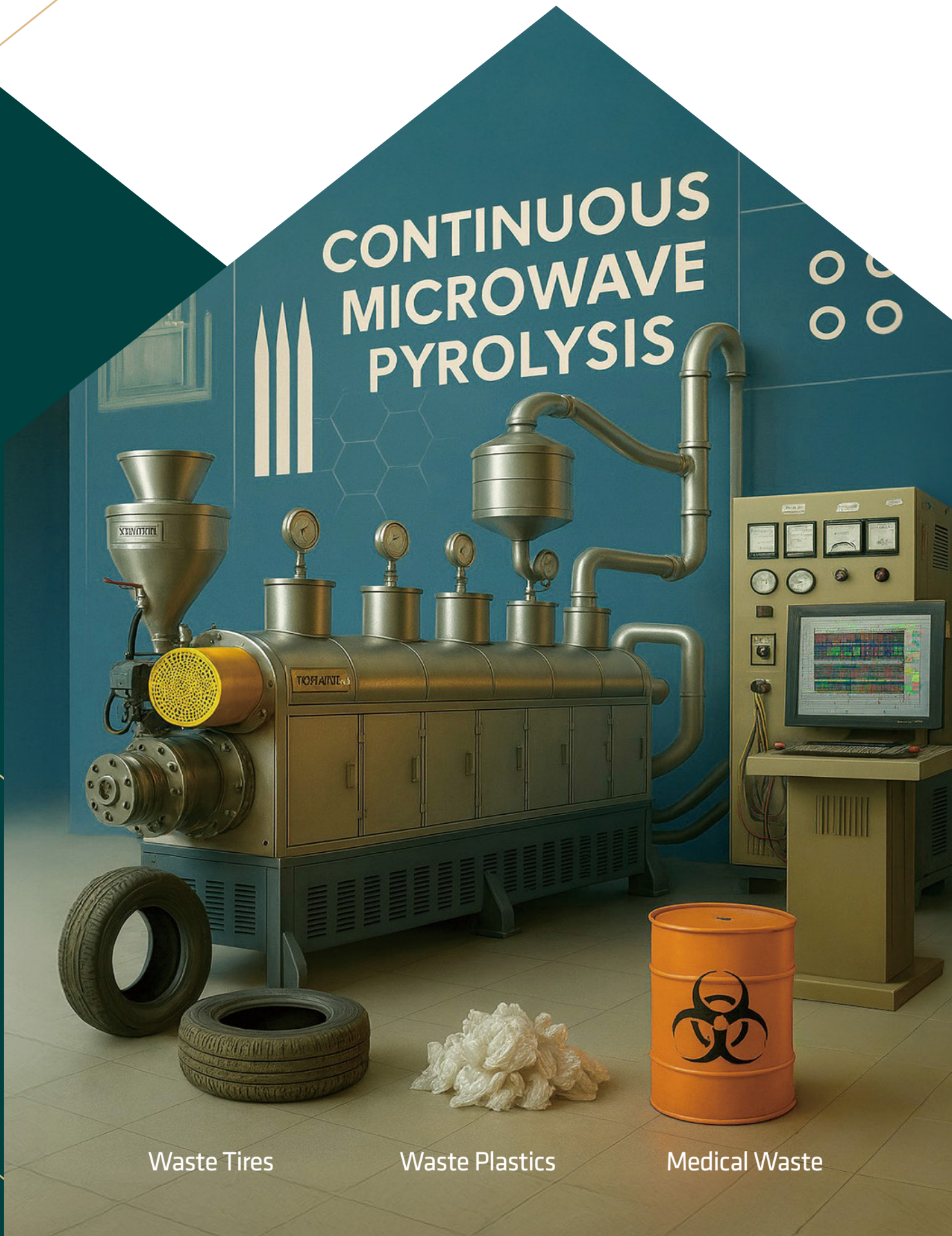
ILJIN Tech Co., Ltd.



ILJIN Tech Co., Ltd.

Click to View Technology Introduction Video
English

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Korean

Introduce

Since its establishment in twenty thirteen, ILJIN Tech has specialized in unit operation packages, oil and gas and chemical equipment manufacturing, EPC plant construction, and maintenance services.

