Aetech, Creating Smart Cities With Smart Waste Management Solutions

About the Company

Aetech is a provider of AI-based waste management solutions. Founded in Incheon in 2020, Aetech aims to achieve a circular economy by recovering resources more efficiently through technological innovation and build a global value chain. Major solutions include the waste sorting AI robot Atron, the modular resource recovery automation facility airo-mrf, and Multi-tron, which helps better manage waste treatment in multi-use facilities and public housing.

Background

As existing waste sorting processes rely heavily on manual labor, the sorting efficiency is low and only a certain level of recycling rate is maintained. Additionally, these processes face structural limitations such as labor shortages as they are mostly labor intensive and have safety issues. In particular, there are clear limitations to accurately and swiftly sorting and recovering the diverse materials and forms of waste that arrive daily.

Aetech has developed an automated solution that integrates artificial intelligence (AI) and robotics to address these challenges. By combining high-precision recognition technology that analyzes the material, color, and shape of waste in real time with a modular design that can be installed in narrow spaces, Aetech has tackled the limitations of existing facilities and made its solution immediately applicable to various on-site environments.

The approach aims to improve waste sorting efficiency while doubling resource recovery rates compared to existing methods, ultimately contributing to the establishment of a sustainable resource recycling system.

About the Product

Aetech's main solutions are the waste sorting AI robot Atron, the modular resource recovery automation facility airo-mrf, and the customized waste treatment unit for households and businesses Multi-tron.

Atron is a product that combines high-speed delta robot arms with AI and vision technology, and it can sort over 52 types of waste based on material and shape. Official test results should that Atron's object recognition accuracy is 99.3%, and it can process up to 96 pieces of waste per minute. Additionally, Atron's suction gripper uses a blower vacuum system, rather than an air compressor, allowing installation without a separate control room and enabling flexible setup in limited spaces.

airo-mrf is a resource recovery facility that integrates pre- and post-recycling processes such as bag rupturing,

sorting, and washing. Compared to conventional sorting facilities, it improves resource recovery rates by over 200%, achieving a recycling rate of over 70% and enabling the production of high-purity recycled raw materials. The airo-mrf plant is designed in a modular format, allowing for flexible configuration to suit various on-site conditions.

Multi-tron is a compact, modular waste processing unit that can be installed in urban buildings such as shopping malls, sports stadiums, airports, and public housing complexes like apartment buildings. Multi-tron integrates pre-processing and sorting functions, enabling immediate collection and sorting of waste right upon disposal. The system enhances resource recovery rates, prevents contamination of recycled raw materials during transportation, and reduces odor and the spread of pathogens, thereby contributing to improved public hygiene.

Competitive Edge and Business Strategy

Aetech's strength lies in its lineup of solutions that can comprehensively automate the entire waste treatment process and the flexible business model that allows for their flexible adoption. The waste sorting AI robot Atron, the integrated resource recovery automation facility airo-mrf, and the customized waste treatment unit for households and businesses Multi-tron can be applied individually or in combination, enabling a wide range of applications from large-scale sorting facilities to small-scale residential and commercial sites. The business model plans to expand operations through subscription-based and lease-based services to reduce the burden of initial implementation. This enables customers to operate a stable solution that includes maintenance and AI update services. Additionally, the modular design allows for customized configurations tailored to specific sites, enabling rapid application across various industries and local government environments.

In terms of technological competitiveness, Aetech has developed and internalized all core technologies, including data labeling, artificial intelligence algorithms, robot control, hardware design, and plant design. This is backed by a robust intellectual property portfolio, including the registration of seventeen patents in Korea and application of patents around the world. This technological prowess has been recognized with international awards such as the Bronze Edison Award Bronze in 2025 and the 2024 World Intellectual Property Organization (WIPO) Global Award Finalist selection. As Aetech is technologically independent, it can accelerate product development, create customized on-site designs, and provide maintenance more rapidly.

In Korea, more than twenty Atron units are in operation at eight waste sorting facilities nationwide. In the global market, the company is solidifying its basis for global expansion by signing MOUs and PoCs with overseas companies and institutions in Australia, Vietnam, Singapore, and other countries, and securing local distribution networks and service partners.

Future Plans

▸ Airo-mrf under construction, targeting operation in 2026
▸ Enter overseas markets with selected distributors in Australia and New Zealand
▸ Participate in major international exhibitions and conferences (CES 2026, Pollutec 2025, etc.)
▸ Develop data-driven services to optimize the entire waste treatment process
▸ R&D to process various types of waste, including bioplastics, construction waste, and textile waste

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** The opinions expressed in this article are the author's own and do not reflect the views of KOTRA.*