

English



Korea Environmental Industries for Global Sustainability 2013

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Achieving both economic growth and better quality of life is humankind's longstanding aspiration. To that end, we need to tap natural resources in an environmentally sustainable manner and stop polluting environment in the process of consuming the resources.

Advanced nations have made a continuous effort and seen a significant progress in maximizing productivity of resources while realizing economic development that minimizes environmental pollution. They have sought ways to curb environmental degradation by inventing relevant technologies and nurturing industries.

The Republic of Korea is no exception in these matters. The country rose from the ashes of the Korean War in the 1950s and has achieved an unprecedented economic growth. Since becoming an OECD member state in 1996, the nation has dropped its aid beneficiary status and taken the role of donor. Unfortunately, like many other industrialized countries, it failed to avoid environmental pollution that came with rapid industrialization and economic growth.

However, Korea has handled the problems by setting up environmental policies and developing new technologies, thus accomplishing ceaseless growth and environmental conservation. In particular, "Environmental Technology Development Project" of the Ministry of Environment has greatly contributed to the growth of environmental technology in Korea over the last two decades. As a result, nine of Korean environmental technologies, including indoor air pollution reduction and advanced waste water treatment technology, are now regarded as the world's top five level.

Also, in an effort to further advance the environmental industry, the ROK has formed cooperative partnerships with many nations across the globe. In 2012, the nation was nominated as the host of the Green Climate Fund (GCF) secretariat, laying the groundwork for the ROK to make important contributions to the global community's effort to cope with climate change.

Taking a step forward, the new administration, launched in 2013, has laid out "creating a pleasant and sustainable environment" as a major national goal in order to ensure environmental welfare for healthier future. The Ministry of Environment will make an utmost effort to bring about sustainable development and make sure that all citizens enjoy the benefit of environmental welfare.

To that end, "the Third Round of Development Plan for Environmental Technologies and Industry (2013-2017)" has been established. Within the framework of the plan, 11 ministries will invest a total of KRW 6.3 trillion in technology development in waste-to-energy, water reuse, GHG emissions reduction and environmental disaster response over the next five years.

Going forward, with its expertise and knowhow, the MOE will actively be engaged in environmental technology cooperation with countries where environment need to be improved. The publication of the "Korea Environmental Industries for Global Sustainability 2013" is a part of the endeavor.

Among many Korean enterprises which participated in the Ministry of Environment's overseas environmental cooperation projects, only the best companies with tangible international business vision and technological competitive edge were selected for this book. It covers six environmental industry areas: construction/engineering, water treatment, air quality management, waste management, soil remediation and eco-friendly products.

I sincerely hope that this book will help introduce Korea's competitive environmental enterprises and technologies to the world, so we will contribute to the healthier future of the global community as a whole.

April 2013

Yoon, Seong-Kyu
Minister of Environment

윤성규

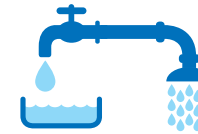


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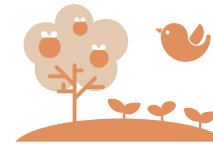
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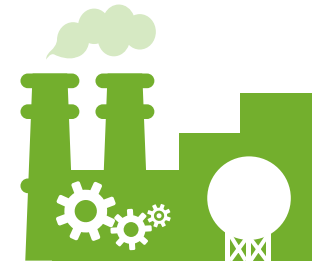


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Overview

DOHWA Engineering Co., Ltd., established in August 15, 1957, is Korea's No. 1 general engineering consulting company specialized in planning, validity survey, engineering, analysis, testing, supervision, test drive, evaluation, advising and instructions in every field of engineering, including water/sewer, water resource development, urban planning, road/traffic, structure, port, railroad, and environment. We have recorded 282.1 billion KRW in sales in 2011 as the No. 1 company in Korea and currently have 2,000 employees. In the environmental field, we are specialized in general environmental plants and new renewable energy facilities, including water/sewer, water resources, landfill sites, incineration facilities, recycling sorting facilities, MBT (RDF) facilities, LFG processing and power generation facilities, solar power generation, wind power generation, biomass power generation, and hydro-power generation. We are promoting various projects in Korea and abroad based on our eight overseas offices in Vietnam, Indonesia, etc. We are by far the first and the best global company that flies toward the future by expanding our engineering business to EPC.



New Renewable Energy in Mongolia



Landfill Gas in Daegu

Landfill Site in Vietnam

Technology/Services

Engineering Services

Based on our years of experience in the environment industry, we are performing validity survey, engineering, and CDM for environmental infrastructures, such as water/sewer, wastewater, waste, incineration, and energy recovery organic waste facilities, and have grown into a global company by participating in public development projects of local public development aid organizations, such as KOICA and K-EXIM Bank, and global organizations, such as Worldbank, ADB, and AfDB.

EPC (Engineering, Procurement, Construction)

The scope of EPC projects includes consulting for environmental/ power generation plants, validity survey, EPC and operation. Starting with EPC for the Biomass Power Generation Facility in Indonesia, we have promoted EPC for engineering, building, and operating power generation plants, including solar, wind, gas and flaming coal power generation plants.

Supervision & Construction Management

We are providing engineering documents/drawings, problem-solving for construction/ maintenance, and safety and environmental management to build the best facilities in CM, water/sewer, roads, bridges, complexes, subways, rivers, and environmental facilities. We also manage the entire process of construction projects efficiently, from planning and validity survey to selecting engineers, engineering management, and selecting contractors.



