Research, Innovation & Advanced Technology Ecosystem



Kerone's long-term leadership in thermal, electromagnetic, and process engineering is driven by a strong in-house research ecosystem, global technical collaborations, and advanced analytical capabilities.

Our Innovation Divisions

01

INNOVATION ENGINE

Kerone Research and Development Centre

The core innovation engine supporting process development, pilot validation, scale-up, and next-generation technology development across Kerone's solutions.

Focus Areas

- Thermal process development & optimisation
- Microwave, RF & plasma-assisted process research
- Drying, heating, calcination & carbon processing
- Energy efficiency & emission reduction technologies
- Green processes: biochar, CCU & waste-to-energy



02

GLOBAL PLATFORM

Association of Industrial Microwave Heating and High Frequency Applications

A global industry-academia platform led by Kerone, focused on advancing microwave, RF and emerging energy technologies worldwide.

Key Objectives

- Global dissemination of microwave & RF knowledge
- Industry-academia collaboration & research exchange
- Technical workshops, training & certifications
- Best-practice development & standardisation



03

ANALYTICS DIVISION

Kerone Advanced Analytical Technologies

Provides advanced material, process and performance analytics, enabling data-driven engineering decisions and validation.

Analytical Scope

- Material characterisation & thermal analysis
- Process performance benchmarking
- Carbon, biochar & advanced material analysis
- Quality validation & compliance support
- Analytical support for R&D & client trials



OUR PARTNERS AND COLLABORATORS

Company Partners

- Linetech Pty Ltd. (Australia)
- Tauran Ventures (Thailand)
- Fricke und Mallah (Germany)
- TIT Company LLC (Uzbekistan)
- EM Innovative Technologic (Italy)
- Ornatus Industrial Technologies (Israel)
- JNJ Global Technology Limited (Bangladesh)



University Collaborators

- Aston University
- Cardiff University
- Cambridge University
- Harper Adams University
- The University of Nottingham
- National Institute of Technology
- Institute of Chemical Technology
- Birla Institute of Technology And Science
- Council of Scientific and Industrial Research



Governmental Bodies

- UK Research and Innovation
- Institute of Chemical Technology
- National Institute of Technology
- Defence Food Research Laboratory



TRUSTED PARTNERS



Engineering Excellence

Across Thermal, Process & Smart Manufacturing



Industrial Drying & Dehydration Systems

Rotary, Spray, Infrared, Microwave, Fluid Bed, Flash, Tunnel, and Tray Dryers.

- IoT-enabled humidity, airflow, and temperature controls..
- AI algorithms for adaptive drying cycles and energy-optimized throughput



Microwave, RF & Plasma Systems

Microwave chamber/vacuum dryers, pyrolysis furnaces, sterilization units.

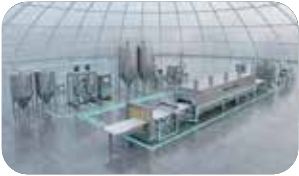
- Cold plasma & non-thermal plasma for food safety, shelf-life extension, and healthcare sterilization.
- ML-based predictive models for process uniformity and contamination control.



Industrial Ovens & Heating Systems

Batch, Continuous, Drum Heating, Annealing, and Infrared Ovens.

- Smart sensors for uniform heating and fault diagnostics.
- AI-based thermal load balancing for reduced energy usage



Process Equipment & Complete Plants

Reactors, distillation units, batching/mixing systems, ethanol recovery plants.

- Digital twins for virtual commissioning, scale-up studies, and efficiency optimization.
- IoT/SCADA integration for predictive maintenance and compliance logging.



Biochar & Sustainable Processing Lines

Pyrolysis and torrefaction systems for biochar, syngas, and bio-oil production.

- IoT dashboards for real-time carbon credit and emissions tracking.
- AI-driven waste-to-energy and waste-to-value process optimization



Seaweed & Microalgae Processing Lines

Efficient Seaweed & Microalgae Processing Systems

- AI & IoT enable real-time control of temperature, pH, humidity, and nutrients.
- Predictive maintenance improves efficiency, biomass quality, and energy savings.



Food & Nutraceutical Processing Plants

Ready-to-Eat meal lines, cereal and baby food plants, potato powder production.

- Microwave/Infrared food processing for nutritional retention.
- IoT-enabled hygiene monitoring and blockchain-ready traceability systems.



Coating & Surface Engineering Plants

Web, slot-die, curtain, gravure, and air-knife coating lines.

- Automated IoT controls for precise viscosity and thickness monitoring.
- ML-based defect detection for zero-error production



Pilot Plants, Lab-Scale & R&D, Units

Flexible testbeds for chemical, food, and pharmaceutical R&D.

- Cloud-based IoT data collection with AI-driven optimization engines.
- Modular scale-up pathways to full industrial deployment.



Environmental & Green Solutions

Sludge dryers, effluent evaporation systems, manure/biofertilizer plants.

- IoT-linked real-time water, gas, and emission monitoring.
- AI for circular economy applications: recycling, valorization, carbon capture.

AI, ML & IoT

Powering Next-Gen Industrial Solutions

We build end-to-end process solutions that span drying, thermal processing, environmental control, automation, and digital integration. Designed to adapt to diverse industrial needs, our systems leverage AI, ML, and IoT intelligence for smarter operations, predictive performance, and higher reliability across every sector.

Intelligent Solutions. Future-Ready Industries.

Delivering Life. Building Futures

Our engineering goes beyond heating and cooling we create integrated process platforms that combine mechanical innovation, digital automation, and sustainable design. From material drying and blending to waste recovery, clean energy utilisation, and precision control, KERONE solutions ensure safety, scalability, and efficiency at every stage of industrial production.



APPLICATIONS ENGINEERED FOR EVERY INDUSTRY

KERONE combines advanced engineering with AI, ML, and IoT to deliver intelligent heating and process solutions that power growth, efficiency, and competitiveness worldwide.

Precision engineering solutions tailored to your industry's needs

- AI, ML & IoT enabled
- Industry-grade compliance & certifications
- Proven custom engineering
- Turnkey delivery
- Energy efficiency & cost optimisation
- Reliability & industrial durability
- After-sales support & spares
- Domain expertise across vertical



01 Industrial Drying & Dehydration Systems

12-25

- **Industrial Dryer**
 1. Microwave Dryer
 2. Radio Frequency Dryer
 3. Conventional Dryer
 4. Infrared Dryer
 5. Hot Air Dryer
 6. Pneumatic/ Flash Dryer
 7. Drum Dryers
 - Single Drum Dryer
 - Double Drum Dryer
 - Contact Drum Dryer
 8. Box Dryer
 9. Heat Pump Dryers
 - Heat Pump Batch Tray Dryer
 - Heat Pump Continuous Tray Dryer
 10. Imperial and Band Dryer
 11. Coal/Briquette Dryer
 12. Tunnel Dryer
 13. Agitated Thin Film Dryer
 14. Fluidised Bed Dryers
 - Vibratory Fluid Bed Dryer
 - Continuous Fluid Bed Dryer
 - FBD dryer
 - Vibro Fluid Bed Dryer
 15. Tower Dryer
 16. Rotary Dryers
 - Biomass Dryer
 - Coal Palm Slag Rotary Dryer
 - Coal Rotary Dryer
 - Coal Slime Rotary Dryers
 - Coal Steam Type Rotary
 - Coconut Coir Dryer
 - Cow Dung Rotary Dryer
 - Elephant Grass Dryer
 - Mineral Slag Rotary Drum Dryer
 - Organic Fertilizer Plant
 - Paddle Rotary Dryer
 - Paddle Stirring Drum Rotary Dryer
 - Poultry Manure Rotary Dryer
 - Rotary Drum Sawdust Dryer
 - Sand Rotary Dryer
 - Three Channel Drum Rotary Dryer
 17. Tray Dryer
 18. Fish Dryer
 19. Spiral Conveyor Dryer
 20. Microwave Spices Dryer
 21. Food Dryer
 22. Grain Dryer
 23. Freeze Dryer
 24. Coir Pith Dryer
 25. Conveyorised Organic Waste Dryer
 26. IR Dryer
 27. Slag Dryer
 28. Pulp Packaging Dryer
 29. Umbrella IR Dryer
 30. Coal Dryer
 31. Spray Dryers
 - Lab Spray Dryer
 - Pilot Spray Dryer
 32. Sludge Dryers
 - ETP Sludge Dryer
 - Paddle Sludge Dryer

• Industrial / Commercial Dehydrators

1. Tunnel Dehydrator
2. Conveyorised Dehydrator
3. Batch Type Dehydrator

02 Industrial Ovens, Furnaces & Thermal Processing Systems

26-36

• Industrial Oven

1. Batch Oven
2. Electric Oven
3. Conveyor Oven
4. Plastic Annealing Oven
5. Drum Heating Oven
6. Flameproof Drum Heating Oven
7. Drum Heater
8. Curing Oven
9. Electric Oven For HT/LT Motors
10. Laboratory Oven
11. Vacuum Oven
12. Continuous Industrial Oven

• Industrial Furnace

1. Batch Furnace
2. Industrial Electric Furnace
3. Heat Treatment Furnaces
 - Annealing Furnaces
 - Hardening & Tempering Furnaces
 - Stress Relieving Furnaces
 - Normalizing Furnaces
4. Continuous Furnaces
5. High-Temperature Furnaces
 - Electric High-Temperature Furnaces
 - Gas-Fired High-Temperature Furnaces
 - Laboratory & Industrial High-Temp Furnaces
6. Calcination Furnaces
 - Rotary Calciner
 - Batch Calciner
7. Continuous & Batch Furnaces
 - Batch Type Furnaces
 - Continuous Belt / Roller Hearth Furnaces
 - Bogie Hearth Furnaces
8. Atmosphere Controlled Furnaces
 - Inert Gas Furnaces
 - Vacuum Furnaces
 - Controlled & Protective Atmosphere Furnaces
9. Roasting Furnace
10. Co2 Autoclave
11. Thermal Processing Furnace
12. Special Application Furnaces
13. Energy-Efficient & Hybrid Furnaces

03 Microwave, RF & Plasma Systems

• Microwave Systems

1. Microwave Drying System
2. Microwave Heating & Preheating System
3. Microwave Vacuum Drying (MVD) System

37-54

4. Microwave Reactors (Chemical & Materials)
5. Continuous Microwave Conveyor System
6. Batch Microwave Processing System
7. Hybrid Microwave–Conventional System
8. Microwave/Infrared Rubber Vulcanization Line
9. Microwave Solid Tyre Preheating System
10. Microwave Chemical Vapour Deposition System
11. Microwave Vacuum Technology
12. Microwave Sterilisation System
13. Microwave Chamber Dryer
14. Microwave Chamber Furnace
15. Microwave Pyrolysis Rotary Furnace Oven

37–54

- **Radio Frequency (RF) Systems**

1. RF Batch Dryer
2. RF Continuous Dryer
 - RF Moisture Equalization Systems
 - RF Preheating Systems
 - RF Post-Curing Systems

- **Plasma Systems**

1. Thermal Plasma System
2. Microwave Plasma System
3. Microwave Air Jet Plasma
4. Plasma Surface Treatment System
5. Plasma Cleaning & Activation System
6. Plasma Pyrolysis & Waste Treatment System

- **Advanced & Precision Energy Systems**

1. Localized Microwave Heating (LMH) System
2. Selective & Targeted Heating System

- **Industry-Specific System**

1. Food & Nutraceutical Processing System
2. Chemical & Polymer Processing System
3. Minerals, Ceramics & Metallurgical System
4. Rubber, Tyre & Composite Processing System
5. Electronics, Battery & Advanced Material System

- **R&D, Pilot & Scale-Up Systems**

1. Laboratory Microwave & RF Unit
2. Pilot-Scale Processing System
3. Commercial Scale-Up Plant

104 Biochar & Sustainable Processing Lines

- **Biochar Processing Line**

1. Biochar Plant
2. Biomass Gasification Power Plant
 - Bio Ethanol Plant
 - Biomass Recycling Plant
 - Biomass Fuels Plant
 - Biomass Fuel Oils Plant
 - Biomass Organic fuel Plant
 - Biomass Biochar Plant
 - Organic Biochar Plant
3. Renewable Energy & Sustainability
4. Pyrolysis Plant

55–57

- Batch Tire Plastic Pyrolysis Plant
- Waste Tire Plastic Pyrolysis Plant
- Skid Mounted Small Pyrolysis Plant
- Semi-continuous Tire Plastics Pyrolysis Plant
- Fully Continuous Tire Pyrolysis Plant
- Waste Tires Plastics Recycling To Oil Plant
- Waste Aluminized Paper Pyrolysis Machine
- Medical Waste Pyrolysis Plant
- MSW Pyrolysis To Oil Plant
- Oil Sludge Pyrolysis Plant
- Fully Continuous Plastic Pyrolysis Plant

55–57

5. Carbonization Plant

- Mobile Skid Mounted Carbonization Plant
- Woody Waste Carbonization Plant
- Agricultural Waste Carbonization Plant
- Sludge Carbonization Plant
- Continuous Biomass Carbonization Plant
- Forestry Waste Carbonization Plant

105 Process Equipment & Complete Plants

- **Process Plant**

1. Turnkey & Customized Plant
2. PE Wax Plant
3. Bag House Filter
4. Hot melt Adhesive Plant
5. Potato Powder Production Plant
6. Sulphur Melting & Granule Plant
7. Batching Systems and Plant
8. Pilot Plants/ Lab Scale Plant
9. Ethanol Recovery Plant
10. Food Processing Plant
11. Wet Laid Paper Plant
12. Vacuum & MVD Drying Plant
13. Glass Fibre Paper Plant
14. Mixing Kettle Plant
15. Pilot Mixing Kettle Plant
16. Hot Melt Adhesive Mixing Plant
17. Mixing, Granulation & Size Reduction
 - Industrial Mixers & Blenders
 - Granulators & Agglomerators
18. Chemical & Process Plants
 - Reaction & Polymer Processing Plants
 - Calcination & Pyrolysis Plants
 - Biochar & Waste-to-Energy Plants
 - Chemical Drying & Curing Systems

58–64

106 Seaweed & Microalgae Processing Lines

1. Blanching/Iodine Reduction for Seaweed Processing
2. Seaweed Stabilization Module for Seaweed Processing
3. Fresh Seaweed Processing plant
4. Dry Seaweed processing Line
5. Screw Press for Seaweed Dewaterin
6. Mixing and Storage Tank for Seaweed Processing
7. Seaweed Belt Dryer
8. Seaweed Drum Dryer
9. Algal Biofuel Plant
10. Algae Biorefinery
11. Bioscience Systems for Seaweed & Microalgae
12. Seaweed & Algae Bio-Stimulant Production System

65–69

07 Food & Nutraceutical Processing Plants

- **Food Processing Line**
 1. Microwave Food Production Plant
 2. Infrared Food Processing Plant
 3. Cereal Processing Plant
 4. Baby Food Production Plant
 5. Nutritional Retention
 6. Fruit & Vegetable Processing
 - Pulping, Slicing & Blanching Lines
 - Powder & Flake Processing Plants
 7. Herbal & Nutraceutical Processing
 - Medicinal Herb Drying & Sterilization
 - Botanical Extraction & Processing Plants
 - Herbal Powder & Capsule Processing
 - Ayurveda & Phytochemical Processing Systems
 8. Spice, Tea & Coffee Processing
 - Spice Cleaning, Drying & Grinding Plants
 - Tea Withering, Drying & Conditioning Systems
 - Coffee Roasting & Drying Plants
 9. Grain, Cereal & Pulse Processing
 - Paddy, Wheat & Maize Processing Plants
 - Pulses Cleaning, Drying & Milling Systems
 10. Functional Foods & Ingredients
 - Protein, Fiber & Prebiotic Processing Plants
 - Food Additive & Ingredient Drying Systems
 11. Food Powders & Ingredient Processing
 - Spray, Tray & Microwave Drying Systems
 - Blending, Granulation & Agglomeration Plants
 - Flavor, Color & Nutrient Processing Units
 - Instant Food Powder Manufacturing Plants
 12. Cold-Chain & Shelf-Life Enhancement
 - Hygienic Drying & Preservation Systems
 - Moisture Control & Stabilization Units
 - Microbial Load Reduction Systems
 - Quality Retention & Nutrient Preservation
 13. Cold Plasma
 - Cold Plasma System
 - Cold Plasma for Sterilisation

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- **Coating and Impregnation Plants**

1. Gravure Coating Machine
2. Air Knife Coating Machine
3. Web Coating Machine
4. Slot Die Coating Machine
5. Curtain Coating Machine
6. Immersion/Dip Coating Machine
7. Hot Melt Coating Machine
8. Fabric Coating Machine

09 Environmental & Green Solutions (CCUS, Biochar, WtE)

1. Sludge dryers, effluent evaporation systems, manure/biofertilizer plants.
2. IoT-linked real-time water, gas, and emission monitoring.
3. AI for circular economy applications: recycling, valorization, carbon capture
 - Direct Air Capture
 - CO2 Removal
 - CO2 Capture
 - Carbon Removal
 - CO2 Transport and Storage
 - Carbon Capture and Utilization
4. Carbon Capture, Utilisation & Storage
 - Industrial CO₂ Capture Systems (Flue Gas & Process)
 - Direct Air Capture (DAC) Systems
 - CO₂ Compression, Purification & Liquefaction
 - Modular & Skid-Mounted CCUS Units
5. Carbon Recovery & CCU
 - Recovered Carbon & Char Processing
 - Activated Carbon & Carbon Materials
6. Biochar & Carbon-Negative Technologies
 - Biomass & Waste-to-Biochar Plants
 - Pyrolysis & Carbonisation Systems
 - Carbon-Negative & Soil Amendment Solutions
7. Waste-to-Energy & Resource Recovery
 - Waste-to-Energy (WtE) Plants
 - Sludge Drying & Energy Recovery
 - RDF, Pyrolysis & Gasification Systems
8. Green Energy & Sustainable Thermal Systems
 - Energy-Efficient & Low-Emission Thermal Processing
 - Hybrid Electric, Microwave & RF Systems
9. Environmental Protection & Digital Green Solutions
 - Emission Control & Pollution Abatement Systems

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08 Coating, Surface & Advanced Material Processing

- **Coating Line/Plant**
 1. Lab and Pilot Scale Coating Line
 2. Commercial Scale Coating Line
 3. Cast Coating Line

77-82

10 Digital, AI & Smart Engineering Solutions

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Industrial Drying & Dehydration Systems



Industrial Dryer

An Industrial Dryer is a high-performance drying machine designed to remove moisture from powders, granules, pastes, slurry, and bulk materials in a fast, uniform, and energy-efficient manner. Built with a robust heavy-duty structure and advanced heat transfer design, it ensures consistent drying quality, controlled temperature operation, and reliable continuous or batch processing as per production requirements. Industrial dryers are widely used in chemical, food, pharmaceutical, fertilizer, mineral, and agro industries, offering high output capacity, low maintenance, safe operation, and customizable options such as hot air/steam/electric heating, automation controls, dust collection systems, and material construction in MS/SS to suit different applications.