With our expertise in equipment and skid unit manufacturing, we are now prepared to deliver high-performance operation units for the oil and gas, chemical, and petrochemical industries. Through strategic investments in technological innovation and skilled manpower, we continue to expand our capabilities both independently and in collaboration with leading technology partners.

At ILJIN Tech, we are committed to continuous research and development, recruiting top-tier professionals to establish a strong and comprehensive engineering system. As we evolve into a leading provider of unit operation packages, we remain dedicated to developing innovative technologies that enhance quality of life and contribute to a cleaner, more sustainable future.

Furthermore, we embrace our role as a socially responsible company. With passion, dedication, and an unwavering commitment to excellence, we strive to earn and uphold the trust of our customers and partners.

Head office & 1st Factory

2nd Factory

History

2023

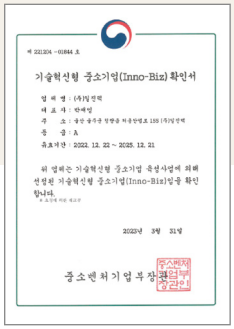
- Registered as Energy Service Company(ESCO)

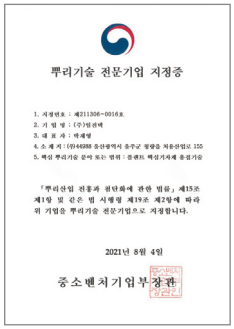
2022

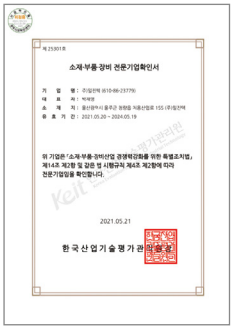
- Registered as Inno-Biz Company
- Acquired Certificate of qualified maintenance company from Korea Power plant for Heat Exchanger and Condenser
- Patent Registration for the Oil contaminated soil treatment system
- Patent Registration for the Rebar logistics automation system
- Patent Registration for the Heat treatment chamber and in-line heat treatment device

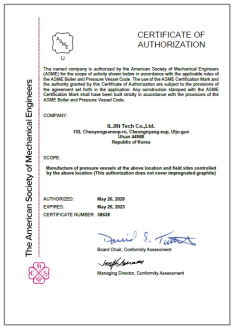
2021

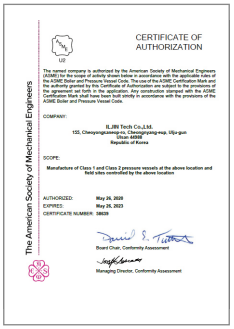
- Registered as Ppuri (Root) technology company
- Registered as a specialized company for Materials, parts, and equipment
- Acquired of government project for PES Microwave development of Oil contaminated soil treatment system
- Acquired ASME U & U2 Stamp

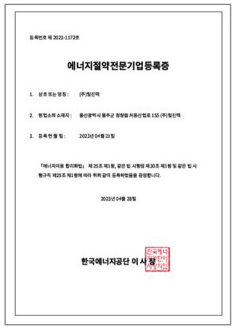












2020

- Acquired of government project for PES Microwave oven development
- Establishment of a corporate research center(R&D)

2017

- Authorization of Safety Health Management System [OHSAS 18001 : 2007]
- Authorization of Certificate of Korea High Pressure Gas Safety
- Authorization of the Risk Assessment and Clean Workplace
- Patent Registration for the Surface processing equipment

2015

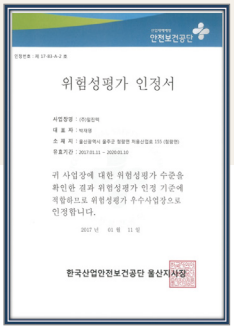
- Direct Production Confirmation Certificate from Government Marketplace
- Acquired the Venture Business Certification

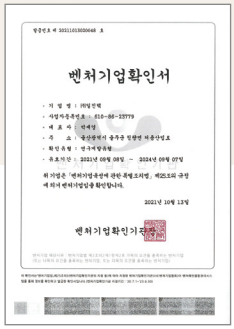
2014

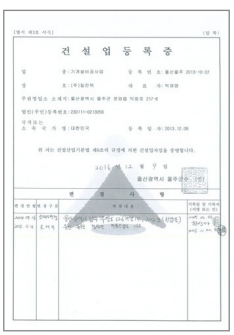
- Completed new factory construction in New General Industrial Complex
- [ISO 9001] Quality Management System Certificate