Track Records

- Consulting Services for Quang Binh Solar Cell Power Project (Aug 2012)
- Building service water facilities for Hlaing Thar Yar Township in Yangon, Myanmar (July 2012)
- Design and Supervision Consultants Services Issyk-Kul Sustainable Development (June 2012)
- Maintaining landfill sites/excavating landfill gas energy in Portillo Grande and Ancun, Peru (Mar 2012)
- Wastewater treatment plant for 130,000 tons/day in Columbia (Dec 2011)
- PMC for solar power generation plant in the Galapagos Islands, Ecuador (Dec 2011)
- EPC of KTH Biomass(Wood chip) Fired Power Plant, Indonesia (7.5MW) (July 2011)
- Sanitary waste landfill site in Benguet, Philippines (Apr 2009)

Patents/Certificates

- Landfill site with organic wastewater pond (Dec 2011)
- Sorting combustible wastes from construction wastes (Jan 2011): Patented in China (Oct 2012)
- Backside wind-cooled high-efficiency new renewable energy solar power generation facility (Sept 2009)
- Organic waste circulating landfill site with vertical injection well and pond (Aug 2009)
- Anaerobic digester for semi-liquid organic wastes (June 2008)

DOOSAN HEAVY INDUSTRIES & CONSTRUCTION



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Overview

Doosan Heavy Industries & Construction is Korea's leading power equipment maker and has played an instrumental role in the development of Korea's national economic development for the past 50 years by supplying various power generation equipment and water plants to more than 30 countries.

We are proudly recognized as the world's No. 1 seawater desalination plant producing company in the industry and gaining a reputation as a global EPC player in the power generation business. Not only that, we have supplied the largest number of nuclear power generation systems for the last 20 years.

We have secured key proprietary technologies in power generation by acquiring Babcock Energy of the UK, Skoda Power of the Czech Republic, and Lentjes of Germany, and set up global production bases by establishing Doosan VINA in Vietnam and Doosan IMGB in Romania.

In the eco-friendly green energy industry, the future growth engine, we have developed the WinDS3000™, the 3MW offshore wind power system, and are gearing up for its commercialization, while leading the adoption of the CCS(Carbon Capture and Storage) technology.



Shuaibah Desalination Plant, Saudi Arabia



Jebel Ali M Combined Cycle Power Plant, UAE



Korea WinDS3000™

Technology/Services

Power Industry

Doosan supplies a wide range of boilers from large-capacity boilers for power generation to industrial boilers, including the drum-type, once-through type, and fluidized bed boilers, backed by our experiences and technologies in engineering, manufacturing, installation, and maintenance. We have technologies in building high-efficient and eco-friendly boilers which remove impurities from the gas. We have gained recognition once again by manufacturing Korea's first gas turbine. As a nuclear power equipment manufacturer, Doosan is capable of providing total services from materials to finished products including reactor vessels and steam generators.

Water Industry

Doosan holds the global market leadership in seawater desalination industry and is one of the few companies in the world that offers proprietary technologies for all three main desalination processes: Multi-Stage Flash (MSF), Multi-Effect Distillation (MED), and Reverse Osmosis (RO). Based on these technologies, we produce water for daily use by more than 20 million people in the Middle East alone.

Green Technology Industry

Doosan has technologies for wind power (WinDS3000™), fuel cells, IGCC (Integrated Gasification Combined Cycle), CCS (Carbon Capture & Storage).



Track Records

- Taean IGCC : 300MW x 1, Korea Western Power Co., Ltd. (Korea, 2011)
- Yeongheung Wind Power: 3MW x 8, KOSEP (Korea, 2011)
- Rabigh Thermal Power Plant: 700MW x 4, SEC (Saudi Arabia, 2010)
- Ras Al Khair Seawater Desalination Plant: 228 MIGD, SWCC (Saudi Arabia, 2010)
- Shinan Land Wind Power: 3MW x 3, Shinan Wind Power Co., Ltd. (Korea, 2010)
- Braka Nuclear Power Plant: 1400MW x 4, Korea Electric Power Corporation (UAE, 2010)

Patents/Certificates

- Fuel Cell Power Generation Technology: 30 patents/utility designs in Korea and abroad, including Fabrication method of molten carbon fuel cell (June 7 2011)
- Wind Power Generation Technology: 13 patents/utility designs in Korea and abroad, including a wind turbine gearbox (Feb 8 2011)
- Nuclear Power Generation Technology: 82 patents/utility designs in Korea and abroad, including An Atomic Reactor Nozzle Inspection Apparatus of Nuclear Power Station (Feb 1 2007)
- Harmful Substance Removing Technology (CO₂ Separation Technology/Desulfurization/Denitrification/Dust Removal Technology) for Thermal Power Generation: 29 patents/utility designs in Korea and abroad, including Carbon Dioxide Separator using Solid Absorption and Carbon Dioxide Separating Method (Jan 23 2006)
- Seawater Desalination Technology: 97 patents/utility designs in Korea and abroad, including Method of Modeling Three-dimensionally the Evaporator of the Desalination Plant (Jan 5 2005)
- Waste Heat Recycling Technology (Heat Recovery Steam Generator): 43 patents/utility designs in Korea and abroad, including HEAT RECOVERY STEAM GENERATORS (Sept 5 2001)



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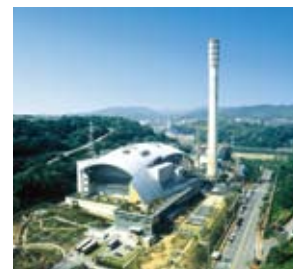
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○ Overview

Since the foundation in 1969, GS E&C has grown into construction expert on the strength of a balanced business portfolio that includes industrial plants, power generation and environmental, civil engineering, construction and housing projects. In 2012, GS E&C, of which the sales revenue is KRW 9,063 Bil., were ranked at ENR 32nd EPC Player, growing up to Global Total Solution Provider. GS E&C is leading the project in the areas of advanced waste water and sewage treatment, waste-to-energy project and other environmental facilities on the basis of the advanced technology and construction capabilities. Our advance into the overseas markets is best represented by successful projects including the BAPCO WWTP in Bahrain and the Azzour WDC II Project in Kuwait.