Types of Industrial Dryers

- Microwave Heating Dryer
- Radio Frequency Heating Dryer
- Conventional Heating Dryer
- Infrared Dryer
- Hot Air Dryer
- Pneumatic/ Flash Dryer
- Drum Dryers
- Box Dryer
- Heat Pump Dryers
- Imperial and Band Dryer
- Coal/Briquette Dryer
- Tunnel Dryer
- Agitated Thin Film Dryer
- Fluidised Bed Dryers
- Rotary Dryers
- Tower Dryer
- Tray Dryer
- Fish Dryer
- Spiral Conveyor Dryer
- Microwave Spices Dryer
- Food Dryer
- Grain Dryer
- Freeze Dryer
- Coir Pith Dryer
- Conveyorised Organic Waste Dryer
- IR Dryer
- Slag Dryer
- Pulp Packaging Dryer
- Umbrella IR Dryer For Pharma
- Spray Dryers
- Sludge Dryers

Microwave Dryer



A Microwave Dryer is the future in the field of advanced industrial drying machines. It heats moisture directly inside the material by microwave energy to ensure speedy, uniform, and effective drying. Different from any other traditional dryer, it realizes internal volumetric heating, which reduces drying time and saves energy consumption greatly while maintaining good quality in the product. This device is very suitable for products with high moisture or sensible temperature and can also be operated as a batch or continuous process. Considering the integration into state-of-the-art processing lines, the system provides safe operation, consistent performances, and is designed as a shielded chamber equipped with precise power control.

Radio Frequency Dryer



A Radio Frequency Dryer is an advanced dryer that uses high radio-frequency electromagnetic waves to heat the material uniformly from the inside out to remove moisture effectively and efficiently. This method takes relatively less time compared to conventional dryers and preserves the quality of the material as well. The method of removing moisture with the help of radio-frequency electromagnetic waves is precise and consumes less energy compared to conventional methods of dehydration.

Conventional Dryer



A Conventional Dryer is designed for efficient and uniform drying, accomplished by circulating hot air throughout the drying compartment. It is equipped with quality heating elements, accurate temperature control, and a carefully designed airflow system for efficient evaporation. The sturdy system is made for continuous industrial use, but it delivers an energy-efficient process. This easy-to-operate, safe, and low-maintenance device is ideal for various materials and processes.

Infrared Dryer



Infrared Dryers employ state-of-the-art infrared technology in drying surfaces quickly without heating or blowing directly on them. Infrared dryers are most suitable for automotive, industrial, or woodwork paint shops to dry paint, paint finishes, or adhesives quickly and save energy. Infrared dryers have easy positioning and operation, and they are suitable for shops of any size. Infrared rays have penetration capabilities to dry paint finishes or adhesives by curing them uniformly without chances of cracking or distortion. Infrared dryers have adjustable intensity and timers suitable for drying different thicknesses of paint finishes or adhesives uniformly. Infrared dryers are light in weight and durable to produce expert paint finish results.

Hot Air Dryer



The Hot Air Dryer is known to be an advanced drying machine, specifically designed to ensure reliability and efficiency in industrial and commercial applications. In addition to its efficient operations, it works with powerful and adjustable hot air to dry items quickly and uniformly. Moreover, it is compact in design and thus allows easy installation and operation, even in smaller spaces. Lastly, it is durable and thus provides long-lasting services and requires less maintenance. Moreover, it is easy to control and allows different speeds and temperatures depending on items to dry.

Pneumatic/Flash Dryer



The pneumatic flash dryer is an efficient drying system for quick evaporation of moisture from powders, granules, and other materials. It employs a high-speed air stream to suspend particles, thus enabling uniform drying in a compact system. Adjustable air temperature and rate control this drying system, ideal for different materials. Strong and durable, this system is low maintenance in an industrial setup. This system is best for drying in the food, chemical, and pharmaceutical sectors and is energy-efficient and reliable. It is easy to install on a production line, thus allowing a high throughput rate along with quality production.

Drum Dryers

The Drum Dryer is a highly efficient industrial dryer used for drying a liquid or slurry substance to a powder or flakes form. The drying machine consists of a heated rotating drum to facilitate quick drying of the substance. The drum dryer is appropriate for various sectors such as the food industry, chemical industry, and pharmaceutical industry, which have thick and delicate substances to be dried. The drying machine is easy to operate, energy-efficient, and requires less maintenance. Additionally, the drum dryer consumes less space in terms of storage and is made of materials offering durability and reliability.

Types of Drum Dryers

[Single Drum Dryer](#) | [Double Drum Dryer](#) | [Contact Drum Dryer](#)



Box Dryer

A Box Dryer is an efficient and compact drying machine used for controlled and uniform drying of different materials. It consists of an insulated box or chamber that allows temperature and air speed adjustment to ensure uniform drying. This machine can be used to dry farm produce, foods, chemicals, or any material that is heat sensitive. It is made from strong materials to ensure durability. It is user-friendly as it is easy to load and unload. Additionally, it is economical in terms of energy used. It is an efficient drying machine as it consumes less power.

Heat Pump Dryer

Heat pump dryer incorporate modern heat pump technology, which dries clothes quickly at relatively low temperatures. This helps preserve clothes while minimizing energy. Heat pump dryer reuse heated air in a closed cycle, eliminating the need to release it outside. As a result, clothes drying machines using this technology are highly energy-efficient. Heat pump dryer run noise-free, producing less heat. This makes them ideal for indoor drying. They support drying different materials, ranging from delicate clothes. Heat pump dryers are designed to serve people for a long time, combining energy efficiency, care, and convenience.

Types of Heat Pump Dryers

[Heat Pump Batch Tray Dryer](#) | [Heat Pump Continuous Tray Dryer](#)



Imperial Dryer



Imperial Dryer is an industrial drying machine that should be strong and efficient, constructed to offer reliable performance and consistent results. It features a heavy-duty construction that ensures long service life even in demanding operating conditions. The dryer is engineered to deliver uniform airflow and controlled temperature for effective and even drying. Its design is user-friendly in operation, monitoring, and maintenance. Energy-efficient components reduce operating costs while maintaining high productivity. Imperial Dryer is ideal for industries in search of dependable drying solutions with optimum performance and durability.

Coal/Briquette Dryer



A highly effective industrial device, the coal/briquette dryer lowers the moisture content of coal and briquettes for better fuel quality. It is constructed with a sturdy, heat-resistant structure to endure heavy-duty, continuous operation. Through regulated airflow and temperature distribution, the dryer guarantees consistent drying. Its effective use of heat contributes to reduced energy use and operating expenses. The machine ensures dependable performance with little downtime because it is simple to use and maintain. In fuel processing applications, a coal/briquette dryer is the perfect way to improve handling efficiency and calorific value.

Tunnel Dryer



A tunnel dryer is a continuous drying device that uses a temperature-controlled tunnel to remove moisture from products in an effective and consistent manner. To guarantee constant drying while preserving product quality, it makes use of regulated hot air circulation. The system provides consistent performance with little manual intervention, making it perfect for high-volume production. Long service life and dependable operation in demanding industrial environments are guaranteed by its sturdy construction. Drying parameters can be changed to accommodate various materials and moisture levels thanks to the tunnel's design. This device lowers operating expenses and energy consumption while increasing productivity.

Agitated Thin Film Dryer



A high-efficiency drying method for sticky, viscous, and heat-sensitive materials is an agitated thin film dryer. It works by using a high-speed agitator to spread the product into a thin, constantly renewed film on a heated surface. With a very short residence time and consistent heat transfer, this design guarantees quick moisture removal. The dryer reduces thermal deterioration while producing consistently high-quality products. Its small size and enclosed design enable easy cleaning and safe operation. The device is widely used for dependable and continuous drying in the food processing, pharmaceutical, and chemical industries.

Fluidised Bed Dryers



An effective drying method for quickly and evenly drying powders and granular materials is a fluidized bed dryer. It creates excellent air-material contact by suspending the product in a stream of heated air. This produces consistent moisture removal along with high heat and mass transfer efficiency. The dryer guarantees consistent product quality and shorter drying times. Its enclosed design facilitates simple process control and safe, dust-free operation. For dependable and continuous drying, fluidized bed dryers are widely used in the food, chemical, and pharmaceutical industries.

Types of Fluidised Bed Dryers

■ Vibratory Fluid Bed Dryer

■ Continuous Fluid Bed Dryer

■ FBD dryer

■ Vibro Fluid Bed Dryer

Tower Dryer



A tower dryer is a vertical drying machine designed for efficient, uniform drying of grains, seeds, or other bulk materials in a compact footprint. It uses controlled hot air circulation to remove moisture while preserving product quality. The vertical design allows continuous operation with high capacity and energy efficiency. Advanced temperature and airflow control ensure consistent drying and reduce the risk of overheating. The machine is built with durable materials for long service life and reliable performance. Tower dryers are ideal for commercial and industrial applications where space-saving, productivity, and consistent results are essential.

Rotary Dryers

Rotary dryers are robust industrial machines designed for efficient drying of bulk materials such as minerals, chemicals, sand, and biomass. They operate by rotating a cylindrical drum that gently tumbles the material while hot air flows through it, ensuring uniform moisture removal. The design allows for continuous processing and high throughput, making them suitable for large-scale operations. Rotary dryers are known for their durability, simple operation, and low maintenance requirements. They can be customized in size, materials of construction, and heating methods to suit specific process needs. This makes them a reliable and cost-effective solution for industrial drying applications.



Types of Rotary Dryers

- Biomass Dryer
- Coal Palm Slag Rotary Dryer
- Coal Rotary Dryer
- Coal Slime Rotary Dryers
- Coal Steam Type Rotary
- Coconut Coir Dryer
- Cow Dung Rotary Dryer
- Elephant Grass Dryer
- Mineral Slag Rotary Drum Dryer
- Organic Fertilizer Plant
- Rotary Drum Sawdust Dryer
- Sand Rotary Dryer
- Paddle Rotary Dryer
- Paddle Stirring Drum Rotary Dryer
- Poultry Manure Rotary Dryer
- Three Channel Drum Rotary Dryer

Tray Dryer

A tray dryer is a versatile industrial drying system designed for uniform and efficient moisture removal from solid materials. It consists of multiple trays arranged within a well-insulated chamber, allowing heated air to circulate evenly across the product surface. Controlled airflow and precise temperature regulation ensure consistent drying while preserving material quality. Tray dryers are widely used in pharmaceutical, food, chemical, and agricultural industries. They are suitable for drying powders, granules, flakes, and various solid components. Easy operation, energy efficiency, and reliable batch processing make tray dryers an ideal solution for controlled drying applications.



Fish Dryer

A fish dryer is a compact and efficient machine designed to remove moisture from fish using controlled heat and airflow, ensuring longer shelf life and improved product quality. It provides uniform drying to preserve natural flavor, color, and nutritional value. The machine is constructed with food-grade materials to maintain hygiene and safety standards. Easy temperature and time controls allow consistent and reliable drying results. Its energy-efficient design reduces operating costs while maximizing output. Ideal for small to large-scale processing, the fish dryer supports hygienic and commercial fish preservation.



Spiral Conveyor Dryer

A Spiral Conveyor Dryer is a compact, continuous drying system designed to efficiently remove moisture from a wide range of products while minimizing floor space. It uses a vertical spiral conveyor belt to move material through controlled zones of heated air for uniform and consistent drying. The system provides precise control of temperature, airflow, and residence time to ensure product quality and repeatability. Its enclosed design improves energy efficiency and reduces heat loss during operation. The dryer is suitable for food, chemical, pharmaceutical, and industrial applications. Built for reliability, it offers easy operation, low maintenance, and seamless integration into automated production lines.



Microwave Spices Dryer

The Microwave Spices Dryer is a compact, high-efficiency machine designed for rapid and uniform drying of spices using advanced microwave heating technology. It ensures consistent moisture removal while preserving natural color, aroma, flavor, and nutritional value. The system significantly reduces drying time compared to conventional methods, resulting in higher productivity and energy savings. Built with food-grade materials, it meets hygienic processing standards and is easy to operate and maintain. Adjustable power and temperature controls allow precise drying for different types of spices. This dryer is ideal for small to large-scale spice processing applications.



Food Dryer

This food dryer is a compact and efficient machine designed to remove moisture from fruits, vegetables, herbs, meats, and other foods while preserving their natural flavor and nutrients. It uses controlled heat and consistent airflow to ensure even and hygienic drying results. The durable construction makes it suitable for both household and light commercial use. Simple controls allow easy operation with adjustable temperature settings for different types of food. Energy-efficient performance helps reduce drying time while lowering power consumption. Ideal for extending shelf life, this food dryer is a reliable solution for healthy food preservation.



Grain Dryer

A grain dryer is a high-efficiency agricultural machine designed to reduce moisture content in harvested grains, ensuring safe storage and improved grain quality. It uses controlled heat and airflow to dry grains evenly while preventing cracking or overheating. Built with durable materials, the machine is suitable for continuous operation in demanding farm and commercial environments. Its adjustable temperature and airflow settings allow it to handle various grains such as wheat, corn, rice, and barley. The compact and modular design makes installation, operation, and maintenance simple. By improving drying speed and consistency, the grain dryer helps reduce post-harvest losses and increases overall productivity.



Freeze Dryer

A freeze dryer is a high-performance machine designed to preserve products by removing moisture through a low-temperature vacuum process. It maintains the original shape, color, flavor, and nutritional value of materials such as food, pharmaceuticals, and biological samples. The system works by freezing the product and then sublimating ice directly into vapor without passing through a liquid phase. Built with precise temperature and pressure controls, it ensures consistent and reliable drying results. The machine is constructed from durable, hygienic materials for long-term industrial use. Freeze dryers are widely used in food processing, laboratories, and pharmaceutical manufacturing for superior preservation and extended shelf life.



Coir Pith Dryer



A Coir Pith Dryer is a specialized machine designed to efficiently reduce the moisture content of coir pith for easy storage, transport, and further processing. It uses controlled heat and airflow to achieve uniform and fast drying without affecting the natural quality of the material. The machine is robustly constructed using high-grade materials to ensure long service life and reliable performance. It helps improve product consistency and prevents fungal growth during storage. The dryer is energy-efficient and suitable for continuous industrial operation. It is ideal for coir processing units, horticulture suppliers, and biomass handling industries.

Conveyorised Organic Waste Dryer



The Conveyorised Organic Waste Dryer is a continuous-processing machine designed to efficiently reduce moisture content in organic waste materials. It uses a controlled hot air circulation system combined with a moving conveyor to ensure uniform and consistent drying. The system is suitable for food waste, agricultural residues, and other biodegradable materials. Its enclosed design minimizes odor emission and heat loss while improving energy efficiency. The dryer is built with robust, corrosion-resistant materials for reliable long-term operation. This machine helps reduce waste volume, improves handling, and supports sustainable waste management solutions.

IR Dryer



The infrared dryer is a high-efficiency drying machine designed for fast, uniform drying using advanced infrared technology. It heats materials directly, reducing energy consumption and drying time compared to conventional dryers. Its compact design makes it ideal for limited spaces while maintaining powerful performance. The gentle infrared heat preserves product quality, color, and texture. Easy to operate and maintain, it ensures consistent results with minimal effort. Perfect for industrial, commercial, or laboratory applications requiring reliable, precise drying.