2013

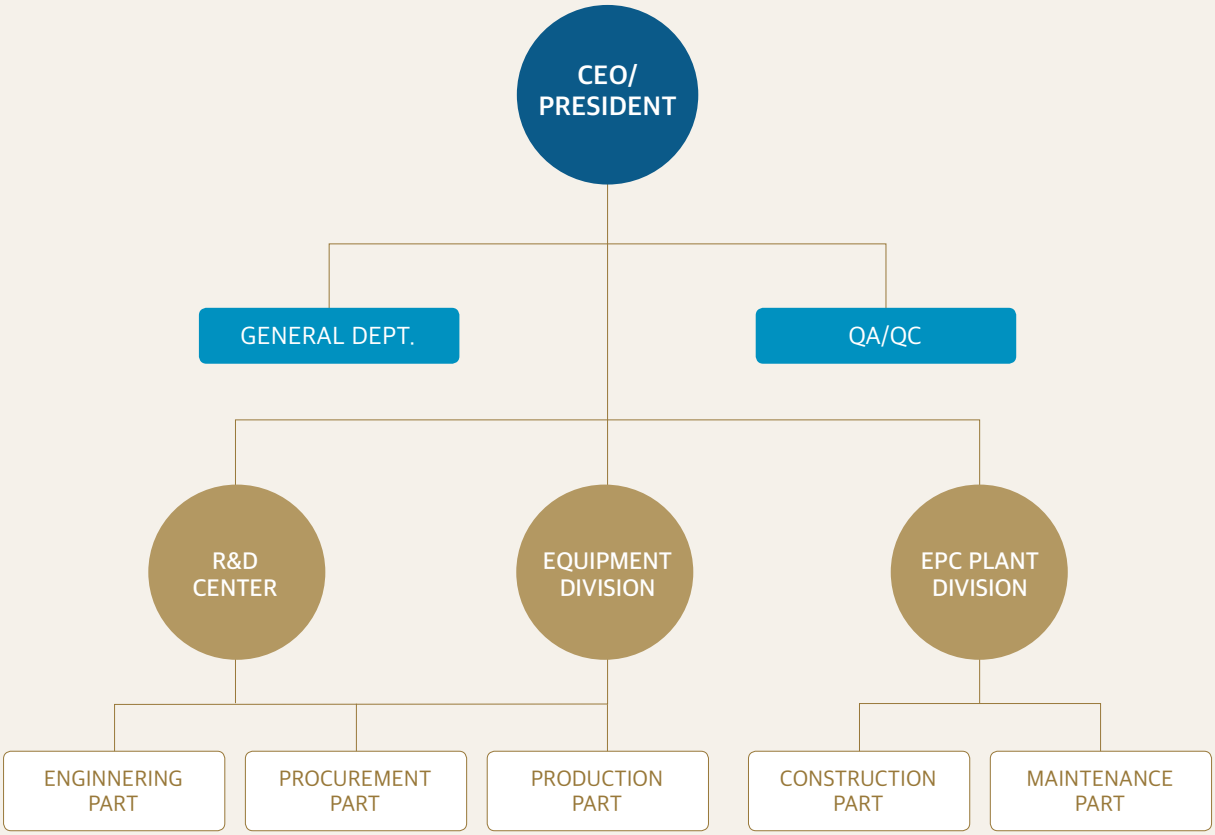
- [ISO 14001] Environmental Management System Certificate
- Registered as a Professional Construction Company
- Established ILJIN Tech Co., Ltd.(IJT)