Jeonju Advanced STP



Mapo Recycling facilities

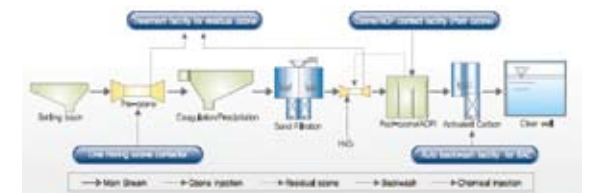


LCD P7 Environmental Facility

○ Technology/Services

• **KAWS (Korea Advanced Water System)**

- Post ozonation and pre-ozonation processes are added to conventional water treatment process
- Effective and economic removal of trihalomethane trace hazardous substances, and components that affect taste and odors



• **Advanced Wastewater treatment for sludge reduction using GS-lyso bacteria**

- This technology, involving anaerobic and anoxic processes and MBRs, was developed for the reduction of excess sludge and phosphorus control.
- Sludge reduction is achieved by sludge solubilization process using lysozyme-producing mesophilic bacteria.



• **Total Solution for waste management**

- Waste is recycled at all processes, converted to energy at waste treatment plant, and stabilized at sanitary landfill.
1. Assessment for waste management
 2. Automated waste collection system
 3. Optimal MBT designing technology
 4. Gasification/Melting technology
 5. Stoker incineration technology



○ Track Records

- Kuwait KOC (Kuwait Oil Company), Soil Remediation project (Area 290,000m²) (Mar 2012)
- KECO, Hanam Environment Facility Modernization and Forestation Project (STP 32,000m³/day, Incineration 48tons/day, etc.) (Sept 2011)
- Kuwait MEW (Ministry of Electricity & Water), Azzour water conveyance facilities (1,460,000m³/day) (Mar 2011)
- Bahrain BAPCO (Bahrain Petroleum Company), Wastewater Treatment Facility (24,000m³/day) (Nov 2010)
- Green Gimpo Corp., Gimpo STP Facility BTO Project (STP 3, Networks L=28.7km, etc.) (July 2009)

○ Patents/Certificates

- Integrated into DJSI Global Company for 3 consecutive years (2012)
- Received the Forbes CEO Award (2011)
- Received the iF Design Award in Germany for 5 years consecutively (2011)
- Received The Most Trusted Company Award for 3 years in a row (2011)
- The 'BIO-NET' construction method for sewage treatment was appointed as a new technology by the Ministry of Construction & Transportation (2000)
- Acquired certificate of ISO14001 Environmental Management System (1996~)
- Acquired Certificate of ISO9001 International Quality Management Standard (1994~)



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Overview

Established in 1999, Halla Energy & Environment is Korea's largest environmental plant specialist specialized in energy industry, including waste treatment, RDF power plants, waste heat recovery, and biogas; thermal power plants' atmospheric pollution preventive facilities and auxiliary facilities; water treatment for sewage/wastewater/water purification; civil engineering and construction for riverbed filtration and road construction; and consignment services for domestic waste incinerators and sewage/wastewater treatment plants. As of 2011, our annual sales were 306.1 billion KRW. As of October 2012, we have 9.1 billion KRW capital and 700 full-time employees.



Tancheon Riverbed Filtration



Mapo Resource Recycling Plant

Desulfurizing Facility for Boryeong Thermal Plants 7 and 8

Technology/Services

Balance of Plant

We design, purchase, and install desulfurizing, denitrifying, electrical precipitating, ash handling and coal handling facilities for power generation plants and we have done many projects for Korea Electric Power Corporation. We have used our original technologies to install desulfurizing and denitrifying facilities and completed their performance tests. For electrical precipitators, we have the largest portfolio in Korea.



Electrical Precipitator for Yeongheung Thermal Units 1 and 2

Waste Incineration and Treatment, RDF Combined Heat & Power Generation

We can design, purchase, and install combustible pretreatment plants (MBT), piping, incineration and thermal decomposition melting facilities, sludge treatment facilities, and RDF combined heat & power plants. Korea's first RDF combined heat & power plants completed in Iksan in March 2012 and localized the entire process of building 10MW RDF boilers and combined heat & power plants.



Anseong Incinerator

Sewage/wastewater Treatment and Riverbed Filtration

We are capable of designing small/medium sewage/wastewater treatment plants and have experiences in building and operating various environmental infrastructures, including anaerobic digestive plants, to use them to treat water for commercial use. In 2011, we received the order to build a sewage treatment plant in Yanbu, Saudi Arabia and have been acknowledged for our technologies and capacities abroad.



Paju LCD Industrial Complex Wastewater Treatment Plant

Track Records

- Ash Treatment Facility for Dangjin Thermal Units 9 and 10 (1,000MW x 2 units) (2012)
- Goyang Biomass Energy Facility (260 tons/day) Installation (2010)
- Collective Energy Heat Supply Project for Iksan Industrial Complex 2 (2008)
- Advanced Treatment for Jungrang Water Recycling Center (880,000 tons/day) and modernization project (250,000 tons/day) (2008)
- Flue Gas Desulfurizer for Boryong Thermal Units #1 and 2 (500MW x 2 units) (2007)
- Consignment for Ulsan-si Domestic Waste Incinerator (200 tons/day x 2 units) (2006)
- Electric Precipitator for Yeongheung Thermal Units 3 and 4 (800MW x 2 units) (2005)
- Seoul Mapo Resource Recycling Plant (250 tons/day x 3 units) (2001)

Patents/Certificates

- Patented Water Collecting Pipe with Cleaning and Reversible Washing System (Feb 2011)
- Patented Solid Matter Feeder for Thermal Decomposing Melting Facility (Feb 2011)
- Patented Domestic Waste Recycling Technology using Melted Exhaust Gas Grate-type Waste Incinerators and Char Combusting Molten Metal Furnace (Mar 2009)
- ISO 9001/14001 & OHSAS 18001 Integrated Management System Certificates (2001)
- 57 patents in Korea, 2 utility designs, 4 international patents, 8 trademarks, 2 intellectual property rights, and 2 new technologies

HANSOL EME



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Overview

Established in 2001, Hansol EME has constantly grown as a plant engineering specialist based on outstanding technologies and extensive experiences. We have successfully built environmental energy and papermaking plants with our outstanding technologies and performed O&M projects based on years of knowhow and advanced management techniques. We have achieved world-class capacities by successfully performing projects in Korea, Asia, Europe, Middle East, Africa, and Central/South America. We will be your reliable partner to bring you greater value and satisfaction based on our quality engineering technologies, efficient project execution systems, ceaseless R&D for core technologies, management innovation and global human resources management.