Slag Dryer



The Slag Dryer is a high-efficiency industrial machine designed to reduce moisture in slag, improving handling and transport. It features a robust rotating drum that ensures uniform drying and continuous operation. Its energy-efficient design minimizes fuel consumption while maximizing output. The system is built for durability, capable of handling high-temperature and abrasive materials. Easy to operate and maintain, it supports stable production in demanding environments. Ideal for steel plants and mining operations, it enhances productivity and material quality.

Pulp Packaging Dryer



The Pulp Packaging Dryer is a high-efficiency machine designed for drying molded pulp products such as trays, containers, and packaging materials. It features an advanced airflow and heating system that ensures uniform drying with minimal energy consumption. The durable construction supports continuous operation in industrial environments. Its compact design allows easy integration into existing production lines. The machine offers adjustable temperature and speed settings for versatile product handling. Ideal for eco-friendly packaging manufacturers, it enhances productivity while maintaining product quality.

Umbrella IR Dryer





The Umbrella IR Dryer is a high-efficiency drying machine designed for the pharmaceutical industry. It uses infrared (IR) radiation to provide uniform and rapid drying of powders, granules, and herbal materials without direct contact. Its compact, umbrella-shaped design ensures optimal heat distribution and energy efficiency. The dryer is easy to operate, maintain, and clean, meeting strict GMP standards. Adjustable temperature and drying time allow precise control for sensitive products. Ideal for labs and production units, it ensures consistent quality and faster drying cycles.

Spray Dryers



The Spray Dryers are high-efficiency industrial machine designed to transform liquid solutions, suspensions, or slurries into fine, uniform powders through rapid drying. It features a robust drying chamber, advanced atomization system, and precise temperature control to ensure consistent particle size and product quality. Ideal for food, pharmaceutical, and chemical applications, it maximizes yield while minimizing energy consumption. The unit offers easy operation, low maintenance, and hygienic design compliant with industry standards. Compact and versatile, it can handle small to large-scale production requirements. This Spray Dryer delivers reliable, continuous performance for efficient powder production.

Types of Spray Dryers

 Lab Spray Dryer  Pilot Spray Dryer

Sludge Dryers



The Sludge Dryer are high-efficiency industrial machine designed to reduce the moisture content of sludge, transforming it into a dry, manageable material. It features a robust rotating drum or belt system that ensures uniform drying and prevents clogging. The unit is equipped with advanced temperature and airflow controls for optimal energy efficiency and consistent output. Its compact design allows easy integration into existing wastewater treatment or industrial processing lines. Low maintenance requirements and durable construction ensure long-term, reliable operation. Ideal for municipal, industrial, and agricultural applications, it improves sludge handling, reduces disposal costs, and supports sustainable waste management.

Types of Sludge Dryers

 ETP Sludge Dryer  Paddle Sludge Dryer



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Industrial / Commercial Dehydrators

Industrial / Commercial Dehydrators are advanced drying machines designed to efficiently remove moisture from fruits, vegetables, herbs, spices, grains, nuts, meat, and other food or industrial products while preserving natural color, taste, aroma, and nutrients. Built for continuous and heavy-duty operation, these dehydrators use uniform hot air circulation with controlled temperature and airflow to ensure consistent drying across all trays or trolleys, delivering high-quality output with low energy consumption. Available in different capacities, they feature hygienic SS construction, insulated cabinet, digital temperature controller, adjustable airflow system, safety protections, and easy-to-clean design, making them ideal for food processing units, commercial kitchens, agro industries, and export-grade dehydration applications.

Types of Industrial / Commercial Dehydrators

- Tunnel Dehydrator
- Conveyorised Dehydrator
- Batch Type Dehydrator



Tunnel Dehydrator



A Tunnel Dehydrator is a continuous drying machine designed for efficient, large-scale removal of moisture from fruits, vegetables, herbs, and other food products. It operates by passing trays or conveyor belts of product through a temperature-controlled tunnel where hot air circulates evenly for uniform drying. The system ensures consistent product quality while preserving color, flavor, and nutritional value. Built for high throughput, it significantly reduces drying time and labor compared to batch dryers. The robust construction and adjustable airflow and temperature controls allow flexible operation for different products. Tunnel Dehydrators are widely used in food processing industries for reliable, energy-efficient, and hygienic drying solutions.

Conveyorised Dehydrator



A conveyorised dehydrator is an advanced continuous drying system designed for efficient and uniform moisture removal from food and agricultural products. It features a stainless-steel conveyor belt that moves materials steadily through controlled temperature and airflow zones. The system ensures consistent drying quality while preserving color, texture, and nutritional value. It is suitable for large-scale processing of fruits, vegetables, herbs, spices, and other heat-sensitive products. The machine is engineered for energy efficiency, hygienic operation, and easy cleaning. Its robust construction and automated controls make it ideal for high-capacity, industrial dehydration applications.

Batch Type Dehydrator



A Batch Type Dehydrator is a compact and efficient drying machine designed to remove moisture from a wide range of food and agricultural products in controlled batches. It uses uniform heat circulation to ensure consistent drying while preserving the natural color, flavor, and nutritional value of the material. The machine is ideal for drying fruits, vegetables, herbs, spices, and similar products. Its batch operation allows flexibility for different products and moisture levels. Built with durable materials, it ensures reliable performance and long service life. The dehydrator is easy to operate, energy efficient, and suitable for small to medium-scale processing units.

Industrial Ovens & Heating Systems



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Industrial Oven

Industrial Oven is a heavy-duty heating and drying machine designed for uniform and controlled heat processing of products such as powders, granules, trays, components, coatings, and industrial materials. It provides consistent temperature distribution through forced air circulation, ensuring efficient drying, curing, baking, preheating, or heat treatment with reliable quality output. Manufactured with robust insulated construction and available in MS/SS as per application, the oven features digital temperature control, adjustable airflow, safety interlocks, and easy loading tray/trolley options. Industrial ovens are widely used in food processing, pharmaceuticals, chemicals, automotive, electronics, rubber, and coating industries, offering energy-efficient performance, low maintenance, and customizable capacity and heating options (electric, steam, gas, or diesel).

Types of Industrial Ovens

- Batch Oven
- Electric Oven
- Conveyor Oven
- Plastic Annealing Oven
- Drum Heating Oven
- Flameproof Drum Heating Oven
- Drum Heater
- Curing Oven
- Electric Oven For HT/LT Motors
- Laboratory Oven
- Vacuum Oven
- Continuous Industrial Oven

Batch Oven



A batch oven is a robust industrial heating system designed to process materials in controlled batches with uniform and reliable temperature distribution. It is widely used for applications such as curing, drying, baking, preheating, and heat treatment across various industries. The oven features insulated chambers, precise temperature controls, and efficient airflow to ensure consistent product quality. Batch ovens can accommodate a wide range of part sizes and production volumes, offering flexibility for different manufacturing needs. They are available in electric, gas, or diesel heating options to suit specific operational requirements. Built for durability and energy efficiency, batch ovens deliver dependable performance in demanding industrial environments.

Electric Oven



This electric oven is a reliable and efficient cooking machine designed for consistent performance in commercial and domestic kitchens. It features precise temperature control to ensure even heat distribution for baking, roasting, and grilling. The durable construction supports long-term use with minimal maintenance. User-friendly controls allow simple operation and accurate setting adjustments. Its compact, space-saving design makes it suitable for various kitchen layouts. The oven delivers dependable results while maintaining energy-efficient operation.

Conveyor Oven



A conveyor oven is a high-efficiency commercial baking and cooking machine designed for consistent, high-volume food production. It uses a continuous moving belt to carry products through a controlled heating chamber, ensuring even cooking and uniform results. The oven is ideal for pizzas, bakery items, snacks, and prepared foods in commercial kitchens and food processing facilities. Advanced temperature controls and adjustable belt speeds allow precise cooking customization. Its compact, durable design supports continuous operation with minimal supervision. Conveyor ovens improve productivity, reduce labor costs, and deliver reliable performance for demanding food service environments.

Plastic Annealing Oven



A Plastic Annealing Oven is designed to relieve internal stresses in plastic components by applying controlled heat over a uniform temperature range. It ensures improved dimensional stability, reduced warping, and enhanced mechanical performance of molded or machined plastic parts. The oven features precise temperature control, even heat distribution, and programmable heating cycles for consistent results. Constructed with durable insulation and high-quality heating elements, it offers energy-efficient and reliable operation. It is suitable for a wide range of thermoplastics and industrial applications. The compact and robust design makes it ideal for continuous production environments.

Drum Heating Oven



The Drum Heating Oven is an industrial heating machine designed for uniform and efficient heating of drums containing liquids, powders, or semi-solid materials. It ensures consistent temperature control to improve material flow, melting, or viscosity reduction without overheating. Built with robust insulation and durable construction, it provides safe and energy-efficient operation in demanding industrial environments. The oven supports various drum sizes and can be customized for specific temperature ranges and heating requirements. User-friendly controls allow precise temperature setting and easy monitoring during operation. This machine is ideal for applications in chemical, pharmaceutical, food, and manufacturing industries.

Flameproof Drum Heating Oven



A Flameproof Drum Heating Oven is a robust industrial heating system designed for the safe and efficient heating of drums containing flammable or hazardous materials. It features an explosion-proof (flameproof) construction that prevents ignition risks in volatile environments. The oven ensures uniform and controlled heat distribution to maintain product quality and viscosity. Built with high-grade insulation and durable materials, it offers energy-efficient and reliable operation. Safety interlocks and temperature controls provide precise and secure performance. This oven is ideal for chemical, pharmaceutical, and oil industries requiring safe drum heating solutions.

Drum Heater



A drum heater is an efficient industrial heating solution designed to maintain or raise the temperature of liquids, oils, chemicals, and viscous materials stored in drums or barrels. It ensures uniform heat distribution to prevent material thickening, crystallization, or freezing. The heater is typically easy to install and remove, wrapping securely around standard metal or plastic drums. Durable insulation helps reduce heat loss and improves energy efficiency during operation. Drum heaters are available with adjustable temperature controls for precise heating requirements. They are widely used in chemical, food, pharmaceutical, and manufacturing industries for safe and reliable material handling.

Curing Oven



A curing oven is an industrial heating machine designed to apply controlled heat for curing, drying, or hardening coatings, adhesives, paints, and other materials. It ensures uniform temperature distribution for consistent and high-quality finishing results. Built with robust insulation and efficient heating systems, the oven minimizes energy consumption while maintaining precise temperature control. Curing ovens are available in various sizes and configurations to suit different production requirements. They are commonly used in automotive, powder coating, electronics, and manufacturing industries. The machine is engineered for reliable performance, safety, and long service life in continuous industrial operations.

Electric Oven For HT/LT Motors



An Electric Oven for HT/LT Motors is a robust industrial heating machine designed for controlled drying, curing, and preheating of high-tension and low-tension electric motors. It ensures uniform heat distribution through high-efficiency electric heaters and forced air circulation, preventing moisture retention and insulation damage. The oven is constructed with heavy-duty insulated panels to minimize heat loss and improve energy efficiency. A digital temperature controller allows precise regulation to suit different motor sizes and insulation classes. Safety features such as over-temperature protection and emergency cut-off enhance reliable operation. This oven is ideal for motor repair workshops, manufacturing units, and maintenance facilities requiring consistent and safe thermal processing.

Laboratory Oven



A laboratory oven is a precision heating device designed for controlled thermal processing in scientific, research, and industrial laboratories. It provides uniform temperature distribution for applications such as drying, curing, sterilizing, and heat treatment of samples. The oven features accurate digital temperature control to ensure reliable and repeatable results. High-quality insulation and robust construction enhance energy efficiency and long-term performance. Safety features such as over-temperature protection ensure safe operation during continuous use. Available in various capacities and temperature ranges, it is suitable for diverse laboratory applications.

Vacuum Oven



A vacuum oven is a precision heating machine designed for drying, curing, and heat treatment of materials under reduced pressure. By operating in a vacuum environment, it lowers the boiling point of solvents, enabling faster and more uniform drying at lower temperatures. The unit features a robust, corrosion-resistant chamber with airtight sealing to ensure stable vacuum conditions. Accurate digital temperature and vacuum controls provide consistent and repeatable results. Vacuum ovens are ideal for sensitive materials, powders, chemicals, and electronic components that may degrade under atmospheric heat. Their compact, energy-efficient design makes them suitable for laboratories, research centers, and industrial applications.

Continuous Industrial Oven



A continuous industrial oven is a high-performance thermal processing machine designed for uninterrupted production in industrial environments. It provides consistent and uniform heating through a controlled conveyor system that moves products steadily through multiple temperature zones. Built with heavy-duty insulation and robust materials, it ensures energy efficiency and long-term reliability. The oven supports precise temperature control for curing, drying, baking, or heat treatment applications. Its continuous operation increases throughput while reducing handling time and labor costs. This system is ideal for high-volume manufacturing processes requiring consistent quality and repeatable results.



Industrial Furnace

Industrial Furnace is a high-temperature heavy-duty heating system designed for metal and industrial heat treatment processes such as annealing, hardening, tempering, stress relieving, forging, melting, and sintering. Built with a robust insulated refractory lining and strong fabricated structure, it delivers uniform heat distribution and precise temperature control to ensure consistent processing and superior material strength. The furnace is available in various designs and capacities with electric, gas, oil, or diesel heating options, and can be supplied with advanced PID temperature controllers, thermocouple sensors, safety interlocks, and automation features. Industrial furnaces are widely used in foundries, steel plants, automotive, engineering, and manufacturing industries for reliable continuous or batch high-temperature operations.

Types of Industrial Furnace

- Batch Furnace
- Industrial Electric Furnace
- Heat Treatment Furnaces
- Continuous Furnaces
- High-Temperature Furnaces
- Calcination Furnaces
- Continuous & Batch Furnaces
- Atmosphere Controlled Furnaces
- Roasting Furnaces
- Melting & Smelting Furnaces
- Co2 Autoclave
- Thermal Processing Furnaces
- Special Application Furnaces
- Energy-Efficient & Hybrid Furnaces



Batch Furnace



A Batch Furnace is a robust industrial heating system designed for precise thermal processing of components in controlled batches. It is widely used for heat treatment processes such as annealing, hardening, tempering, stress relieving, and aging across various industries. The furnace features a heavy-duty insulated chamber that ensures uniform temperature distribution and high energy efficiency. Advanced temperature control systems provide accurate and repeatable heating cycles for consistent product quality. Batch furnaces can be configured for electric, gas, or oil firing and customized to handle different load sizes and materials. Their durable construction and flexible operation make them ideal for both small-scale and high-value production applications.

Industrial Electric Furnace



An industrial electric furnace is a high-efficiency heating machine designed for precise temperature control in metal processing, heat treatment, melting, and material testing applications. It operates using electric heating elements to provide uniform and clean heat without combustion, ensuring consistent product quality. The furnace is constructed with robust insulated chambers for high thermal efficiency and minimal heat loss. Advanced digital controllers allow accurate temperature regulation and programmable heating cycles. Its compact, durable design supports continuous operation in demanding industrial environments. Electric furnaces are energy-efficient, environmentally friendly, and suitable for a wide range of industrial applications.

Heat Treatment Furnaces



Heat treatment furnaces are industrial machines used to heat metals and alloys to precise temperatures to achieve required mechanical properties. They are used for processes such as hardening, annealing, tempering, and stress relieving. These furnaces provide uniform heating and accurate temperature control for consistent results. Built with robust insulation and high-quality heating elements, they ensure reliable and energy-efficient operation. Available in various sizes and temperature ranges, they are widely used in automotive, aerospace, and heavy engineering industries.

Types of Heat Treatment Furnaces

Continuous Furnace



Continuous furnace is a robust industrial heating systems designed for uninterrupted processing of materials at high and controlled temperatures. They allow products to move continuously through heating, soaking, and cooling zones, ensuring consistent quality and high production efficiency. These furnaces are widely used in heat treatment, sintering, annealing, and metal processing applications. Advanced temperature control systems provide precise and uniform heat distribution throughout the furnace length. Their robust construction supports long-term operation in demanding industrial environments. Continuous furnaces help reduce cycle time, improve energy efficiency, and increase overall production throughput.

High-Temperature Furnaces



High-temperature furnaces are industrial machines designed for advanced thermal processing at extremely high temperatures. They are used for sintering, calcination, melting, heat treatment, and material research. These furnaces offer precise temperature control and uniform heat distribution for consistent results. Built with high-grade insulation and durable heating elements, they ensure reliable and energy-efficient operation. Available in various chamber sizes and temperature ranges, they are widely used in ceramics, metallurgy, laboratories, and advanced manufacturing industries.

Types of High-Temperature Furnaces

- Electric High-Temperature Furnaces
- Gas-Fired High-Temperature Furnaces
- Laboratory & Industrial High-Temp Furnaces

Calcination Furnaces



Calcination furnaces are industrial machines designed to heat materials to high temperatures to remove moisture, volatile substances, and impurities through thermal decomposition. They are widely used for processing minerals, chemicals, ceramics, and refractory materials. These furnaces provide uniform heating and precise temperature control for consistent and repeatable results. Built with robust refractory insulation and durable heating systems, they ensure reliable and energy-efficient operation. Calcination furnaces are available in different capacities, temperature ranges, and designs to suit various industrial applications.