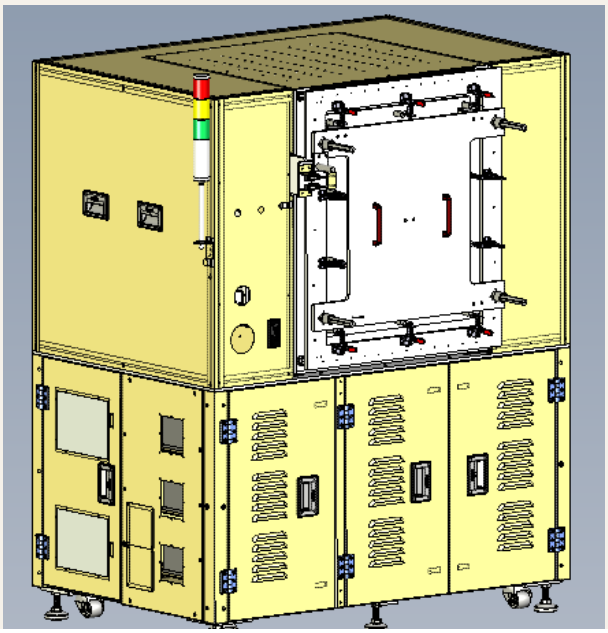






Organization





CEO Greetings

ILJIN Tech company is pleased to present the intoduce of the Waste Tire & Plastic Pyrolysis package for your project.

This advanced system integrates microwave technology into our independently developed waste tire & plastic pyrolysis equipment, enabling the efficient and sustainable recycling of waste.

As a specialized manufacturer, ILJIN Tech company has extensive experience in developing and producing this packages for a variety of applications. Our MPE(Microwave Power Equalizer) patent system enhances the efficiency and uniformity of the pyrolysis process, maximizing the recovery of valuable products.

At ILJIN Tech, we are dedicated to providing simple, cost-effective, and highly reliable microwave systems. From fabrication and process design to mechanical engineering and full unit construction, every aspect of our production is meticulously controlled to ensure top-tier quality.

This unwavering commitment guarantees that every system we manufacture delivers exceptional performance and long-term reliability.

We look forward to working with you and delivering an innovative, high-performance solution tailored to your needs.

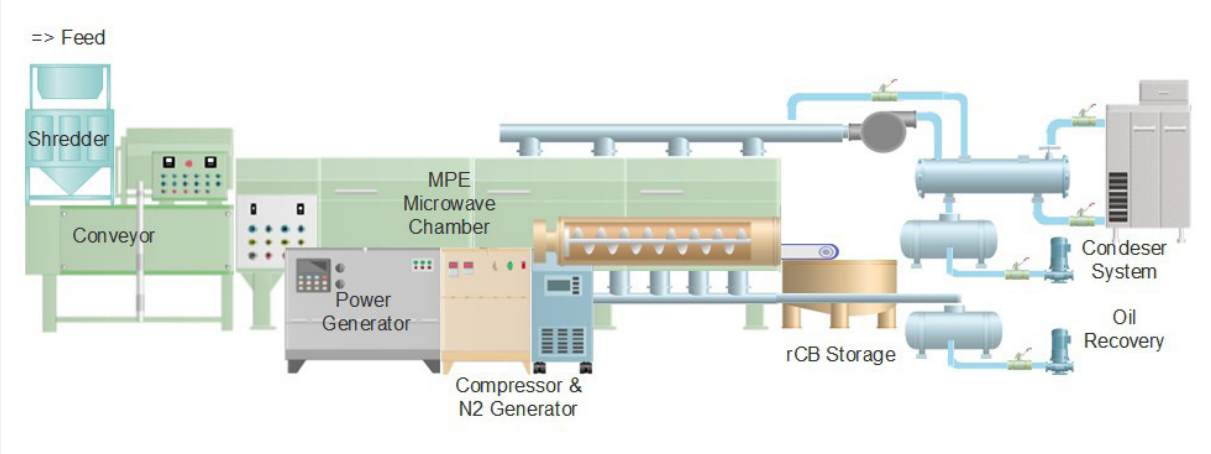
Thanks a lot.