Poland Project Site



Nicaragua Project Site



Saudi Arabia Project Site

Technology/Services

Papermaking Plants

Papermaking refers to the entire process from raw material process to papermaking process, finalizing process, and utilities according to the type of paper (printing paper, industrial paper, and special paper). Hansol EME is independently performing validity survey, engineering, procurement, construction, and test drive for papermaking plants and capable of supplying O&M (Operation & Maintenance) technologies.



Sludge Incinerator

We have the largest portfolio in sludge incineration. Our technology is complete with our years of experience in One-Stop Process to transport, dry, incinerate, and operate sewage (wastewater) sludge.



Water Treatment Plant

We design, build, test drive, and operate optimized water and sewage (advanced) treatment processes. We are constantly developing new technologies based on our years of experience in treating wastewater from papermaking and introducing advanced water treatment techniques. Our pre-treatment technologies for seawater desalination include DAF (Dissolved Air Flotation), DMF (Dual Media Filter), and HRP (High Rate Plate).

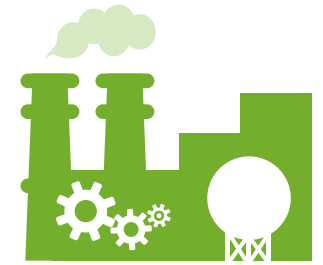


Track Records

- Saudi Arabia, DAF System for QIPP Desalin. & Demin. Plant (16,800m³/day, Sept 2012)
- Poland, MWIK Bydgoszcz City Sludge Incineration Plant (140t/d, Jan 2012)
- Saudi Arabia, Obeikan PM1 Upgrade Project (220,000t/y, Aug 2011)
- Ecuador, Santo Domingo City Water Pipe Expansion (124.3 km, 10,000 house connections, Nov 2010)
- Nicaragua, Juigalpa City Water Pipe Improvement & Expansion (23,328m³/day, Apr 2010)
- Vietnam, An-Hoa High Quality Coated Papermaking Plant (140,000t/y, Mar 2010)
- Norway, PISA PM2 Papermaking Plant Transfer (200,000t/y, June 2008)
- China, Hebei, Newsprint Papermaking and Incinerating Plant (300,000t/y, Apr 2003)

Patents/Certificates

- Biogas Moisture Removing System (Sept 2010)
- Biogas Pre-treatment System (Sept 2010)
- Anaerobic Digester System (July 2010)
- Filtration System Containing Dissolved Air Flotation Facilities (May 2009)
- Fixed Quantity of Fuel Feeder for Incinerator (Aug 2007)
- Porous Blocks for Lower Catchment (Dec 2004)
- Energy-saving Fluidized Bed Sludge Incineration System (Apr 2000)



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○ Overview

Hyundai Engineering Co., Ltd. is a member of Hyundai Motors Group. Established in 1974, we have been providing general engineering solutions in chemical engineering, power generation, energy, industrial plant, infrastructure, environment and new renewable energy industries. We have core capacities in every field from feasibility study to FEED, PMC Engineering, Procurement, Construction, Management, and Maintenance, and we have successfully completed more than 4,500 projects in 50 countries around the world. As of 2012, we have recorded 4.5 trillion KRW in orders, 2 trillion KRW in sales, and about 2,700 employees as an advanced global engineering company. In ENR USA, we are ranked in 47th place among the world's engineering companies.



Cheongshim HANT Site



Cheonan HANT Site



Chilgok HSC

○ Technology/Services

• HANT (Hyundai Advanced Nutrients Treatment Process)

HANT method is the sewage/wastewater treatment technology that applies MBR (Membrane Bio Reactor) using a membrane and is simpler than the previous method with innovatively improved efficiency. It can remove e-coli and germs without a separate disinfection system and recycle the entire treated water as reuse water. As it takes significantly less space compared to the previous process, it saves the cost of land purchase and civil works by about 40%. By unifying the system and automating the facilities, it reduces maintenance needs and sludge generation to save maintenance cost. It uses highly durable quality membrane to save repair and replacement cost.



• HSC (Hyundai Sludge Composer)

HSC method is the sewage sludge composting process facility that includes dry, compost, and second compost systems. Sludge is mixed with process product returned from pre-treatment (reduction of water content) and biodegradable organics are decomposed in aerobic conditions to reduce and stabilize sludge for composting. Sewage sludge that generates secondary environmental pollution is reduced by about 80% using this technology to generate odorless and easy-to-handle compost for environmentally-friendly recycling.



○ Track Records

HANT Method

- Cheonan Sewage Treatment Plant (4 steps), 40,000 tons/day (2012~2014)
- Yeongjong Sky City Sewage Treatment Plant, 24,000 tons/day (2011~2013)
- Cheonan Sewage Treatment Plant (3 steps), 30,000 tons/day (2007~2009)
- Hynix Semiconductor Wastewater Treatment Plant, 4,000 tons/day (2002~2003)

○ Patents/Certificates

HANT Method

- Patents in Korea: 7 patents, including Biological Nitrogen/Phosphorous Removing System & Method Using Submerged Membrane (Feb 2004)
- New Technology: Advanced Sewage Treatment Plant using Anoxic/Anaerobic/Aerobic/Degasifying Tanks and Submerged Membrane (Oct 2001)
- The 2nd Environmental Technology Award (Prime Minister) (Sept 1996)

HSC Method

- Andong-si Sewage Sludge Treatment Plant, 50 tons (2008~2008)
- Chilgok-gun Sewage Sludge Treatment Plant, 50 tons (2008~2009)
- Geoje-si Sewage Sludge Treatment Plant, 30 tons (2007~2008)

HSC Method

- IR52 Jangyeongsil Award (Deputy Prime Minister/Minister of Science and Technology Prize) (Nov 2004)
- New Technology: Grain-shaped Multilevel Sewage Sludge Composting Technology without the Need of Bulking Agent or Microorganisms (Feb 2001)
- US Patent: Apparatus and Method for Manufacturing Barnyard Manure Using Sewage and Sludge (Sept 2000)

KOLON GLOBAL CORPORATION



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Overview

Established in 1960, Kolon Global Corporation (formerly Kolon Construction) is a general construction company that has successfully performed various construction projects in civil construction for social infrastructures, such as subways, expressways, and bridges; architectural construction of various business/commercial spaces; housing construction led by its premium apartment brand, Haneulchae; environmental construction for wastewater treatment plants, water supply facilities, and waste incinerators; and general industrial plants, in Korea and abroad. As its name has become Kolon Global Corporation since the merger in 2011, it recorded 2,434 employees (as of the end of 2011, full-time employees only) and 3.61 trillion KRW in sales (as of the end of 2011). Our business areas include general construction, trading services, IT distribution and solutions, distribution services, and healthcare for Total Solution Providing Services.