Types of Calcination Furnaces

- Rotary Calciner
- Batch Calciner

Continuous & Batch Furnaces



Continuous and batch furnaces are industrial heat processing machines designed to handle a wide range of thermal treatment applications. Continuous furnaces provide uninterrupted processing for high-volume production, while batch furnaces offer flexibility for varied loads and processes. They are used for heat treatment, drying, sintering, annealing, and tempering of metals and materials. These furnaces ensure uniform heating, precise temperature control, and consistent product quality. Built with robust construction and energy-efficient insulation, they are available in different sizes and temperature ranges to suit industrial requirements.

Types of Continuous & Batch Furnaces

| Batch Type Furnaces **|** Continuous Belt / Roller Hearth Furnaces **|** Bogie Hearth Furnaces

Atmosphere Controlled Furnaces



Atmosphere controlled furnaces are industrial heat treatment machines that use a controlled gas environment for precise thermal processing. They are used for carburizing, nitriding, annealing, sintering, and brazing to achieve specific material properties. These furnaces ensure uniform heating and accurate temperature control with gases such as nitrogen, hydrogen, or argon. Built with sealed chambers and high-quality insulation, they provide reliable and energy-efficient operation. Available in batch and continuous designs, they are widely used in automotive, aerospace, and advanced manufacturing industries.

Types of Atmosphere Controlled Furnaces

| Inert Gas Furnaces **|** Vacuum Furnaces **|** Controlled & Protective Atmosphere Furnaces

Roasting Furnace



Roasting furnace is a industrial thermal processing machines used to heat materials in the presence of air or controlled oxygen for chemical and physical transformation. They are commonly used in mineral processing, metallurgy, and chemical industries for oxidation and impurity removal. These furnaces provide uniform heating and controlled temperature for consistent processing results. Built with robust refractory lining and durable heating systems, they ensure reliable and energy-efficient operation. Roasting furnaces are available in various capacities and temperature ranges to suit different industrial applications.

Co2 Autoclave



A CO₂ autoclave is an advanced, high-performance sterilization and processing system engineered to operate under precisely controlled carbon dioxide pressure and temperature, delivering exceptional accuracy and consistency for demanding applications. It is designed to maintain uniform conditions throughout the entire chamber, ensuring reliable and repeatable results while protecting sensitive materials. Widely used in laboratory, pharmaceutical, and industrial environments, the system is constructed from high-grade stainless steel to provide superior durability, enhanced safety, corrosion resistance, and effortless cleaning. Equipped with sophisticated control technology, the CO₂ autoclave allows precise regulation of pressure, temperature, and cycle time, enabling optimized process control, consistent outcomes, and dependable long-term operation.

Thermal Processing Furnace



A Thermal Processing Furnace is a high-performance system engineered for demanding high-temperature heat treatment applications that require exceptional precision, stability, and uniform heat distribution. It is widely used for critical processes such as sintering, annealing, calcination, and advanced material testing in both industrial and laboratory settings. Designed with robust thermal insulation and premium-quality heating elements, the furnace delivers energy-efficient operation while maintaining consistent and reliable temperature performance over extended cycles. Advanced, user-friendly control systems enable precise temperature regulation, enhanced operational safety, and highly repeatable processing results, making it an ideal solution for accurate and dependable thermal processing.

Special Application Furnaces



Special Application Furnaces are custom-engineered thermal systems designed to handle specialized heat treatment processes beyond standard furnace operations. They are widely used for controlled atmosphere processing, vacuum heat treatment, and material-specific thermal cycles in demanding industries. These furnaces feature advanced insulation materials and precision heating elements to ensure high thermal efficiency and uniform temperature distribution. Custom-designed chambers are built to match specific process requirements, material types, and production volumes. Intelligent control systems provide accurate temperature regulation, programmable cycles, and real-time monitoring for consistent results. Integrated safety features and robust construction ensure reliable, long-term operation under rigorous industrial conditions.

Energy-Efficient & Hybrid Furnaces



Energy-Efficient & Hybrid Furnaces are engineered to deliver high-performance thermal processing while significantly reducing energy consumption and operating costs. These systems integrate advanced insulation technologies, optimized heating designs, and hybrid energy sources to achieve maximum efficiency and sustainability. Designed for both industrial and laboratory environments, they support a wide range of applications that demand reliable and environmentally responsible operation. Intelligent control systems provide precise temperature regulation, programmable process control, and real-time monitoring. Enhanced safety features and stable thermal performance ensure consistent, high-quality results. Together, these capabilities make Energy-Efficient & Hybrid Furnaces an ideal solution for modern, cost-effective thermal processing needs.

Microwave, RF & Plasma Systems



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Microwave Systems

Microwave Systems are advanced industrial heating and drying solutions designed to deliver fast, uniform, and energy-efficient processing using controlled microwave energy. These systems rapidly heat materials from inside-out, reducing processing time and improving product quality for applications such as drying, curing, pasteurization, sterilization, moisture removal, and thermal treatment. Built with robust industrial construction, high-efficiency magnetrons, precise power control, and PLC-based automation, microwave systems ensure consistent results with minimal heat loss and reduced operating cost. Suitable for food, pharma, chemicals, ceramics, rubber, and composite industries, they are available in batch or continuous conveyor models with customizable chamber size, microwave power, temperature monitoring, safety interlocks, and shielding for safe operation.

Types of Microwave Systems

- Microwave Drying System
- Microwave Heating & Preheating System
- Microwave Vacuum Drying (MVD) System
- Microwave Reactors (Chemical & Materials)
- Continuous Microwave Conveyor Systems
- Batch Microwave Processing Systems
- Hybrid Microwave-Conventional Systems
- Microwave/Infrared Rubber Vulcanization Line
- Microwave Solid Tyre Preheating Systems
- Microwave Chemical Vapour Deposition System
- Microwave Vacuum Technology
- Microwave Sterilisation System
- Microwave Chamber Dryer
- Microwave Chamber Furnace
- Microwave Pyrolysis Rotary Furnace Oven

Microwave Drying System



The Microwave Drying System is an advanced industrial solution designed for fast, uniform, and energy-efficient moisture removal from a wide range of materials. It uses controlled microwave energy to heat products volumetrically, ensuring consistent drying from the inside out without overheating the surface. This system significantly reduces drying time compared to conventional methods while preserving product quality, color, and structure. Built with robust components and precise power control, it offers reliable operation and repeatable results. Ideal for food, pharmaceuticals, chemicals, and industrial applications, it enhances productivity while lowering operating costs.

Microwave Heating & Preheating System



Microwave Heating & Preheating Systems are designed to deliver rapid, uniform, and energy-efficient heating for a wide range of industrial processes. By using volumetric microwave energy, materials are heated evenly from the core to the surface, reducing processing time and improving consistency. These systems provide precise temperature control, minimizing thermal stress and product damage. Compared to conventional heating methods, they offer higher efficiency and lower operating costs. Ideal for food, chemical, rubber, pharmaceutical, and composite applications, they enhance process speed and overall production performance.

Microwave Vacuum Drying System



Microwave Vacuum Drying (MVD) Systems combine microwave energy with vacuum technology to achieve fast, low-temperature, and uniform drying of heat-sensitive materials. The vacuum environment lowers the boiling point of moisture, allowing efficient drying while preserving product quality, color, and nutrients. Volumetric microwave heating ensures consistent moisture removal throughout the product. These systems significantly reduce drying time and energy consumption compared to conventional methods. MVD Systems are ideal for food, pharmaceutical, chemical, and specialty material applications requiring gentle and high-quality drying.

Microwave Reactors (Chemical & Materials)



Microwave Reactors for Chemical and Materials processing provide precise, rapid, and uniform heating to accelerate reactions and improve process efficiency. Using volumetric microwave energy, they ensure consistent temperature distribution and enhanced reaction control. These reactors reduce reaction times, increase yields, and improve reproducibility compared to conventional heating methods. Designed with advanced safety and control features, they support both batch and continuous processing. Ideal for chemical synthesis, materials development, and R&D applications, they offer a reliable and scalable solution for modern processing needs.

Continuous Microwave Conveyor System



The Continuous Microwave Conveyor System is designed for high-throughput, uniform, and energy-efficient processing of materials in a continuous flow. It uses controlled microwave energy to heat, dry, or cure products evenly as they move through the conveyor chamber. The system ensures consistent processing results while significantly reducing cycle time compared to conventional methods. Built for industrial reliability, it features adjustable speed and power control for precise process optimization. Ideal for food, chemical, pharmaceutical, and industrial applications, it enhances productivity and operational efficiency.

Batch Microwave Processing System



The Batch Microwave Processing System is a compact, high-performance machine designed for efficient heating, drying, curing, and material processing using controlled microwave energy. It delivers uniform and rapid processing by penetrating materials directly, significantly reducing cycle times compared to conventional heating methods. The system features precise control of power, temperature, and processing time to ensure consistent and repeatable results. Built with robust industrial-grade components, it supports safe and reliable operation across a wide range of applications. Its space-saving batch design makes it ideal for laboratories, pilot plants, and small- to medium-scale production environments.

Hybrid Microwave Conventional System



Hybrid Microwave Conventional Systems combine microwave energy with traditional heating methods to deliver enhanced processing efficiency and flexibility. This dual-heating approach ensures rapid internal heating from microwaves while maintaining uniform surface temperature through conventional heat sources. The system improves process control, product quality, and energy efficiency across a wide range of materials. Designed for industrial reliability, it allows precise adjustment of microwave power and conventional heating parameters. Ideal for drying, curing, sintering, and thermal processing, it supports both batch and continuous operations.

Microwave/Infrared Rubber Vulcanization Line



The Microwave/Infrared Rubber Vulcanization Line is an advanced processing system designed for fast, uniform, and energy-efficient rubber curing. It uses microwave energy for rapid internal heating combined with infrared heaters to ensure controlled surface temperature and complete vulcanization. This hybrid approach delivers consistent product quality, improved mechanical properties, and reduced processing time. The system is engineered for continuous operation with precise control of temperature, speed, and power levels. Ideal for hoses, profiles, and molded rubber products, it enhances productivity while minimizing energy consumption.

Microwave Solid Tyre Preheating System



The Microwave Solid Tyre Preheating System is designed to provide rapid, uniform heating of solid tyres prior to molding or vulcanization. Microwave energy penetrates deep into the tyre, reducing temperature gradients and significantly shortening preheating time. The system improves process consistency, bonding quality, and overall production efficiency. Built for heavy-duty industrial use, it features precise temperature and power control for safe and repeatable operation. Its compact and robust design makes it ideal for high-throughput tyre manufacturing environments.

Microwave Chemical Vapour Deposition System



The Microwave Chemical Vapour Deposition (CVD) System is a high-precision platform designed for uniform and efficient thin-film and coating deposition. It uses microwave-generated plasma to activate chemical reactions, enabling high-quality film growth at lower temperatures. The system offers excellent control over process parameters such as gas flow, pressure, and microwave power for repeatable results. Its advanced design supports a wide range of materials, including ceramics, semiconductors, and advanced coatings. Ideal for research and industrial applications, it delivers superior film purity, adhesion, and consistency.

Microwave Vacuum Technology



Microwave Vacuum Technology combines microwave energy with controlled vacuum conditions to achieve fast, uniform, and low-temperature processing of materials. Operating under vacuum enhances microwave efficiency while minimizing oxidation, thermal degradation, and moisture-related defects. The system enables precise control of temperature, pressure, and power for consistent and repeatable results. It is ideal for drying, degassing, sintering, and advanced material processing applications. Designed for industrial and research use, this technology improves product quality while reducing processing time and energy consumption.

Microwave Sterilisation System



The Microwave Sterilisation System provides fast, effective, and uniform sterilisation using controlled microwave energy. It penetrates materials directly to eliminate microorganisms without excessive surface overheating. The system ensures reliable performance through precise control of time, temperature, and power levels. Designed for safe and efficient operation, it supports a wide range of medical, pharmaceutical, and laboratory applications. Its compact, automated design improves throughput while reducing energy consumption and chemical usage.

Microwave Chamber Dryer



The Microwave Chamber Dryer is designed for fast, uniform, and energy-efficient drying of a wide range of materials. Microwave energy heats moisture directly within the product, significantly reducing drying time and preventing surface hardening. The system offers precise control of power, temperature, and airflow to ensure consistent drying results. Its enclosed chamber design supports safe operation and uniform batch processing. Ideal for industrial, pharmaceutical, and research applications, it delivers high product quality with reduced energy consumption.

Microwave Chamber Furnace



The Microwave Chamber Furnace is an advanced thermal processing system designed for rapid and uniform heating using microwave energy. It enables efficient sintering, calcination, and heat treatment by heating materials volumetrically rather than from the surface inward. The furnace provides precise control of temperature, power, and processing time for consistent and repeatable results. Its insulated chamber design ensures safe operation and high thermal efficiency. Ideal for ceramics, advanced materials, and research applications, it significantly reduces processing time and energy consumption.

Microwave Pyrolysis Rotary Furnace Oven



The Microwave Pyrolysis Rotary Furnace Oven is a high-efficiency thermal processing system designed for continuous pyrolysis of materials under controlled conditions. It combines microwave energy with a rotating furnace to ensure uniform heating and consistent material residence time. The system enables rapid decomposition at lower operating temperatures while improving energy efficiency. Precise control of rotation speed, temperature, and microwave power ensures stable and repeatable processing. Ideal for waste treatment, material recovery, and advanced thermal applications, it delivers high throughput with reduced emissions.



Radio Frequency (RF) Systems

Radio Frequency (RF) Systems are high-efficiency industrial heating and drying machines designed to remove moisture quickly and uniformly from thick, dense, or heat-sensitive materials using controlled RF electromagnetic energy. Unlike conventional heating, RF technology heats the product internally throughout its depth, ensuring faster processing, consistent moisture reduction, improved product quality, and minimal surface overheating. These systems are widely used for drying, curing, bonding, sterilization, and moisture conditioning in applications such as wood, paper, textiles, foam, ceramics, food processing, and pharmaceutical materials. Built with heavy-duty construction and advanced control technology, RF systems feature precise power regulation, digital/PLC automation, temperature and moisture monitoring, safety interlocks, and customizable batch or continuous models for reliable industrial operation.

Types of Radio Frequency (RF) Systems

- RF Batch Dryer
- RF Continuous Dryer



RF Batch Dryer



The RF Batch Dryer is an advanced and dependable drying system designed to achieve uniform and efficient moisture removal using radio frequency energy in controlled batch operations. By heating materials volumetrically, it ensures consistent internal drying while preventing surface damage, scorching, or localized overheating. The system provides precise control over power levels, temperature, and processing time, enabling highly repeatable and optimized drying results. Featuring a fully enclosed batch chamber, it supports safe, flexible operation across a wide range of product types and sizes. Ideal for applications involving wood, textiles, ceramics, and other industrial materials, the RF Batch Dryer enhances drying efficiency, reduces processing time, and significantly improves overall product quality.

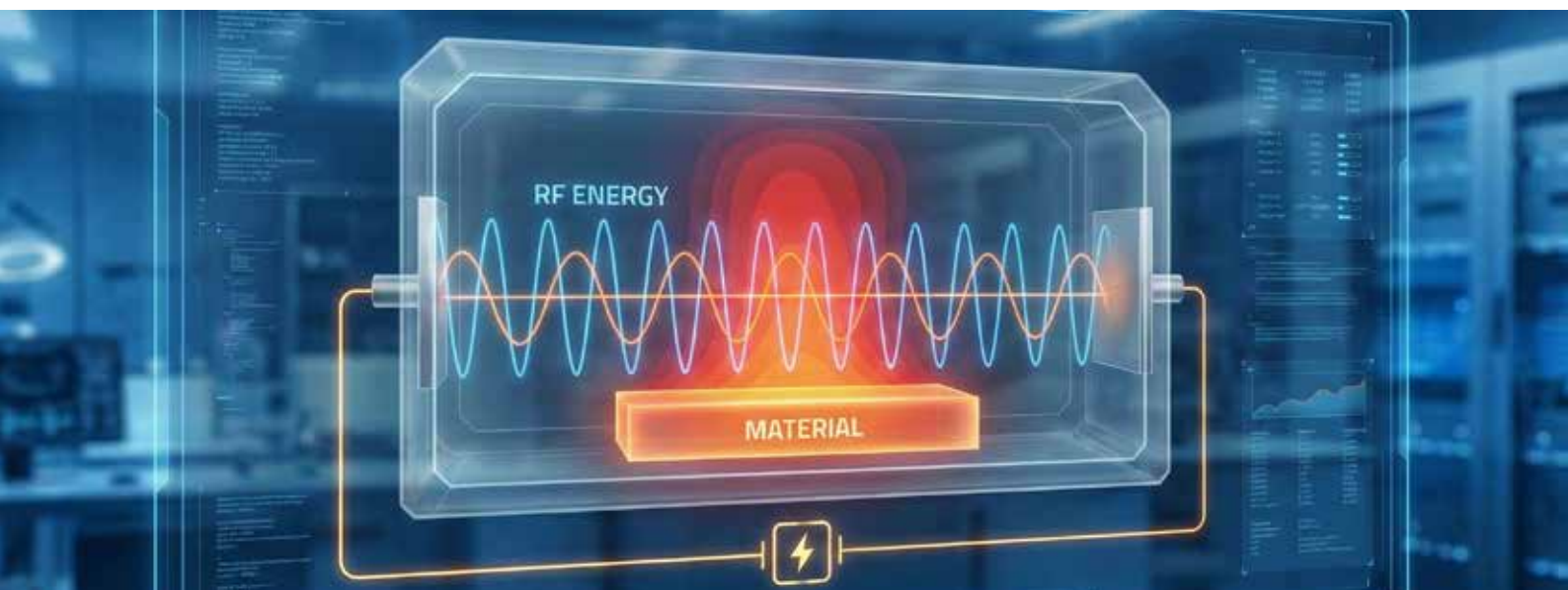
RF Continuous Dryer



The RF Continuous Dryer is an efficient industrial drying system designed for uniform and continuous moisture removal using radio frequency energy. It heats materials volumetrically, ensuring consistent drying throughout the product thickness without surface overheating. The continuous conveyor-based design supports high throughput and stable production flow. Precise control of power, temperature, and line speed ensures repeatable and high-quality results. Ideal for textiles, wood, paper, food, and industrial materials, it reduces drying time while improving energy efficiency.