CEO & President - Jaeyoung Park

Continuous process flow of pyrolysis system

Process Flow

Pretreatment → MW Reaction → Condensation → Gas Treating → rCB Handling → Control & Safety

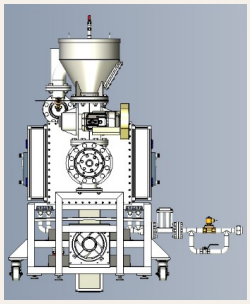
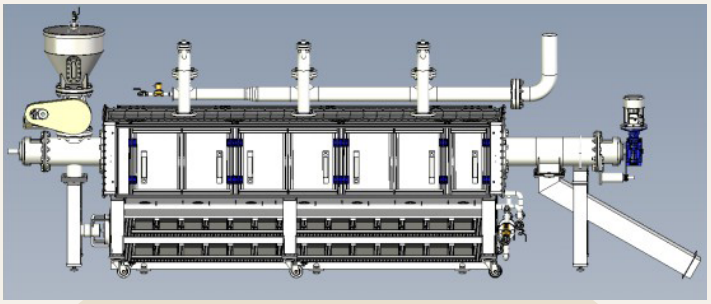
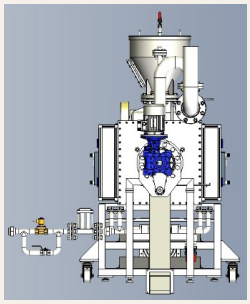


ILJIN Tech's microwave pyrolysis system, developed with investment from the Korean government, is designed to continuous pyrolysis process of waste tires & plastics.

Once the waste chips are fed into the system, they undergo pyrolysis within just 10 minutes, efficiently breaking down into pyrolysis oil, carbon black, and pyrolysis gas.

This advanced system can reach temperatures of 600 degrees celsius in just one hour.

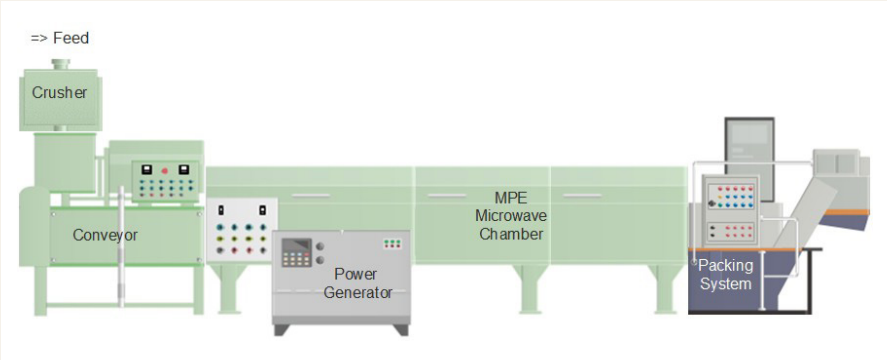
The pyrolysis gas produced is purified through a scrubbing system and can be utilized as an additional energy source via a boiler etc.

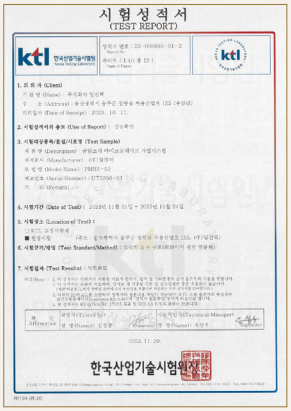
Continuous process flow of medical waste treatment system

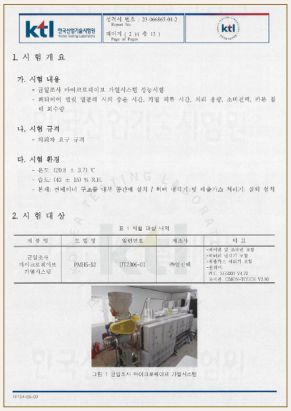
Process Flow

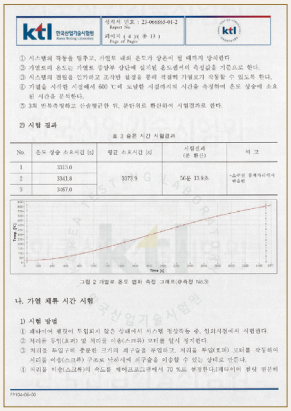
Pretreatment → Crushing → MW Reaction → Condensation → Packing → Control & Safety

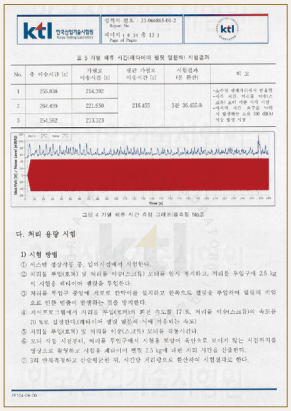


Test report of Korea Testing Laboratory - Certification body in Korea government









1. Pre-heating time (600℃/hr)
2. Process time (216s)
3. rCB rate (34.1%)
4. rCB yield of pyrolysis (99.9%<)

Continuous pyrolysis system for waste tire and plastic

The Main Pyrolysis Reactor System is the heart of ILJIN Tech's advanced tire and plastic recycling technology.