Kolon Global Corporation has unmatched technologies and knowhow in the environmental industry. We have advanced systems and mindset in every field of environmental industry, including wastewater sewage treatment, water purification, dust collection for incinerators, waste recycling, and landfill facilities. As the environmental specialist that develops and plans projects and provides comprehensive services for project financing, engineering and construction, management and operation, we are leading the environmental industry in Korea and abroad.



Daejeon Terminal Sewage Treatment Plant (300,000m³/day)



Ratchaburi Water Treatment Plant, Thailand (271,440m³/day)



Yongin-si Environmental Center (100tons/day x 3Unit)

Technology/Services

• KIMAS Process (Advanced Sewage/Wastewater Treatment MBR)

Advanced sewage/wastewater treatment technology applies MBR process with PVDF reinforced membrane and stabilization pool before anoxic reactor to minimize DO inflow from internal recycling in membrane separation reactor and to ensure high nitrogen removal. It also allows perfect solid/liquid separation using the reinforced membrane in membrane separation reactor.

• NPR Process (Advanced Nitrogen/Phosphorous Treatment Technology using BioCube)

The process developed to biologically remove nitrogen and phosphorous. Effective biomass is increased by adding sponge BioCube in an aerobic reactor to allow nitrification that is resistant against load fluctuation and equally active in winter and to maximize nutritive salt removal without additional expansion.



• Combustible Waste Recycling System (K-MEGA SYSTEM)

The integrated combustible waste recycling system with pre-treatment process including specialized Trommel and Flip-Flop selector to produce quality RDF (Refuse Derived Fuel) in fluff state and recycle it using rotary-kiln gasification technology.



Track Records

- Southern Binh Doung Province Water Environment Improvement Project (WWTP Capacity: 17,650m³/day, Vietnam, Mar 2011~Feb 2013)
- Ruhunupura Water Supply Project (WTP Capacity: 17,500m³/day, Sri Lanka, Feb 2011~Aug 2014)
- Karnaphuli Water Supply Project (Contract No. KWSP-C-3) (Reservoirs: 26,000m³ & 8,500m³, Bangladesh, Jan 2011~July 2013)
- Wastewater Treatment Plant/ Effluent Reuse for South Amman STP-A (STP Capacity: 52,000m³/day, Jordan, May 2008~Nov 2013)
- Janglim Sewage Treatment Improvement Project (STP Capacity: 450,000m³/day, South Korea, July 2007~Nov 2009)
- Greater Galle Water Supply Project (Phase 2) (Transmission Line: 391km, Sri Lanka, Dec 2005~Aug 2008)
- Yongin City Environmental Center (Waste Incinerator Capacity: 100tons/day x 3 (Stoker), South Korea, Dec 2001~Oct 2005)
- Thien Tan Water Supply System, Dong Nai Province (WTP Capacity: 100,000m³/day, Vietnam, Feb 1999~May 2004)
- Ratchaburi Water/Wastewater Treatment System (WTP Capacity: 271,400m³/day, Thailand, Aug 1996~Oct 1999)

Patents/Certificates

- More than 30 patents in advanced sewage/wastewater treatment technologies, including advanced sewage treatment (July 2011)
- New environmental technology certificate: 'Advanced sewage treatment with separation membrane technology - I³ system' (No. 308, Mar 2010)
- New environmental technology certificate: 'Advanced water purification with separation membrane technology - K²IMAS' (No. 298, Dec 2009)
- Korea Green Technology Award (Minister of Environment's Prize): Sewage Separating Membrane (2009)
- Prime Minister's Prize at Korea Environmental Management Award: NPR Process (2007)
- 1st Prize at Korea Housing Corporation's VE Competition: NPR Process (2002)

POSCO E&C



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Overview

POSCO E&C, established in December 1994, is the best general construction company of Korea that pursues to be the global E&C company with accumulated plant engineering technology and knowhow and experienced manpower by building the world-class general steelworks. In 2011, we received orders for 14.4 trillion KRW (12,490 million USD) and achieved No. 1 performance among the construction companies in Korea. We have acquired levels BBB and Baa3 from S&P and Moody's, the world-class credit rating institutes, respectively. We have been acknowledged with the highest credit rating among the construction companies in Korea and abroad and currently have about 4,300 experts. We have the largest portfolio in Korea's environmental industry and we are growing into a global E&C group by exploring the markets in the Middle East, Southeast Asia, and South America based on our experience in building water treatment plants for steelworks in China, Indonesia, and Brazil and water treatment plants in Vietnam and UAE.



Gimpo Sewage Facility BTO



Jungrang Sewage Treatment Plant



Goyang-si Environmental Energy Facility

Technology/Services

Sewage/Wastewater Treatment

We have built a number of advanced sewage/wastewater treatment plants that can remove both organic matters and nutritive salts based on POSCO E&C's original technology called Bio-SAC BNR method. We have the best technology to apply Hydro J.B pre-treatment method and MBR method to recycle treated boiler feed water as industrial water.

Seawater Desalination and Water Purification

Apply high-efficiency low-energy SWRO method to use RO Membrane to remove ionotropic materials from seawater for desalination to reuse seawater as drinking water or industrial water. Also, we install water pipes and build water purification plants to supply drinking water to households from water sources.