Types of Continuous Dryer

RF Moisture Equalization Systems RF Preheating Systems RF Post-Curing Systems





Plasma Systems

Plasma Systems are advanced industrial processing machines designed to perform high-precision surface treatment, cleaning, activation, coating, and sterilization using controlled ionized gas (plasma) technology. These systems modify material surfaces at a microscopic level without damaging the core structure, improving adhesion, wettability, bonding strength, and product performance. Plasma systems are widely used in electronics, automotive, medical devices, packaging, textiles, polymers, and advanced manufacturing industries for applications such as surface activation before printing/coating, contamination removal, plasma etching, and functional coating. Built with robust industrial design and smart automation, they feature programmable power control, vacuum or atmospheric configurations, process monitoring, safety interlocks, and customizable chamber sizes for reliable, repeatable, and eco-friendly operation.

Types of Plasma Systems

- Thermal Plasma System
- Microwave Plasma System
- Microwave Air Jet Plasma
- Plasma Surface Treatment System
- Plasma Cleaning & Activation System
- Plasma Pyrolysis & Waste Treatment System



Thermal Plasma System



The Thermal Plasma System is a high-energy processing solution designed for applications requiring extremely high temperatures and rapid material transformation. It generates a dense plasma stream capable of melting, coating, or decomposing materials with exceptional efficiency. The system offers precise control of power, gas flow, and process parameters for consistent and repeatable results. Engineered for robust industrial operation, it supports both batch and continuous processing. Ideal for advanced materials, metallurgy, and environmental applications, it delivers high performance with reliable process control.

Microwave Plasma System



The Microwave Plasma System is an advanced processing platform that uses microwave energy to generate stable, high-density plasma for precise material treatment. It enables efficient surface modification, coating, and chemical reactions at controlled temperatures. The system offers accurate control of plasma power, gas composition, and process conditions for repeatable results. Its clean, electrode-free design minimizes contamination and maintenance requirements. Ideal for research and industrial applications, it delivers high efficiency, uniform processing, and superior product quality.

Microwave Air Jet Plasma



The Microwave Air Jet Plasma system generates a stable, high-energy plasma jet using microwave power and ambient air as the working gas. It enables efficient surface activation, cleaning, and functionalization without the need for costly process gases. The system provides precise control of plasma intensity and treatment parameters for consistent results. Its electrode-free design ensures low maintenance and reliable operation. Ideal for industrial and research applications, it delivers fast, uniform treatment with high energy efficiency.

Plasma Surface Treatment System



The Plasma Surface Treatment System is an advanced industrial machine designed to modify and activate material surfaces for improved adhesion, coating, printing, and bonding performance. It uses controlled plasma generated from ionized gas to effectively remove contaminants and increase surface energy without damaging the substrate. The system is suitable for a wide range of materials, including plastics, metals, glass, and composites. With precise process control and uniform treatment, it ensures consistent and repeatable surface quality in production environments. Its compact, robust design allows easy integration into automated manufacturing lines. The Plasma Surface Treatment System delivers efficient, eco-friendly, and reliable surface preparation for high-performance industrial applications.

Plasma Cleaning & Activation System



The Plasma Cleaning & Activation System is a high-performance solution designed to clean, activate, and prepare material surfaces for enhanced adhesion and coating quality. It utilizes controlled plasma technology to remove organic contaminants, oils, and residues at a microscopic level without the use of chemicals. The process increases surface energy, improving wettability and bonding strength for subsequent processes such as printing, painting, or gluing. Suitable for plastics, metals, glass, and composite materials, the system ensures uniform and repeatable treatment results. Its efficient and environmentally friendly operation supports modern manufacturing standards. The compact and robust design allows seamless integration into automated production lines.

Plasma Pyrolysis & Waste Treatment System



Plasma Pyrolysis & Waste Treatment System is an advanced thermal processing solution designed for the safe and efficient treatment of hazardous and non-hazardous waste. It uses high-temperature plasma to break down waste materials into basic molecular components, significantly reducing waste volume and neutralizing harmful substances. The process converts waste into useful byproducts such as syngas and inert vitrified slag. With minimal emissions and high destruction efficiency, it meets strict environmental regulations. The system supports a wide range of waste types, including medical, industrial, and chemical waste. Its robust, automated design ensures reliable operation for sustainable waste management applications.



Advanced & Precision Energy Systems

Advanced & Precision Energy Systems are next-generation industrial solutions designed to deliver highly controlled, efficient, and repeatable energy application for specialized processes such as heating, drying, curing, sterilization, surface treatment, and material modification. These systems utilize modern technologies including microwave, radio frequency (RF), plasma, infrared, induction, and hybrid energy methods to achieve precise temperature control, uniform processing, reduced cycle time, and improved product quality with minimal energy loss. Built for demanding industrial environments, they feature robust construction, PLC/SCADA automation, real-time monitoring, safety interlocks, and customizable configurations to suit a wide range of industries such as food processing, pharmaceuticals, electronics, automotive, chemicals, textiles, composites, and advanced materials manufacturing.

Types of Advanced & Precision Energy Systems

- Localized Microwave Heating (LMH) System
- Selective & Targeted Heating System



Localized Microwave Heating (LMH) System



The Localized Microwave Heating (LMH) System is an advanced, high-precision heating solution engineered for targeted thermal processing where accuracy, speed, and efficiency are critical. By applying focused microwave energy, it rapidly heats specific areas of a material without impacting surrounding regions, ensuring controlled and localized temperature rise. The system delivers fast response times, uniform internal heating, and significantly improved energy efficiency compared to conventional heating methods. Ideal for applications such as curing, drying, bonding, and specialized material processing, LMH minimizes thermal stress and reduces process variability through controlled, non-contact heating. Its compact and modular design allows seamless integration into automated industrial production lines, making it a flexible and reliable solution for modern manufacturing environments.

Selective & Targeted Heating System



The Selective & Targeted Heating System is an advanced precision thermal processing solution engineered to deliver heat exactly where it is required, ensuring maximum efficiency and control. By applying controlled, localized heating to specific areas, it significantly reduces energy consumption while protecting surrounding components from unwanted thermal exposure. The system provides rapid response times, uniform heat distribution, and high process repeatability, making it ideal for demanding applications such as bonding, curing, drying, and assembly operations. Its non-contact heating approach minimizes thermal stress, enhances product quality, and improves overall process consistency. With a compact, modular design, the system integrates seamlessly into automated manufacturing environments, offering flexibility, reliability, and optimized performance for modern production lines.



Industry-Specific System

Industry-Specific System Types are customized plasma and advanced processing solutions engineered to meet the unique requirements of different industrial sectors. These systems are tailored for applications in automotive, electronics, medical, aerospace, packaging, and environmental industries. Each system is designed to address specific material, process, and regulatory needs. They deliver optimized performance, reliability, and consistent results for targeted applications. Modular configurations allow flexibility and scalability based on production demands. Industry-Specific System Types ensure efficient integration and high-value performance across diverse manufacturing environments.

Types of Industry-Specific System

- Food & Nutraceutical Processing System
- Chemical & Polymer Processing System
- Minerals, Ceramics & Metallurgical System
- Rubber, Tyre & Composite Processing System
- Electronics, Battery & Advanced Material System



Food & Nutraceutical Processing System



The Food & Nutraceutical Processing System is a specialized solution designed to ensure safe, efficient, and high-quality processing of food and nutraceutical products. It supports precise handling, treatment, and processing to preserve nutritional value and product integrity. The system is engineered to meet strict hygiene, safety, and regulatory standards. It enables consistent process control for applications such as sterilization, drying, extraction, and functional ingredient processing. Energy-efficient operation helps reduce processing costs while maintaining product quality. Its robust, sanitary design allows seamless integration into modern food and nutraceutical production lines.

Chemical & Polymer Processing System



The Chemical & Polymer Processing System is an advanced industrial solution designed for efficient and controlled processing of chemicals and polymer-based materials. It enables precise thermal, surface, or reactive treatment to enhance material properties and process consistency. The system supports applications such as polymer modification, compounding, curing, and specialty chemical processing. Engineered for high reliability, it meets stringent safety and regulatory requirements. Energy-efficient operation ensures optimized performance with reduced operational costs. Its modular, robust design allows seamless integration into existing chemical and polymer production environments.

Minerals, Ceramics & Metallurgical System



The Minerals, Ceramics & Metallurgical System is a robust industrial solution designed for high-temperature processing and treatment of mineral, ceramic, and metal materials. It enables precise thermal and surface modification to improve material strength, purity, and performance. The system supports applications such as sintering, calcination, melting, and surface treatment. Engineered for demanding operating conditions, it delivers consistent and reliable results. Energy-efficient operation helps optimize production costs while maintaining process stability. Its durable, modular design allows easy integration into heavy industrial and metallurgical production lines.

Rubber, Tyre & Composite Processing System



The Rubber, Tyre & Composite Processing System is a specialized industrial solution designed to enhance the processing and performance of rubber, tire, and composite materials. It enables precise surface treatment, heating, and material modification to improve bonding, durability, and product quality. The system supports applications such as adhesion enhancement, curing, reinforcement treatment, and composite fabrication. Engineered for consistent and repeatable results, it meets demanding production requirements. Energy-efficient operation helps reduce processing time and operational costs. Its robust, modular design allows seamless integration into automated rubber, tire, and composite manufacturing lines.

Electronics, Battery & Advanced Material System



The Electronics, Battery & Advanced Material System is a precision-engineered solution designed to meet the high-performance demands of modern electronic and energy storage manufacturing. It enables controlled surface treatment, heating, and material processing to enhance conductivity, adhesion, and material stability. The system supports applications in semiconductor components, battery electrodes, and advanced functional materials. High process accuracy ensures consistent quality and improved product reliability. Energy-efficient operation supports clean and sustainable manufacturing practices. Its compact, modular design allows seamless integration into automated electronics and battery production lines.



R&D, Pilot & Scale-Up Systems

R&D, Pilot & Scale-Up Systems are specialized industrial development platforms designed to support product innovation, process optimization, and smooth transition from laboratory trials to full-scale production. These systems enable controlled testing of advanced heating, drying, curing, sterilization, and material processing technologies with high accuracy, repeatability, and flexibility. Built with modular design and precision instrumentation, they offer adjustable process parameters, data logging, real-time monitoring, and PLC/HMI automation to validate performance, improve efficiency, and ensure consistent quality before commercial deployment. Ideal for research centers, universities, and industrial R&D labs, these systems help reduce development time, minimize risk, and accelerate successful scale-up for food, pharma, chemicals, electronics, ceramics, composites, and advanced material applications.

Types of R&D, Pilot & Scale-Up Systems

- Laboratory Microwave & RF Unit
- Pilot-Scale Processing System
- Commercial Scale-Up Plant



Laboratory Microwave & RF Unit



Laboratory Microwave & RF Units are compact, high-precision systems designed for research, testing, and small-scale material processing applications. They provide controlled microwave and radio-frequency energy for heating, drying, synthesis, and experimental studies. The units offer accurate power control and repeatable results for consistent laboratory performance. Suitable for a wide range of materials and research fields, they support flexible experimental setups. Energy-efficient and safe operation meets laboratory standards and requirements. Their compact, user-friendly design makes them ideal for academic, R&D, and pilot-scale environments.

Pilot-Scale Processing System



Pilot-Scale Processing Systems are advanced solutions designed to bridge the gap between laboratory research and full-scale industrial production. They enable controlled testing, validation, and optimization of processes under real production conditions. The systems support a wide range of applications, including material processing, thermal treatment, and surface modification. Engineered for flexibility, they allow easy adjustment of process parameters and configurations. Reliable and energy-efficient operation ensures accurate performance data for scale-up decisions. Their modular design supports seamless transition from pilot trials to commercial manufacturing.

Commercial Scale-Up Plant



Commercial Scale-Up Plants are fully engineered industrial solutions designed to transition proven processes into high-capacity production environments. They enable reliable, continuous operation with consistent product quality and process stability. The plants are customized to meet specific throughput, material, and regulatory requirements. Advanced automation and control systems ensure efficient, safe, and repeatable performance. Energy-efficient design helps reduce operating costs while maximizing output. Commercial Scale-Up Plants provide a robust foundation for long-term industrial manufacturing success.

Biochar & Sustainable Processing Lines



Biochar Processing Line

Biochar Processing Line is an integrated industrial production system designed to convert biomass materials such as wood chips, rice husk, coconut shell, bagasse, sawdust, and agricultural waste into high-quality biochar through controlled thermal conversion. The line typically includes biomass feeding, drying, pyrolysis/carbonization reactor, cooling, crushing, screening, and packing units to ensure continuous, safe, and efficient operation. Engineered for high output and consistent carbon content, the system delivers uniform biochar quality with optimized temperature control, low emissions, and energy recovery options for cost-effective production. Suitable for agriculture, soil improvement, carbon sequestration, water treatment, and industrial carbon applications, the biochar line is available in customizable capacities with PLC automation, robust construction, and eco-friendly design for reliable long-term performance.

Types of Biochar Processing Line

- Biochar Plant
- Biomass Gasification Power Plant
- Renewable Energy & Sustainability
- Pyrolysis Plant
- Carbonization Plant

Biochar Plant



The Biochar Plant is a compact and efficient system designed to convert agricultural and organic biomass into high-quality biochar through controlled pyrolysis. It features a robust reactor, precise temperature control, and low-emission operation to ensure consistent carbonization and high carbon yield. The plant supports a wide range of feedstocks such as wood chips, rice husk, coconut shell, and crop residues. Its energy-efficient design allows recovery and reuse of syngas, reducing fuel consumption and operating costs. The system is engineered for continuous, stable operation with minimal maintenance requirements. Ideal for agriculture, soil improvement, and carbon sequestration applications, the Biochar Plant delivers reliable performance in a small industrial footprint.

Biomass Gasification Power Plant



A Biomass Gasification Power Plant converts solid biomass fuels such as wood chips, agricultural waste, or pellets into clean producer gas through a controlled gasification process. This gas is used to run engines or turbines for efficient electricity generation with low emissions and reduced fuel costs. The system is designed for continuous operation, high conversion efficiency, and reliable performance using renewable fuel sources. It is an ideal solution for decentralized power generation, industrial energy supply, and sustainable waste-to-energy applications.

Types of Biomass Gasification Power Plant

- Bio Ethanol Plant
- Biomass Recycling Plant
- Biomass Fuels Plant
- Biomass Fuel Oils Plant
- Biomass Organic fuel Plant
- Biomass Biochar Plant
- Organic Biochar Plant

Renewable Energy & Sustainability



Renewable Energy & Sustainability solutions are designed to reduce environmental impact while delivering reliable, efficient power for modern operations. These systems integrate clean energy sources such as solar, wind, and energy storage to optimize performance and minimize carbon emissions. Built with advanced control technologies, they support energy efficiency, cost savings, and long-term operational resilience. Ideal for industrial, commercial, and infrastructure applications, they enable compliance with sustainability goals and future-ready energy management.



Pyrolysis Plant

A Pyrolysis Plant is an advanced thermal processing system that converts biomass, plastic, or organic waste into valuable products such as bio-oil, syngas, and char in an oxygen-free environment. The process ensures efficient energy recovery while minimizing emissions and waste volume. The plant is engineered for continuous and stable operation with high thermal efficiency. It supports flexible feedstock handling and automated control for safe and reliable performance. The recovered outputs can be used as fuel or raw materials for industrial applications. This system is ideal for waste-to-energy, recycling, and sustainable resource recovery projects.