It utilizes a PES microwave-assisted screw type continuous reactor to thermally decompose waste rubber and plastics into valuable products such as pyrolysis oil, carbon black, and pyrolysis gas.

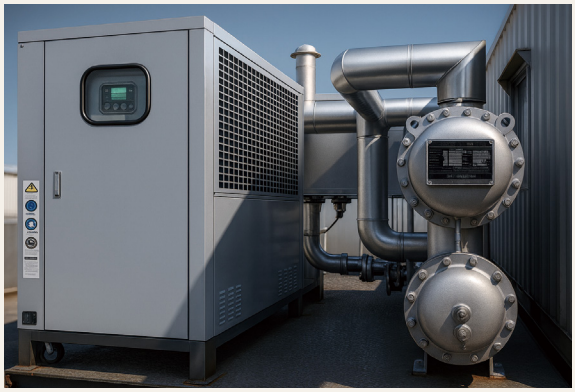
The reactor's screw mechanism ensures uniform material transport and mixing, while the microwave energy penetrates directly into the material structure, achieving rapid and uniform heating without external combustion.

Unlike conventional rotary kiln or batch-type systems, ILJIN's design provides precise temperature control, shorter residence time, and superior energy efficiency.

The system is fully enclosed and equipped with PES microwave system, **maintaining stable operational temperatures up to 600 °C.**

All process parameters—including screw speed, pressure, and temperature—are continuously monitored and controlled through an integrated PLC-HMI system, ensuring safe, automatic, and continuous operation.

Vapor condensation system



The vapor condensation system is a key module designed to efficiently condense and recover pyrolysis oil from the hot vapor during the pyrolysis process.

Using an air cooler, the vapor is initially cooled, followed by a secondary stage using a shell & tube heat exchanger with a water-based cooling loop to achieve stable oil condensation.

The condensed oil and water are automatically separated in the oil-water separator, and the recovered oil is transferred to a storage tank for use as a fuel or feedstock.

All operations are controlled via a PLC-HMI monitoring system, ensuring stable, high-efficiency performance with minimal maintenance requirements.

Feed, products & by-products of waste tire pyrolysis

1. Waste Tire Chip

Shredded waste tires, as raw material for the pyrolysis process.

2. Recovered Carbon Black (rCB)

Solid residue obtained after pyrolysis, a valuable material for pigment and rubber reinforcement applications etc.

3. Pyrolysis Oil

High-calorific liquid fuel produced through thermal decomposition of polymers, usable as an industrial fuel oil or refinery feedstock.

4. Pyrolysis Gas

The pyrolysis gas produced is purified through a scrubbing system and can be utilized as an additional energy source via a boiler etc.

5. Steel Wire

Recovered steel wire is magnetically separated, baled, and sold as recyclable scrap for steelmaking etc.

6. Textile Fibers

Separated polyester / nylon / rayon fibers are baled and used as fuel or insulation filler etc.

All products are efficiently recovered through ILJIN Tech's integrated continuous system, designed for energy optimization, emission control, and high product purity.

PES Microwave heating System (Batch Type)

This advanced **PES Microwave Heating Systemis** a batch-type configuration designed for precise thermal processing using controlled microwave energy.

It is widely applied in **material curing, composite polymer treatment, and medical waste sterilization**.

The system features **uniform field distribution, energy-efficient magnetron control**, and **automated process monitoring** via a digital Human-Man-Interface(HMI).

Built for reliability and versatility, it ensures high-temperature uniformity and reduced processing time across various industrial and laboratory applications.

Waste to Energy, Carbon to Value

ILJIN Tech Co., Ltd.

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