Waste Treatment

We use resource recycling technologies to recycle resources and to minimize reckless destruction of nature. We pursue environmental preservation and higher quality of life and contribute to global warming prevention by processing wastewater stably to recycle waste resources and energy.



Track Records

- Gimpo-si Sewage Facility Private Investment Project (BTO): Green Gimpo Co., Ltd. (July 2009 ~ Dec 2012)
- Suwon Sewage Sludge Treatment Facility: Suwon-si, 450m³/day (June 2007 ~ Nov 2011)
- Pangyo, Seongnam Water Quality Recovery Center: Korea Land & Housing Corporation, 47,000m³/day (Feb 2007 ~ May 2009)
- Yangsan Resource Recycling Plant: Yangsan-si (Oct 2004 ~ Jan 2008)
 - Thermal Decomposition Melting Facility: 100 tons/day x 2 units
 - Recycling Plant: 80 tons/day x 1 unit
- Ansan Terminal Sewage Treatment Plant: Ansan-si, 385,000m³/day (July 2004 ~ Mar 2009)
- Jungrang Terminal Sewage Treatment Plant: Seoul, 46,000m³/day (Feb 2004 ~ Oct 2007)

Patents/Certificates

- Sewage Sludge Auxiliary Fuel Production Technology for Thermal Power Plants using Unified Fixed Dryer and Sorter (Aug 2012)
- Sewage Treatment Technology in Rainy Weather using Air Bubble Impregnation High-speed Floatation Separation Process (Nov 2011)
- Advanced Sewage Treatment Technology using Hollow Fiber Separating Membrane System and 2-layer Anoxic Reactor (I3 System) (Mar 2010)
- Biological Nutrient Removal Bio-SAC Process (Bio-SAC BNR Process) using Bio-SAC (waste tire medium) (May 2001)

ANT21 CO., LTD.



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Overview

ANT21 Co., Ltd. is the specialized company that independently develops ANT water treatment method to engineer and supply the best customized facilities for each site's water quality and environment.

Established in May 2002, ANT21 Co., Ltd. is laying its foundation in the water treatment market with its original water treatment systems and products and has quickly grown to achieve 300 million KRW capital, 5,566 million KRW sales, and 219,000 USD exports as of 2011.

Being recognized for our technological capacities, we have acquired the NET New Technology Certificate and have been selected as one of 10 Outstanding Environmental Industries in Korea in 2012.



Daedeok Industrial Complex Phosphorous Treatment Site



Daejeon Wastewater Treatment Plant



Air Diffuser Agreement with Issing Philip, China

Technology/Services

High-efficiency Diffuser

UFO Diffuser uses triangular pitch method to generate even bubbles across the front for outstanding oxygen transmission and agitation and low pressure loss to save energy. It is widely used in ordinary water purification plants, wastewater treatment plants, and sewage disposal tanks.



High Efficiency Fluidized Contacting Media

High-efficiency fluidized media is the water-purifying media that uses aerobic microorganisms to decompose and remove pollutants and anaerobic microorganisms to remove nitrogen/phosphorous, and is widely used for excretions, merged wastewater disposal tanks, and organic wastewater.



ANT Blower

ANT blower generates compressed air and applies multistage centrifugal turbo blower that is directly connected to inverter-powered permanent magnetic power motor. Consists of air bearing, impeller, high-speed motor, inverter, controller, and cooling system technology.



Track Records

- Hagik Terminal Sewage Treatment Plant, Incheon (125,000 ton/day)
- Gunsan Terminal Sewage Treatment Plant (200,000 ton/day)
- Ilsan Terminal Sewage Treatment Plant (270,000 ton/day)
- Ulsan Terminal Sewage Treatment Plant (250,000 ton/day)
- Gajwa Terminal Sewage Treatment Plant, Incheon (260,000 ton/day)
- Jungrang Terminal Sewage Treatment Plant, Seoul (1,120,000 ton/day)
- Onsan Terminal Sewage Treatment Plant, Ulsan (150,000 ton/day)
- Gimpo Sewage Treatment Plant (40,000 ton/day)

Patents/Certificates

- Outstanding Environmental Industry Certificate_Ministry of Environment (July 5 2012)
- Small/Medium Business Performance Certificate_Small/Medium Business Administration (May 18 2012)
- INNO-BIZ Certificate (May 15 2012)
- NET New Technology Certificate (Apr 26 2012)
- Affiliated Research Institute Certificate_Korea Institute for Advancement of Technology (Sept 30 2010)
- Quality Management System Certificate_ISO 9001 (Sept 17 2009)
- Environmental Management System Certificate_ISO 14001 (Sept 17 2009)
- Multistage Air Diffuser, Patent No. 10-1010579 (Applied Dec 17 2008/Registered Jan 18 2011)

BKT CO., LTD.



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Overview

Established in 1995, BKT Co., Ltd. is a small/medium business specialized in water treatment with 22.1 billion KRW total assets, 1.14 billion KRW paid-in capital, and 70 full-time employees as of 2011. We achieved 18.3 billion KRW in sales and 3.86 billion net profits in 2011 with No. 1 market share in Korea's livestock excretion treatment industry. We are currently doing business in water treatment for sewage/wastewater and livestock excretions, high concentrate-viscosity material treatment using membrane, wastewater reuse membrane, and renewable energy and energy-saving industries based on our advanced technologies and capable engineering manpower. We established BKT United in the U.S. in 2008 to explore the environmental market in Central and North Americas and in Europe and expanding global business based on our original technologies developed in Korea.



Jungrang Water Recycle Center



Dangjin Public Livestock Excretion Treatment Plant

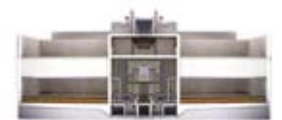


Tihanji BGP in the Netherlands

Technology/Services

• BBF (BKT's Biofiltration System)

- BBF is the sewage treatment technology that uses highly concentrated microorganisms to ensure stable water discharge in case of radical water quality fluctuation and water temperature drop in winter.
- BBF is the multifunctional water treatment technology that removes nitrogen and decomposes organic matters by highly concentrated microorganisms in the filter layer and removes micro suspended solids through filtration.