Types of Pyrolysis Plant

- Batch Tire Plastic Pyrolysis Plant
- Waste Tire Plastic Pyrolysis Plant
- Skid Mounted Small Pyrolysis Plant
- Semi-continuous Tire Plastics Pyrolysis Plant
- Fully Continuous Tire Pyrolysis Plant
- Waste Tires Plastics Recycling To Oil Plant

- Waste Aluminized Paper Pyrolysis Machine
- Medical Waste Pyrolysis Plant
- MSW Pyrolysis To Oil Plant
- Oil Sludge Pyrolysis Plant
- Fully Continuous Plastic Pyrolysis Plant



Carbonization Plant

A Carbonization Plant is designed to convert biomass and organic materials into high-quality charcoal through controlled thermal processing in a low-oxygen environment. The system ensures efficient carbon conversion with consistent product quality and reduced emissions. It is engineered for continuous operation with robust construction and reliable performance. The plant supports a wide range of feedstocks such as wood, agricultural residues, and coconut shells. Recovered heat and by-products can be reused to improve overall energy efficiency. This solution is ideal for charcoal production, bio-carbon applications, and sustainable biomass utilization.

Types of Carbonization Plant

- Mobile Skid Mounted Carbonization Plant
- Woody Waste Carbonization Plant
- Agricultural Waste Carbonization Plant

- Continuous Biomass Carbonization Plant
- Sludge Carbonization Plant
- Forestry Waste Carbonization Plant

Process Equipment & Complete Plants



Powered by AI/ML & IoT

Process Plant

A process plant is an integrated facility designed to meet specific objectives based on the systematic transformation and processing of raw materials into finished and semi-finished products through mechanical, thermal, chemical, and biological actions and operations. It is composed of various installations and processing operations, often including raw material processing and handling systems, processing units such as reactors, dryers, furnaces, ovens, and other relevant ancillary utility plant installations, designed to facilitate and ensure efficient and maximum flow throughout the platform or plant itself. Engineered to ensure efficiency and practicality, process plants have been mentioned as applicable in various sectors and processes, especially due to environmentally friendly designs based on safety considerations and compliance regulations.

Types of Process Plants

- Turnkey & Customized Plant
- PE Wax Plant
- Bag House Filter
- Hot melt Adhesive Plant
- Potato Powder Production Plant
- Sulphur Melting & Granule Plant
- Batching Systems and Plant
- Pilot Plants/ Lab Scale Plant
- Ethanol Recovery Plant
- Food Processing Plant
- Wet Laid Paper Plant
- Vacuum & MVD Drying Plant
- Glass Fibre Paper Plant
- Mixing Kettle Plant
- Pilot Mixing Kettle Plant
- Hot Melt Adhesive Mixing Plant
- Mixing, Granulation & Size Reduction
- Chemical & Process Plants

Turnkey & Customized Plant



Our turnkey and customized plants are industrial solutions that are designed to give optimum results and long-lasting reliability. Our plants are custom designed according to specific product requirements, capacity, space, and operational preferences. Our expertise in process engineering, equipment fabrication, and automation with installations provides industrial customization. State-of-the-art control systems are usually part of these plants to deliver high-quality, safe, and energy-effective satisfaction. Construction that is hardy and smart makes these plants extremely easy to operate and maintain. Our plants come with a high level of integration and are ready to operate.

PE Wax Plant



PE Wax Plant is a small and effective system that will be used in the controlled thermal breakdown of polyethylene in order to generate high quality polyethylene wax. It has the continuous or batch design operation whereby there is tight control in temperature to obtain a uniform wax property and yield. The plant has a powerful reactor, powerful condensation system as well as sophisticated safety interlocks to ensure reliable operation. Having a heating system optimized on energy use saves on the operating costs and the conditions of the process remain stable. The modular design is easy to install, use and to maintain with only minor downtimes. The PE Wax Plant is suitable with a wide range of PE feedstocks, with consistent yield of wax suitable to coating, processing plastics, and also as a master batch.

Bag House Filter



A Bag House Filter is a high-efficiency dust collection device that is specifically created to draw out the dusty particles in the industrial airstreams or gas. It works on the concept that it pulls the contaminated air with fabric filter bags that traps dust, and lets the clean air to flow through. The dust that is collected is occasionally emptied via an automatic cleaning system so that performance is maintained. This system finds extensive application in cement industry, power plants, steel mills and other heavy industry applications. Made with a strong steel casing and a strong filter media, it is considered to have a long life service and reliable functioning. The Bag House Filter assists in improving the quality of air in the workplace by ensuring that the environment is provided with the required standards of the emission.

Hot melt Adhesive Plant



A Hot Melt Adhesive Plant is a completely integrated plant that is designed to produce hot melt adhesives in packages, labels, wood, and hygiene products. The plant incorporates accurate melting, mixing and blending units to maintain homogeneous quality of products and consistent production. It is designed to be run continuously or in batch mode and has a large variety of formulations with very good temperature and viscosity control. The system is constructed using materials that are heat resistant long lasting and safe to use. Monitors and automation enable monitoring and controlling the recipes easily as well as best repeatable results. The layout and energy-saving design make the plant compact and suitable to adhesive manufacturing facilities which need high productions in modern times.

Potato Powder Production Plant



Potato Powder Production Plant is a complete system that is aimed at transformation of fresh potatoes to produce high-quality and fine potato powder with future production. It comprises the washing, peeling, slicing, cooking, drying, and milling systems on the automated processing of a smooth process. Constructed using food grade stainless steel; the plant will be hygienic, clean and have a longer operational life. The machine is energy efficient; simple to handle and is applicable in the constant industrial production. It suits well with manufacturers who provide potato powder to snacks, soups, bakery, and instant food.

Sulphur Melting & Granule Plant



Sulphur M Melting and Granule Plant is a furnace sized facility that is fully automated, to melt, filter, and granulate solid Sulphur to create uniform free-flowing granules. The plant is characterised by a specific level of temperature regulation, heat recovery optimization towards producing products of the same quality with the lowest amount of consumed energy. Its granulation unit produces dust-free dust-free granules with a high level of uniformity in its size appropriate to store, transport and further processing with ease. The system is made of non-corrosive materials that provide stability in continuous working and durability. The plant is designed as a safe and automated plant and is readily integrated with fertilizer, chemical and industrial sulphur processing plant.

Batching Systems and Plant



The batching systems and plants are engineered solutions that are aimed at precisely weighing, mixing, and dispensing of the type of raw material to produce the same high-quality and uniform production of concrete, asphalt, chemicals, and food processing industries. These systems incorporate accuracy weighing applications, mixers, conveyors and automated control to provide consistent accuracy batching and optimization of workflow. They are designed to be dependable, which is why they can be operated manually and fully automated depending on the production volume. Modular designs are easily customized, expanded, and maintained and have minimum time out. Altogether, the benefits of batching plants are enhanced productivity, lack of waste of materials, and the consistent production of products with the highest quality standards.

Pilot Plants/ Lab Scale Plant



Pilot Plants/ Lab Scale Plants these are small modular sized structures which are used to execute simulation of full scale industrial operations under laboratory conditions. They allow development and optimization of the process and justify its development scale-up by minimising technical risk and development cost. These plants have very generous material resources and controlled instrumentation that has been used in a broad variety of chemical, pharmaceutical, food, and other specialty materials. The modular design makes it easy to configure, integrate additional units and operate in a safe mode. Large in scale Ideal in R&D, academic research, and process demonstration, they provide consistent and repeatable performance in a compact footprint.

Ethanol Recovery Plant



An Ethanol Recovery Plant is an industrial mini-plant that can purify and recover the ethanol molecules in the process streams through the used distillation and condensation. It aids manufacturers to minimize solvent losses and operating costs and eternal production practices. The plant is designed to be continuously operated and controlled to a specific temperature to guarantee high recoveries purity and a high level of consistency. Construction It is made using corrosive resistance materials, providing the reliability in use and service life in a challenging environment. Its design is easy to integrate in the current production lines in the pharmaceutical, chemical and food processing sectors.

Food Processing Plant



This food processing plant is set in a favorable manner towards efficient, hygienic and continuous production with a wide variety of food products. It is constructed using food-grade stainless steel which makes it durable, resistant to corrosion as well as complies with international standards of safety and sanitation. It is a system, which combines raw material, processing and packaging to maximize the workflow and minimize manual handling. Modern robotization and the high level of automation provide high-quality products with the minimum wastage and energy use. It is designed in a modular way and hence easily customizable, easy to maintain and it has a potential of expanding capacity in future.

Wet Laid Paper Plant



Wet-laid paper plant is a complete production system that aims at producing uniform and high quality paper and nonwoven material through the use of water based fiber dispersion technology. It is also used in specialty papers and technical nonwovens where the orientation and thickness of the fiber and weight can be controlled precisely in order to manufacture a product. It substantiates a great variety of raw materials, such as cellulose, synthetic fibers, and mineral additives. The plant is designed to operate stably with forming, drying and finishing areas to maintain consistency in the output. As is it is modular in nature, it is easily produced with high flexibility and consistency.

Vacuum & MVD Drying Plant



Vacuum & MVD Drying Plant is intended to be able to remove moisture under optimal vacuum systems in the materials that are sensitive to heat. It uses vacuum drying with mechanical vapour recompression (MVD) in order to get the rapid, energy efficient treatment of drying products without compromising on their quality. The system provides sequential drying with little thermal degradation and it is applicable in pharmaceuticals, chemicals, and food products. It has a tiny size and can easily fit into the production lines and has automated controls to maintain accurate temperature and vacuum control. Its high levels of construction and maintenance make it competent in industrially operating constantly.

Glass Fibre Paper Plant



Glass Fibre Paper Plant is intended to manufacture high quality glass fibre paper with high efficiency which is applicable in insulation, filtration and industrial purposes. It has automated feeding, forming, and drying to achieve uniformity between the quality and thickness. The plant helps in operating continuously with minimal maintenance and energy efficient operation. Complex control panels can be used to adjust the process parameters to achieve the best output. It is made compact and robust, which makes it great in dependable mass production.

Mixing Kettle Plant



The Mixing Kettle Plant is a strong industrial system that is aimed at effective mixing of liquids and semi-solids. It has a heavy construction of an unchanging stainless steel spout kettle that has inbuilt cooling and heating technologies to enable the accurate temperature control. The high-torque-agitator guarantees that it is mixed uniformly and does not settle or clump. It has automated controls and can be programmed to perform mixing cycles and can be easily operated. Its use is ideal in food, chemical and pharmaceutical production providing high quality and consistency of results.

Pilot Mixing Kettle Plant



The Pilot Mixing Kettle Plant is a small, versatile exporter that is applicable in small scale production and R&D purposes. It has a jacketed kettle that makes it ultra efficient in heating and cooling of liquids. The built-in agitator provides a mixture that is even and does not scald products. Control is easy to use and allows precise setting of temperature and mixing speed of the mixer. Constructed to be robust and lab versatile, it is capable of accommodating a vast amount of formulations and pilots batches.

Hot Melt Adhesive Mixing Plant



The design of the Hot Melt Adhesive Mixing Plant is based on production of high quality hot melt adhesives that are produced in large quantities and continuously. It has a fine tuned temperature as well as automated mixing to maintain consistency in the quality of the product. The system has a robust heating tank, high shear mixer and an inbuilt pumping unit to operate smoothly. Small and lightweight, it ensures that the workforce is reduced as much as possible and the output is maximized. It is ideal in production of adhesive in industries which has reliability, safety and is energy efficient.


Mixing, Granulation & Size Reduction



Our equipment provides a high-quality mixing, granulation, and size reduction under one platform. It is planned to be mixed evenly, so the quality of materials will be uniform. The granulation process creates free flowing and uniform particles to be easily handled. Superior size reduction processes are precise and reduce materials to the required fineness. It is designed to be reliable and maintain less making it applicable in numerous industrial processes. It is small and multi-purpose and is optimized regarding production and the conservation of space and energy.

Types of Mixing, Granulation & Size Reduction

 Industrial Mixers & Blenders

 Granulators & Agglomerators

Chemical & Process Plants




Our Chemical and Process plants are designed to produce in a high efficiency mode and in various sectors. They combine high level of automation and control to manage processes accurately. They have been made with durable materials hence long life span and resistant to corrosion. Modular layouts are easily installed, scalable and easily maintained. Energy saving operations reduce the expenses and maximize the output. These plants are chemical, petrochemical and specialty process plants that are ideal and offer dependable service and quality.

Types of Chemical & Process Plants

 Reaction & Polymer Processing Plants

 Calcination & Pyrolysis Plants

 Biochar & Waste-to-Energy Plants

 Chemical Drying & Curing Systems

Seaweed & Microalgae Processing Lines



Seaweed & Microalgae Processing lines

Seaweed and microalgae are rapidly emerging as some of the most versatile and sustainable raw materials across the global food, pharmaceutical, nutraceutical, cosmetic, and bioenergy industries. Kerone's Seaweed & Microalgae Processing Line is a comprehensive, end-to-end industrial system engineered to handle the unique biological, chemical, and physical properties of both macro and microalgae species. From fresh harvesting intake to final drying, extraction, and packaging, Kerone's processing line integrates advanced blanching modules, shredding systems, dewatering presses, mixing tanks, thermal dryers, and biorefinery components into a seamlessly connected workflow. The processing line is designed to maintain optimal phytochemical integrity, minimize iodine and contaminant levels, and deliver consistent output across a range of species including Laminaria, Sargassum, Chlorella, Spirulina, and Nannochloropsis. With decades of thermal and process engineering expertise, Kerone ensures that every unit operation within the processing line is precisely calibrated for maximum efficiency, hygiene, and product quality.

Types of Seaweed & Microalgae Processing line

- Blanching/Iodine Reduction for Seaweed Processing
- Seaweed Stabilization Module for Seaweed Processing
- Fresh Seaweed Processing plant
- Dry Seaweed processing Line
- Screw Press for Seaweed Dewatering
- Mixing and Storage Tank for Seaweed Processing
- Seaweed Belt Dryer
- Seaweed Drum Dryer
- Algal Biofuel Plant
- Algae Biorefinery
- Bioscience Systems for Seaweed & Microalgae
- Seaweed & Algae Bio-Stimulant Production System

Blanching/Iodine Reduction for Seaweed Processing



Kerone's Blanching & Iodine Reduction Systems are designed for the safe and efficient pre-treatment of seaweed used in food, pharmaceutical, and nutraceutical applications. The system reduces excess iodine in brown seaweeds such as Laminaria and Sargassum to meet international safety standards. Controlled blanching deactivates enzymes, lowers microbial load, softens tissue, and helps retain natural color. With precise temperature control, uniform heating, and adjustable residence times, the system ensures consistent product quality in continuous, high-volume processing operations.

Seaweed Stabilization Module for Seaweed Processing



Kerone's Seaweed Stabilization Module is designed to prevent rapid degradation of freshly harvested seaweed by controlling enzymatic activity, microbial growth, and oxidation. The system preserves nutritional value, phytochemical integrity, and product quality through precise thermal stabilization and optimized handling. Suitable for integration immediately after harvest, it extends shelf life without chemical additives while minimizing cell damage and ensuring effective microbial reduction. This enables consistent, high-quality biomass for food, extracts, biostimulants, and other value-added seaweed products.

Fresh Seaweed Processing plant



Kerone's Fresh Seaweed Processing Plant is a complete solution for handling and processing fresh seaweed with high moisture content and sensitive bioactive compounds. The plant integrates washing, stabilization, sorting, shredding, dewatering, and further processing into a single hygienic system. Custom-designed for different seaweed species and production capacities, it supports applications in food, pharmaceuticals, cosmetics, and bioenergy. Built with HACCP-compliant design, full traceability, and advanced process control, the plant ensures high product quality, safety, and efficient marine biomass processing.

Dry Seaweed Processing Line



Kerone's Dry Seaweed Processing Line is an integrated industrial solution for producing high-quality dried seaweed flakes, granules, and powders. The system combines pre-treatment, drying, grinding, classification, and packaging in a fully automated workflow. Precise control of temperature, moisture, and particle size helps preserve valuable bioactive compounds while ensuring consistent product quality. Suitable for processing brown, red, and green seaweed varieties, the line supports food, nutraceutical, agricultural, and industrial applications while meeting stringent quality and safety standards.

Screw Press for Seaweed Dewatering



Kerone's Seaweed Shredding & Grinding System is a high-performance solution for reducing seaweed biomass into uniform shreds, flakes, granules, or fine powders. Designed specifically for marine algae, the system improves drying efficiency, extraction performance, blending consistency, and final product quality. It combines industrial shredding, cutting, and grinding technologies to process both fresh and dried seaweed with precise particle size control, high throughput, and minimal product degradation, making it ideal for food, nutraceutical, agricultural, and industrial applications.

Mixing and Storage Tank for Seaweed Processing



Kerone's Mixing & Storage Tanks for Seaweed Processing are specially engineered for the handling, homogenization, conditioning, and storage of seaweed and microalgae slurries, extracts, and intermediate products. Built from high-grade stainless steel, the tanks are designed to withstand corrosive marine environments while ensuring hygienic operation and product integrity. With optimized agitation systems, temperature control, and customizable configurations, they support consistent processing, prevent product degradation, and improve efficiency across food, nutraceutical, cosmetic, and biostimulant production applications.