• BCS (BKT's Customizable Solution)

- BCS consists of a combination of processes optimized for treating highly concentrated wastewater, including biological treatment for nitrogen removal, advanced oxidation process for removing non-biodegradable matters, and residual matter removal process.
- BCS is the water treatment technology that uses various processes and alterations to treat domestic sewage and waste in addition to livestock excretions and highly concentrated wastewater.



• FMX (Anti Fouling Membrane Solution)

- FMX is the new generation membrane technology that applies anti-fouling technology to remove the contaminant layer formed on the surface of membrane by eddy flow generated by Vortex Generator.
- FMX effectively inhibits fouling to separate high concentration/viscosity mixture to treat residues from digestive action, refine waste water, and refine and concentrate raw materials.



Track Records

- Sewage Treatment: 6 plants, including Seoul city Jungrang Water Recycle Center
- Tertiary Treatment & Nitrogen Removal: 29 plants, including Gwangju city Docheok Sewage Treatment Plant
- CSOs and Primary Treatment: 2 plants, including Seoul city Seonam Water Recycle Center
- Livestock Excretion Treatment: 31 plants, including Dangjin city Public Livestock Excretion Treatment Plant
- Sewage Treatment: 22 plants, including Pocheon city Yeongjung Sewage Treatment Plant
- Wastewater Treatment: 2 plants, including Cheongdo-gun Punggak Agricultural Complex Wastewater Treatment Plant
- Chemical Waste Retreatment: Methylcellulose Treatment for Samsung Precise Chemicals
- Anaerobic Digestive Waste Treatment: MTI Bio Digestate Waste (Netherlands)
- Livestock Excretion Recycling (Composting): 4 plants, including Boeun-gun Public Livestock Excretion Treatment Plant

Patents/Certificates

- Excellent Environmental Company of the Ministry of Environment (July 2012)
- Green Exporter of Korea Environmental Industry & Technology Institute (Apr 2012)
- Quality Management (ISO 900) and Environmental Management (ISO 14000) Certificate (Jan 2010)
- New Environmental Technology No. 196 (Mar 2007), No. 243 (Jan 2008), No. 296 (Dec 2009) Certificates.
- New Environmental Technology Verification No. 96 (Mar 2007)
- Patent · New Technology Certificate: Sewage/Wastewater Treatment System with Multiple Filter Layers Filled with Filter with Different Specific Gravity (June 2006)
- Patent: Vortex Generating Rotor and the Filter System Using It (July 2005)
- Patent · New Technology Certificate: Sewage/Wastewater Treatment System with Sequencing Batch Reactor and Flow Control Tank Filled with Filter (Mar 2004)

ECODAYS CO., LTD.



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○ Overview

Ecodays Co., Ltd. was established in 2003 specializing in recycling highly concentrated organic wastes (wastewater, livestock excretions, sewage sludge, etc) into bio gas and treating wastewater in high-efficiency processes. We started business in the market after developing organic wastewater treatment method using PFR flow while performing a project for the Ministry of Environment.

We started supplying products in 2008 and have achieved 4.71 billion KRW sales in 2012. We currently have 24 full-time employees and have established an affiliated research institute to pursue technological improvement.

We have also signed an MOU with 'Cheonin Environment,' an environmental company in China, to make efforts to start global business. In 2012, we have also been selected for the 1st Outstanding Environmental Business by the Ministry of Environment.



Ulsan Yongyeon Wastewater Treatment Plant
Digestive Supernatant Treatment Facility



Sokcho Research Recycling Facility



G Farm's Livestock Excretion
Treatment Facility

○ Technology/Services

• Ecodays' Plug-flow Anaerobic Digester (ECOPAD)

Our original method called ECOPAD is the technology to use highly concentrated organic wastes to produce bio gas. This technology uses independently developed cells to divide the digester into multiple stages and form gas chamber in each stage. This allows agitation by fluid flow without mechanical agitation. It can also be operated with big loads of solids (10kg/m³·day) and increases the amount of bio gas even in short HRT.

• Ecodays' Plug-flow Aerobic Tank (ECOPAT)

This method divides the inside of reactor into multiple stages to form independent gas chambers on top of each stage. It maximizes the agitation of fluid and oxygen transmission efficiency to maintain highly concentrated MLSS without the use of a carrier. Therefore, this method can be operated with relatively high volume of BOD load (8kg/m³·day) compared to standard CSTR biological reactors and significantly reduce the long processing time of highly concentrated organic wastewater for stable processing.



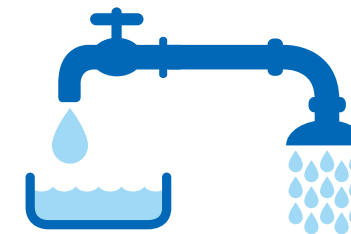
○ Track Records

- Organic waste recycling facility in Jecheon city (52m³/day, May 2012)
- Organic waste recycling facility in Cheongju city (200m³/day, May 2012)
- Organic waste recycling facility in Sokcho city (80m³/day, Jan 2012)
- Aeration tank improvement for Gongju Livestock Excretion Public Recycling Facility (30 tons/day, Jan 2012)
- SBK anaerobic digesting solution pretreatment facility installation for Ulsan Yongyeon Wastewater Treatment Plant (600m³/day, Dec 2011)
- Sludge digesting treatment facility for recycling wastewater into bio gas in Seoul Metropolitan Area (540m³/day, May 2011)
- Anaerobic digesting solution wastewater treatment facility for food wastes in Dongdaemun-gu, Seoul (150m³/day, Mar 2010)
- Livestock excretion treatment facility for G Guild of Farmers, Inc. (30 tons/day, Dec 2006)

○ Patents/Certificates

- Designated as outstanding environmental industry by the Ministry of Environment (July 2012)
- Methane gas production technology using multistage vertical E.PFR-2 digester certified as green technology (Oct 2010)
- Patents Overseas: 15 cases, including fluids fluxion method and plant for wastewater treatment (US, CHINA) (Oct 2009)
- Highly concentrated organic wastewater treatment technology using multistage vertical PFR reactor certified as new technology by the Ministry of Environment (Apr 2009)
- Patents in Korea: 23 cases, including Building Biological Reactor for Integrated Wastewater Treatment System and Its System (Aug 2004)

ECONITY CO., LTD.