Seaweed Belt Dryer



Kerone's Seaweed Belt Dryer is a continuous drying system designed for gentle and efficient moisture removal from seaweed and marine algae. Ideal for temperature-sensitive varieties such as Nori, Wakame, and Dulse, it uses controlled low-temperature airflow and multi-zone drying to preserve color, flavor, nutrients, and bioactive compounds. The system ensures uniform drying, improved microbial safety, extended shelf life, and reduced energy consumption. Engineered for high-moisture seaweed biomass, it delivers consistent product quality for food, pharmaceutical, and nutraceutical applications.

Seaweed Drum Dryer



Kerone's Seaweed Drum Dryer is a high-capacity rotary drying system designed for efficient moisture removal from seaweed and algae biomass. The rotating drum ensures continuous tumbling and uniform heat exposure, enabling rapid drying across a wide range of moisture levels. Ideal for large-scale production of seaweed meal, animal feed, biostimulants, and industrial-grade dried seaweed, the system offers high throughput, energy efficiency, and reliable performance. Its robust design handles variable feed sizes while delivering consistent drying results and reduced operating costs.

Algal Biofuel Plant



Kerone's Algal Biofuel Plant is a complete, integrated solution for producing renewable biofuels from microalgae. The plant covers the entire process—from algae cultivation and harvesting to biomass pre-treatment, lipid extraction, biodiesel production, bioethanol fermentation, and bio-crude generation. Designed for high biomass productivity, maximum fuel yield, and efficient resource utilization, it minimizes energy and water consumption while supporting sustainable CO₂ reduction. Available from pilot to commercial scale, the plant provides a scalable pathway for cost-effective and environmentally responsible biofuel production.

Algae Biorefinery



Kerone's Algae Biorefinery is an advanced integrated facility that converts microalgae and macroalgae biomass into multiple high-value products from a single feedstock. Through a series of extraction, fractionation, purification, and conversion processes, the biorefinery produces proteins, lipids, pigments, polysaccharides, biofuels, and other value-added products. Designed to maximize biomass utilization and profitability, the system creates multiple revenue streams while supporting sustainable, resource-efficient production. Each biorefinery is customized to match the client's biomass type, product goals, and operational requirements.

Bioscience Systems for Seaweed & Microalgae



Kerone's Bioscience Systems for Seaweed & Microalgae are integrated processing solutions designed for the cultivation, handling, extraction, and conversion of marine biomass into high-value products. Suitable for biotechnology, nutraceutical, pharmaceutical, agricultural, cosmetic, and bioenergy applications, the systems ensure efficient processing while preserving valuable bioactive compounds. With advanced process control, hygienic design, and scalable configurations, they deliver consistent product quality, regulatory compliance, and sustainable production. Each system is customized to specific biomass types, capacities, and end-product requirements.

Seaweed & Algae Bio Stimulant Production System



Kerone's Seaweed & Algae Bio-Stimulant Production System is a complete processing solution for manufacturing high-quality bio-stimulants from seaweed and microalgae biomass. The system integrates biomass preparation, extraction, filtration, concentration, formulation, and packaging into a streamlined production process. Designed to preserve valuable bioactive compounds such as polysaccharides, amino acids, vitamins, and plant growth promoters, it ensures consistent product quality and maximum extraction efficiency. Suitable for liquid and powder bio-stimulant production, the system supports sustainable agriculture with scalable, energy-efficient, and GMP-compliant processing technology.

Food & Nutraceutical Processing Plants



Food Processing Line

Food Processing Line is an integrated and automated system designed to convert raw agricultural or food materials into safe, high-quality, and value-added food products through a series of controlled processing steps. The line typically includes washing, sorting, cutting, blanching, drying, cooking, cooling, mixing, packaging, and utility systems, all engineered for hygienic operation and consistent output. Built with food-grade stainless steel construction and advanced process control, food processing lines ensure uniform quality, high productivity, energy efficiency, and compliance with food safety standards. These systems are widely used in fruits and vegetables, grains, snacks, spices, dairy, ready-to-eat foods, and agro-based industries, offering flexible design, scalable capacity, low maintenance, and reliable continuous operation.

Types of Food Processing Line

- Microwave Food Production Plant
- Infrared Food Processing Plant
- Ready to Eat Meals Food Processing Plant
- Cereal Processing Plant
- Baby Food Production Plant
- Nutritional Retention
- Fruit & Vegetable Processing
- Herbal & Nutraceutical Processing
- Spice, Tea & Coffee Processing
- Grain, Cereal & Pulse Processing
- Functional Foods & Ingredients
- Food Powders & Ingredient Processing
- Cold-Chain & Shelf-Life Enhancement
- Cold Plasma

Microwave Food Production Plant



A Microwave Food Production Plant is an advanced processing system designed for fast, uniform heating and cooking of a wide range of food products. It uses controlled microwave energy to preserve taste, texture, and nutritional value while significantly reducing processing time. The plant features automated operation, precise temperature control, and hygienic stainless-steel construction for food safety compliance. It is suitable for ready-to-eat meals, snacks, and packaged food products in continuous or batch production. This solution improves productivity, lowers energy consumption, and ensures consistent product quality.

Infrared Food Processing Plant



An Infrared Food Processing Plant is a compact, energy-efficient system designed for rapid heating, drying, roasting, or pasteurization of food products using controlled infrared radiation. It delivers uniform heat transfer directly to the product surface, ensuring consistent quality, improved texture, and enhanced flavor retention. The system reduces processing time significantly compared to conventional methods while minimizing moisture loss and nutrient degradation. Built with hygienic stainless-steel construction and precise temperature controls, it meets modern food safety and production standards. Ideal for a wide range of applications, the plant offers reliable performance, low operating costs, and easy integration into existing processing lines.

Cereal Processing Plant



A cereal processing plant is a fully integrated system designed to clean, condition, process, and package raw grains into finished cereal products with consistent quality and high efficiency. It typically includes grain cleaning, grinding or flaking, cooking or extrusion, drying, coating, and packaging units arranged for smooth material flow. Built with food-grade materials, the plant ensures hygienic operation and compliance with international food safety standards. Automation and precise process control help maintain uniform texture, taste, and nutritional value across batches. The modular design allows easy customization to suit different cereal types and production capacities.

Baby Food Production Plant



A Baby Food Production Plant is a fully integrated system designed to hygienically process, cook, blend, and package nutritious baby food products such as purees, cereals, and semi-solid foods. The plant is manufactured using food-grade stainless steel and complies with international food safety standards to ensure maximum product safety and quality. It features automated controls for precise temperature, mixing, and cooking parameters, resulting in consistent texture and nutritional value. The modular design allows easy customization based on production capacity and recipe requirements. This plant is ideal for commercial baby food manufacturers seeking reliable, efficient, and sanitary production.

Nutritional Retention



Designed to preserve nutritional integrity, this machine uses controlled temperature, minimal processing time, and optimized airflow to help retain essential vitamins, minerals, color, and natural flavor. Gentle handling reduces oxidation and nutrient loss compared to conventional methods. Precise process control ensures consistent results across batches while maintaining food quality. The system supports better nutrient stability during processing and storage. Ideal for manufacturers seeking efficiency without compromising nutritional value.

Fruit & Vegetable Processing



Fruit & vegetable processing machines are designed to efficiently clean, sort, peel, cut, and prepare fresh produce for further processing or packaging. Built with food-grade stainless steel, these machines ensure hygiene, durability, and easy cleaning in demanding production environments. They help maintain product freshness, color, and nutritional value while reducing manual labor and processing time. Precision engineering allows consistent output and minimal product waste across a wide range of fruits and vegetables. The systems can be customized or integrated into existing processing lines to suit different capacity requirements. Ideal for food factories and commercial kitchens, they improve productivity while meeting modern food safety standards.

Types of Fruit & Vegetable Processing

■ Powder & Flake Processing Plants

■ Pulping, Slicing & Blanching Lines

Herbal & Nutraceutical Processing



Herbal & Nutraceutical Processing systems are designed to efficiently handle raw botanicals and dietary ingredients through precise cleaning, drying, milling, blending, extraction, and granulation processes. These machines ensure consistent particle size, uniform mixing, and optimal retention of active compounds. Built with hygienic, GMP-compliant construction, they support food and pharmaceutical-grade production standards. Automated controls allow accurate process monitoring and repeatable results across batches. The equipment is suitable for a wide range of herbs, powders, capsules, and functional formulations. Compact, robust, and energy-efficient designs make them ideal for modern nutraceutical manufacturing facilities.

Types of Herbal & Nutraceutical Processing

■ Medicinal Herb Drying & Sterilization

■ Botanical Extraction & Processing Plants

■ Herbal Powder & Capsule Processing

■ Ayurveda & Phytochemical Processing Systems

Spice, Tea & Coffee Processing



Spice, Tea & Coffee Processing machines are designed for efficient cleaning, drying, roasting, grinding, blending, and packaging of a wide range of agricultural products. Built with food-grade materials, these machines ensure hygiene, consistent quality, and compliance with industry standards. Advanced processing technology delivers uniform texture, aroma retention, and enhanced flavor in the final product. The robust construction supports continuous operation with minimal maintenance requirements. User-friendly controls allow precise adjustment of temperature, speed, and processing time for different products. Ideal for small to large-scale production, these machines improve productivity while reducing labor and processing costs.

Types of Spice, Tea & Coffee Processing

Spice Cleaning, Drying & Grinding Plants

Tea Withering, Drying & Conditioning Systems

Coffee Roasting & Drying Plants

Grain, Cereal & Pulse Processing



Our Grain, Cereal & Pulse Processing machines are engineered for precision cleaning, grading, and sorting of rice, wheat, maize, pulses, and other cereals. They remove dust, stones, husks, and other impurities to ensure superior product quality and uniformity. Equipped with high-efficiency sieves and air separation systems, these machines deliver consistent throughput with minimal loss. Constructed from robust, corrosion-resistant materials, they are built for long-term durability and reliable operation. Easy to operate, maintain, and integrate into existing production lines, they suit small, medium, and large-scale processing units. Ideal for food processing industries, mills, and agricultural operations aiming for higher efficiency and quality output.

Types of Grain, Cereal & Pulse Processing

Paddy, Wheat & Maize Processing Plants

Pulses Cleaning, Drying & Milling Systems

Functional Foods & Ingredients



Our Functional Foods & Ingredients range includes high-quality, nutrient-rich components designed to enhance health and well-being. Sourced from natural grains, pulses, cereals, and plant extracts, they deliver targeted benefits such as immunity support, digestive health, and energy enhancement. Easy to incorporate into food products, beverages, and supplements, they maintain stability and bioavailability. Manufactured under strict quality standards, they ensure purity, consistency, and safety. Ideal for functional foods, nutraceuticals, and fortified product applications. Perfect for businesses aiming to create innovative, health-focused offerings.

Types of Functional Foods & Ingredients

■ Protein, Fiber & Prebiotic Processing Plants ■ Food Additive & Ingredient Drying Systems

Food Powders & Ingredient Processing

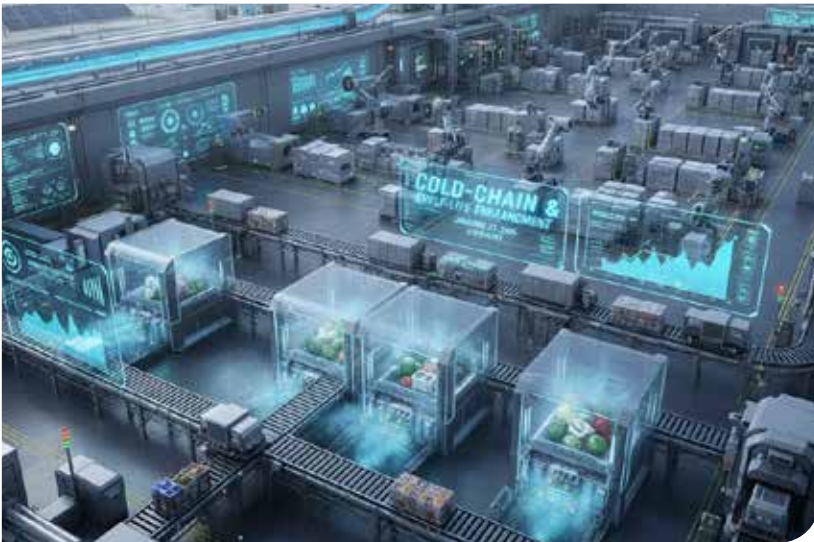


Our Food Powders & Ingredient Processing systems deliver precise, efficient handling of a wide range of powders, spices, and dry ingredients. Designed for consistent particle size, uniform blending, and high throughput, they ensure product quality and repeatability. The equipment supports drying, milling, sieving, and mixing in a compact footprint. Built with sanitary, easy-to-clean construction, it meets strict food safety standards. Modular design allows seamless integration into existing production lines. Ideal for food, beverage, and nutritional products, these systems optimize efficiency while maintaining ingredient integrity.

Types of Food Powders & Ingredient Processing

■ Spray, Tray & Microwave Drying Systems ■ Blending, Granulation & Agglomeration Plants
■ Flavor, Color & Nutrient Processing Units ■ Flavor, Color & Nutrient Processing Units

Cold-Chain & Shelf-Life Enhancement



Our Cold-Chain & Shelf-Life Enhancement solutions maintain product freshness and quality from production to delivery. Advanced refrigeration, freezing, and controlled-atmosphere technologies extend shelf life while preserving flavor, texture, and nutritional value. Energy-efficient systems ensure reliable temperature control and minimal waste. Hygienic, food-grade design meets strict safety standards and simplifies cleaning. Flexible configurations integrate easily into existing supply chains. Ideal for perishable foods, dairy, and beverages, these solutions maximize product longevity and reduce spoilage.

Types of Cold-Chain & Shelf-Life Enhancement

- Hygienic Drying & Preservation Systems
- Moisture Control & Stabilization Units
- Microbial Load Reduction Systems
- Quality Retention & Nutrient Preservation

Cold Plasma



The Cold Plasma System generates a low-temperature plasma ideal for surface treatment, sterilization, and material modification without heat damage. It produces reactive species that effectively clean, activate, or functionalize surfaces in seconds. Compact and energy-efficient, it operates safely in laboratory or industrial settings. The system features adjustable power and treatment time for precise control. Its non-thermal process is compatible with heat-sensitive materials like plastics, textiles, and electronics. Designed for ease of use, it delivers consistent, high-performance plasma treatment with minimal maintenance.

Types of Cold Plasma

- Cold Plasma System
- Cold Plasma for Sterilisation

Coating, Surface & Advanced Material Processing



Powered by AI/ML & IoT

Coating Line/Plant

Coating Line / Plant is a fully integrated and automated industrial system designed to apply uniform, controlled, and high-quality coatings onto products or substrates for protection, enhancement, or functional performance. The plant typically includes surface preparation, coating application (spray, dip, roller, powder, or electrostatic), curing or drying ovens, cooling zones, material handling systems, and emission control units, all synchronized for continuous and efficient operation. Engineered for precision and reliability, coating lines feature advanced process control, consistent thickness regulation, high transfer efficiency, energy-efficient curing, and compliance with safety and environmental standards. These plants are widely used in automotive, metal fabrication, electronics, packaging, construction materials, and consumer goods industries, offering customized layouts, scalable capacity, reduced material waste, and superior finish quality.

Types of Coating Line/Plant

- Lab and Pilot Scale Coating Line
- Commercial Scale Coating Line
- Cast Coating Line

Lab and Pilot Scale Coating Line



The Lab and Pilot Scale Coating Line is designed for precise, small- to medium-scale coating development and production. It supports a variety of coating techniques, including slot-die, roll-to-roll, and curtain coating. Adjustable speed, temperature, and coating thickness allow full process control and reproducibility. Ideal for research, product development, and pilot-scale trials, it ensures uniform coatings on diverse substrates. Compact and modular, the system can be tailored to specific material and process requirements. Built for ease of use, it combines reliability, flexibility, and high-quality results in a single platform.

Commercial Scale Coating Line



The Commercial Scale Coating Line delivers high-throughput, uniform coating for large-scale production. It supports multiple coating methods, including slot-die, roll-to-roll, and gravure, for diverse substrate compatibility. Fully automated controls manage speed, temperature, and coating thickness for consistent, repeatable results. Designed for industrial environments, it handles continuous operation with minimal downtime. Its modular design allows easy integration and scalability to meet production demands. Robust, reliable, and efficient, it ensures high-quality coatings across a wide range of applications.

Cast Coating Line



The Cast Coating Line enables high-precision, uniform coatings for films, foils, and specialty substrates. It uses a controlled casting process to produce smooth, defect-free surfaces with consistent thickness. Adjustable speed, temperature, and drying parameters provide full process flexibility and reproducibility. Ideal for research, pilot, and production-scale applications, it handles a wide range of materials, including polymers and composites. Its modular, compact design allows easy integration and scalability for different production needs. Reliable and efficient, it delivers high-quality coatings with minimal maintenance.



Coating and Impregnation Plants

Coating and Impregnation Plants are advanced, integrated industrial systems designed to apply uniform coatings and impregnate substrates with resins, chemicals, or functional materials to enhance strength, durability, insulation, corrosion resistance, and surface performance. These plants typically include surface preparation units, coating or impregnation stations (dip, spray, roll, vacuum, or pressure methods), metering and dosing systems, drying or curing ovens, cooling zones, material handling, and emission control units, all synchronized for continuous and precise operation. Engineered for high efficiency and reliability, they feature advanced automation, accurate process control, energy-efficient drying and curing, and compliance with safety and environmental standards. Widely used in textiles, paper, wood, composites, electrical insulation, automotive, and advanced materials industries, these plants offer customized configurations, scalable capacities, reduced material consumption, and consistent high-quality output.

Types of Coating and Impregnation Plants

- Gravure Coating Machine
- Air Knife Coating Machine
- Web Coating Machine
- Slot Die Coating Machine
- Curtain Coating Machine
- Immersion/Dip Coating Machine
- Hot Melt Coating Machine
- Fabric Coating Machine



Gravure Coating Machine

The Gravure Coating Machine is designed for high-precision, uniform coating applications on a variety of substrates. It features a gravure cylinder system that ensures consistent thickness and smooth finishes. Equipped with adjustable speed and pressure controls, it accommodates different coating materials efficiently. The machine offers easy cleaning and maintenance, minimizing downtime in production. Its robust construction ensures long-term reliability in industrial environments. Ideal for packaging, label, and specialty material production, it delivers superior coating quality with high repeatability.



Air Knife Coating Machine

The Air Knife Coating Machine provides precise, uniform coating on flexible substrates using a high-speed air knife system. It ensures consistent film thickness with adjustable air pressure and substrate speed. The machine is suitable for a wide range of coating materials, including water- and solvent-based solutions. Its compact design allows easy integration into existing production lines. Quick setup and cleaning reduce downtime and improve operational efficiency. Ideal for packaging, labels, and specialty films, it delivers high-quality, repeatable coatings.



Web Coating Machine

The Web Coating Machine is engineered for efficient, high-speed coating of continuous substrates. It delivers precise, uniform coatings with adjustable thickness and speed controls. Compatible with a wide range of coating materials, it ensures excellent adhesion and finish. The machine's modular design allows easy integration into production lines. Quick setup and simple maintenance minimize downtime and operational costs. Ideal for films, papers, and specialty materials, it provides consistent, high-quality results.



Slot Die Coating Machine



The Slot Die Coating Machine delivers precise, uniform coatings on a variety of continuous substrates with exceptional accuracy. It features an adjustable slot die for consistent film thickness and smooth surface finishes. Suitable for a wide range of coating materials, including high-viscosity solutions, it ensures efficient material usage. The machine's robust design allows seamless integration into production lines. Easy setup and cleaning reduce downtime and improve productivity. Ideal for films, papers, and specialty applications, it provides high-quality, repeatable coatings.

Curtain Coating Machine



The Curtain Coating Machine is designed for high-speed, non-contact coating with excellent surface uniformity. It forms a continuous curtain of coating material to achieve smooth, defect-free finishes. The system allows precise control of coating weight and flow rate for consistent results. Suitable for a wide range of low-to medium-viscosity coatings, it ensures efficient material usage. Its stable structure supports reliable operation and easy integration into production lines. Ideal for paper, films, and specialty substrates, it delivers superior coating quality with high productivity.

Immersion/Dip Coating Machine



The Immersion/Dip Coating Machine is designed for uniform coating of substrates through controlled dipping and withdrawal processes. It ensures consistent coating thickness by precisely regulating immersion speed and dwell time. Suitable for a wide range of coating materials, it provides excellent surface coverage and adhesion. The machine supports repeatable, high-quality finishes across different substrate types. Its simple, robust design allows easy operation and maintenance. Ideal for industrial and specialty applications, it delivers reliable and efficient coating performance.

Hot Melt Coating Machine

The Hot Melt Coating Machine is designed for precise application of hot melt adhesives and coatings at controlled temperatures. It ensures uniform coating thickness with adjustable speed and flow control systems. The machine supports efficient processing of various substrates, including films and papers. Its integrated heating system maintains consistent material viscosity for stable performance. Easy operation and maintenance help reduce downtime in production. Ideal for packaging and industrial applications, it delivers reliable, high-quality coating results.



Fabric Coating Machines

Fabric Coating Machines are designed for applying uniform and durable coatings to a wide range of textile materials. They ensure precise control of coating thickness, pressure, and speed for consistent results. Suitable for various coating compounds, they enhance fabric properties such as durability, waterproofing, and adhesion. The machines support continuous operation for high production efficiency. Their robust construction ensures reliable performance in industrial environments. Ideal for technical textiles and specialty fabrics, they deliver high-quality, repeatable coating finishes.



Environmental & Green Solutions (CCUS, Biochar, WtE)



Powered by AI/ML & IoT

Environmental & Green Solutions

Environmental & Green Solutions are integrated industrial systems and technologies designed to minimize environmental impact while maximizing resource efficiency and sustainability. These solutions focus on waste reduction, energy recovery, emission control, water and effluent treatment, biomass utilization, and carbon reduction through advanced, eco-friendly processes. Engineered with high-efficiency equipment, smart automation, and optimized energy management, they ensure regulatory compliance, safe operation, and long-term cost savings. Environmental and green solutions are widely applied across industries such as food processing, chemicals, manufacturing, minerals, and bioenergy, supporting cleaner production, circular economy practices, and sustainable industrial development.

Types of Environmental & Green Solutions

- Sludge dryers, effluent evaporation systems, manure/biofertilizer plants
- IoT-linked real-time water, gas, and emission monitoring
- AI for circular economy applications: recycling, valorization, carbon capture
- Carbon Capture, Utilisation & Storage (CCUS)
- Carbon Recovery & CCU
- Biochar & Carbon-Negative Technologies
- Waste-to-Energy & Resource Recovery
- Green Energy & Sustainable Thermal Systems
- Environmental Protection & Digital Green Solutions

Sludge dryers, effluent evaporation systems, manure /biofertilizer plants



Sludge dryers, effluent evaporation systems, and manure/biofertilizer plants are designed for efficient treatment and volume reduction of industrial and agricultural waste. They enable effective moisture removal to convert waste into manageable or reusable by-products. These systems support continuous, energy-efficient operation with reliable performance. Designed to handle varying input compositions, they ensure consistent output quality. Robust construction allows operation in demanding environments with minimal maintenance. Ideal for environmental management and resource recovery, they support sustainable and compliant waste processing.

IoT-linked real-time water, gas, and emission monitoring



IoT-linked real-time water, gas, and emission monitoring systems provide continuous tracking of critical environmental parameters. They enable accurate measurement and instant data transmission for improved visibility and control. Integrated sensors ensure reliable monitoring across multiple points and conditions. The system supports automated alerts and data logging for compliance and reporting. Its scalable design allows easy integration with existing infrastructure. Ideal for industrial and environmental applications, it enhances safety, efficiency, and regulatory compliance.

AI for circular economy applications: recycling, valorization, carbon capture



AI for circular economy applications enables intelligent optimization of recycling, valorization, and carbon capture processes. It uses advanced analytics and machine learning to improve material recovery and process efficiency. The system supports real-time decision-making to reduce waste and maximize resource utilization. Predictive insights help optimize operations and lower energy consumption. Scalable and adaptable, it integrates easily with existing industrial systems. Ideal for sustainable manufacturing, it drives smarter, data-driven circular economy solutions.

 **Types of Recycling, valorization, carbon capture**

Carbon Capture, Utilisation & Storage



Carbon Capture, Utilisation & Storage (CCUS) systems are industrial machines and processes designed to capture carbon dioxide (CO₂) emissions from power plants and factories before they are released into the atmosphere. The captured CO₂ is then either reused in applications such as enhanced oil recovery, chemical production, or building materials, or safely compressed and stored underground in geological formations. CCUS technology helps reduce greenhouse gas emissions, supporting industries in meeting climate targets while continuing operations sustainably.

Types of Carbon Capture, Utilisation & Storage

- Industrial CO Capture Systems (Flue Gas & Process)
- Direct Air Capture (DAC) Systems
- CO Compression, Purification & Liquefaction
- Modular & Skid-Mounted CCUS Units

Carbon Recovery & CCU



Carbon Recovery & CCU (Carbon Capture & Utilisation) refers to systems that capture carbon dioxide (CO₂) from industrial exhaust gases and recover it for beneficial reuse instead of releasing it into the atmosphere. The recovered CO₂ is purified, compressed, and converted or used in applications such as synthetic fuels, chemicals, food & beverage carbonation, agriculture, and construction materials. This technology supports circular carbon economy by turning waste CO₂ into valuable resources while reducing overall carbon emissions.

Types of Carbon Recovery & CCU

- Recovered Carbon & Char Processing
- Activated Carbon & Carbon Materials

Biochar & Carbon-Negative Technologies



Biochar & Carbon-Negative Technologies involve machines and processes that convert biomass waste into stable carbon-rich biochar through controlled thermal treatment such as pyrolysis. The produced biochar permanently locks carbon into a solid form, preventing CO₂ release and enabling long-term carbon sequestration when applied to soil or used in construction and filtration. These technologies not only reduce atmospheric carbon but also improve soil health, waste management, and support truly carbon-negative industrial solutions.

Types of Carbon Recovery & CCU

- Biomass & Waste-to-Biochar Plant
- Pyrolysis & Carbonisation Systems
- Carbon-Negative & Soil Amendment Solutions

Waste-to-Energy & Resource Recovery



Waste-to-Energy & Resource Recovery technologies use specialized processing machines to convert municipal, industrial, and agricultural waste into usable energy such as electricity, heat, biogas, or fuels. These systems also recover valuable materials like metals, nutrients, and recyclables during processing, reducing landfill use and improving resource efficiency. By turning waste streams into energy and reusable resources, these technologies support sustainable waste management and contribute to circular economy goals.

Types of Waste-to-Energy & Resource Recovery

Waste-to-Energy (WtE) Plants | Sludge Drying & Energy Recovery | RDF, Pyrolysis & Gasification Systems

Green Energy & Sustainable Thermal Systems



Green Energy & Sustainable Thermal Systems use advanced heating, cooling, and energy recovery machines designed to operate with renewable energy sources and high energy efficiency. These systems integrate solar, biomass, waste heat recovery, and electrified thermal technologies to provide low-carbon process heat for industrial applications. By optimizing thermal performance and reducing fossil fuel dependence, they help industries lower emissions, cut energy costs, and achieve long-term sustainability targets.

Types of Green Energy & Sustainable Thermal Systems

Energy-Efficient & Low-Emission Thermal Processing | Hybrid Electric, Microwave & RF Systems

Environmental Protection & Digital Green Solutions



Environmental Protection & Digital Green Solutions combine advanced pollution control equipment with digital technologies such as AI, IoT, and data analytics to monitor, manage, and reduce environmental impacts in real time. These systems optimize emissions control, water and waste treatment, and energy usage through smart automation and predictive maintenance. By integrating digital intelligence with environmental engineering, they enable industries to achieve higher compliance, improved efficiency, and smarter, more sustainable operations.

Types of Environmental Protection & Digital Green Solutions

Emission Control & Pollution Abatement Systems | Water, Sludge & Effluent Management

Digital, AI & Smart Engineering Solutions



AI, ML & IoT: Upgraded Master Deck for Heating, Drying & Process Engineering

Introduction

This upgraded AI/ML-IoT master deck presents the next-generation strategic framework for Kerone's AI-driven heating, drying, cooling, and process engineering solutions. It positions Kerone as a global leader in intelligent, energy-efficient, predictive, and automated industrial systems.

01 Kerone's AI-First Engineering Philosophy

Kerone integrates AI, machine learning, digital twins, and IoT sensor networks into mechanical and thermal systems to deliver precision, reliability, real-time optimization, and unmatched operational efficiency.

02 AI System Architecture for Thermal & Process Equipment

- IoT Sensors Edge Controller AI Analytics Engine Cloud Platform ML Optimization Layer
- Digital Twin simulation for equipment health and performance prediction
- Adaptive algorithms for self-learning and self-calibration
- Autonomous control loops for heat, airflow, moisture and process variables

03 Predictive Maintenance Intelligence

- ML-driven failure prediction with 92–95% accuracy
- Vibration, temperature, moisture, and current signatures monitored continuously
- Automated alerts and maintenance scheduling
- Downtime reduction: 30–45% across dryers, ovens, kilns, reactors, conveyors

04 Energy Optimization Engine

- Real-time AI tuning of heaters, blowers, fans, feed rate, microwave power and IR intensity
- AI algorithms optimize energy consumption by 22–35%
- Dynamic thermal profiling reduces heat loss and improves uniformity
- Intelligent fan curves and PID adaptive loops

05 AI for Heating & Drying Systems

- Microwave + IR + Hot air hybrid tuning using neural networks
- Moisture prediction models for uniform drying
- Thermal runaway prevention models
- AI-based batch validation and recipe optimization

06 AI for Process Cooling & Thermal Regulation

- Smart chillers with predictive load balancing
- IoT-enabled coolant flow monitoring
- Adaptive sub-cooling algorithms
- 12–18% energy saving in cooling and chilling circuits

07 AI for Microwave, Infrared & Hybrid Systems

- Standing wave detection via sensors
- AI-driven power distribution for magnetrons or solid-state
- IR element auto-balancing
- Smart waveguide monitoring

08 Industrial IoT Sensor Network

- Temperature, humidity, IR emissivity, flow, current, vibration
- Millisecond-level data acquisition
- MES/SCADA integration
- Cloud dashboard for global monitoring

09 Digital Twin for Thermal Systems

- Virtual replica of rotary dryers, vacuum dryers, microwave chambers
- Predicts heat transfer, residence time, moisture evaporation curves
- Optimization before real machine runs

10 AI for Biochar, Pyrolysis & Carbon Systems

- Reaction kinetics prediction
- Gas composition sensing
- Adaptive heating zones in kilns and reactors
- Yield optimization algorithms

11 AI for PSA, Dehydration & Gas Systems

- Cycle timing optimization
- Adsorbent health prediction
- Valve sequencing intelligence
- Energy-efficient compressor operation

12 AI-Powered Quality Control

- Defect detection via image vision systems
- Thermal camera integration
- 60% reduction in product variability

13 Global Applications

- Food drying, pharma ovens, chemical reactors, rubber curing
- Waste-to-energy, biochar, MSW, pyrolysis
- Hydrogen, CO₂ capture, solvent recovery
- Advanced manufacturing & aerospace

14 Kerone's Competitive Advantage

- Only Indian OEM with full AI-ML automation stack
- AI/ML integrated into mechanical & thermal design
- End-to-end engineering: R&D Manufacturing Automation
- Global network and turnkey capability

15 Roadmap & Vision

- Fully autonomous dryers & reactors by 2030
- Smart factories using Kerone AI
- AI-powered sizing software for customers
- Global digital engineering platform





THANK YOU

UNIT 1 (KESL)

4 & 5, Marudhar Industrial Estate, Gas Godown Lane, Goddev Fatak Road, Bhayander (E), Dist. Thane - 401105. (India)

Contact Us
+91-22 48255071, 48255072

UNIT 2 (MIDC)

Plot No. B-47, Addl. MIDC Anand Nagar, Ambarnath (E), Dist. Thane - 421506 (India)

Contact Us
+91(0251)2620542/43/44/45/46

UNIT 3 (KRDC)

Plot No K2, Industrial Gala F4A, D- Wing, MGN Properties, Opposite Godrej Co., Addl MIDC Anand Nagar, Ambarnath (E)- 421506 (India)

Contact Us
+91-2512620543/44

UNIT 4 (EUROPE)

(EMitech) Viale della Palma, 7, 70033 Corato BA, Italy (Europe)

Contact Us
+91-2512620543/44

UNIT 5 (THAILAND)

Thailand Representative: 163 Rajapark Building, 18th floor, Sukhumvit 21 Road (Asoke), Wattana, Bangkok - 10110, Thailand

Contact Us
G.Vivekanand
+6689 500 9821

Uzbekistan / Kazakhstan (Office)

TIT Company LLC: 100060, 2, A. Kahhar, Tashkent, Uzbekistan

Contact Us
Mr. Slava
+998 903540963

Israel (Office)

Ornatus Industrial Tech Ltd: Dam Hamacbim 36, 7178602 Modiin, Israel

Contact Us
Omri Fabian
+972 584844887

Australia & New Zealand (Office)

Linetech Pty Ltd: Po Box 3046, Browns Plains, Qld 4118, Australia

Contact Us
Eric Quevauvilliers
+61 (0)418 871 005

Bangladesh (Office)

House-10, Road-5 Priyanka City, Sector-12, Uttara, Dhaka-1230, Bangladesh

Contact Us
Md. Emtiaz Morshed
+8801747762200

Chile & South America (LatAM)

La Concepcion 165 Oficina 303, Providencia, Santiago, CHILE

Contact Us
+56 232 243 921



SCAN HERE



Our Mails

info@kerone.com
sales@kerone.com
marketing@kerone.com



Website

www.kerone.com
www.kerone.in
www.keronedryers.com
www.keronebiochar.com