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Overview

ECONITY is a membrane expertise company, developing various high quality membranes with its own technology and manufacturing those membranes in the automated assembly line. Also we provide water/wastewater treatment equipment/system associated its application and maintenance service. we provide comprehensive services such as optimized technology research corresponding to various needs of customers, production of high quality membrane, exhaustive quality control, ideal customized design, integrity construction, and quick & complete technical support thanks to wide experience and know-how accumulated over the years.

We have variety of achievements from the small size to the medium & largest size in the sewerage treatment plant industry. The significantly large quantity of wastewater treatment plants demonstrates its reliability and acceptance of ECONITY membrane technology.



Daegu Dalseong Industrial Complex WWTP (25,000m³/day)



Incheon Chongna Gongchon STP (65,000m³/day)



Econity Property

Technology/Services

ECONITY CF Series (Submerged Type Module)

- World's First HDPE Hollow-fiber Membrane by Stretching Method
- Highly Efficient Pore Structure
- Asymmetric Structure
- Operator-friendly Design, The Patented Cartridge Module
- Customized Cassette Design
- Optimized Diffuser
- High Packing Density of Module



ECONITY PF Series (Pressurized Type Module)

- World's First PVDF Hollow-fiber Membrane by Stretching Method
- World's Best Permeability and Tensile Strength
- Larger Capacity Module
- Highly Efficient Hydraulic Module Design



KSMBR Process

- Certified advance wastewater treatment MBR process proven by the largest performance in Korea
- Maximize using the influent carbon source through shifting inflow and tri-sectional aeration in the parallel reactor
- Improvement of inhibition factor for denitrification by residual DO from the existing- intermittent aeration tank
- Stable nutrients removal by maximum use of organic matter despite of the low C/N ratio condition
- Low sludge recirculation rate (1Q~2Q)

Track Records

- Incheon Chongna Gongchon STP (65,000m³/day) (Commissioned Date 2012)
- Daegu Dalseong Industrial Complex WWTP (25,000m³/day) (Operating Start Nov 2008)
- Okcheon Municipal WWTP (18,000m³/day) (Operating Start Oct 2008)
- Jinhae Ungdong STP (10,000m³/day) (Commissioned Date 2011)

Patents/Certificates

- Local Patents 10, International Patents 4
- ISO (Feb 2009)
- KSMBR New Environmental Technology (Sept 2008)
- KSMBR Certificate of Green Technology (Mar 2011)
- e-MBR New Environmental Technology (May 2011)
- PVDF Membrane NSF (June 2012)

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○ Overview

Filcore Co., Ltd. is the venture business specialized in making separating membranes and we are supplying various competitive products, including UF Hollow Fiber Membrane Filters, through constant research and development.

In Korea, we are supplying filters for water purifiers and for water ionizers to a number of large water purifier makers based on our original knowhow and technology.

In the overseas, we have built partnership and sales networks through direct/indirect partnerships in Japan and supplying products to MEDIA (China) and WATTS (USA) through local partners in Europe (Russia, Germany, France, etc), China, and USA. We are also expanding business to Thailand, India, and Vietnam.

○ Technology/Services

• UF Membranes Element Filter for Home Water Purifiers/UF Membranes Element Filter for Water Ionizers

- Various sizes & designs - May be customized for various purposes.
- Replaces RO for affordable cost - Minimizes waste of water, may be used without water tank or pump. Low initial cost and maintenance cost.
- Air-Vent - Prevents clogging by air inflow.
- Uses high-safety, high-performance, high-molecular polymers.
- Hydrophilic water membrane protects membrane from contaminants.
- Even distribution of pores to achieve perfect antibacterial performance and forms more pores compared to other products for longer lifespan (Pore Size: Nominal 0.1 μm).
- All products are tested by 100% Laser Particle Counter (anastomosis, disconnection and pore test).



UF Membranes Element Filter for Home Water Purifiers



UF Membranes Element Filter for Water Ionizers

• UF Membranes Element Filter for Natural Pressure Water Purifier

- Many pores for sufficient flow.
- Various sizes & designs - May be customized for various purposes.
- Uses high-safety, high-performance, high-molecular polymers.
- Hydrophilic water membrane protects membrane from contaminants.
- Even distribution of pores to achieve perfect antibacterial performance and forms more pores compared to other products for longer lifespan (Pore Size: Nominal 0.1 μm).
- All products are tested by 100% Laser Particle Counter (anastomosis, disconnection and pore test).



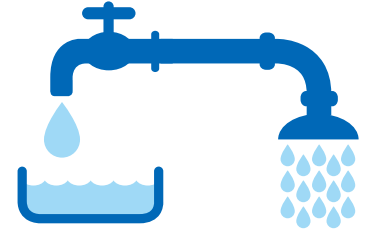
○ Track Records

- Exported UF Hollow Fiber Module to India (Oct 2011)
- Agreement to export 1,000,000 USD/year (China) (Jan 2010)

○ Patents/Certificates

- Acquired NSF Certificate (June 2012)
- Acquired ISO 9001:2008 Certificate (ICR: Reg. No. Q470910, Sept 2010)
- Patented 「Channel System for Potting Hollow Separating Membrane and the Centrifugal Potting System Using It」 (Patent No. 10-2008-0051065, May 2008)
- Patented 「Polysulfone Hollow Fiber Membrane with Excellent Water Permeability and Its Manufacture Method」 (Patent No. 10-2008-13448, Feb 2008)

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○ Overview

Established in 1989, Gentro Co., Ltd. has participated in the environmental industry to develop critical technologies and products and performed engineering, construction, and test drive to accumulate technologies and experience. Through ceaseless R&D, we have developed a service system to satisfy the various needs of customers and realize customer satisfaction. In 2011, we recorded 33.9 billion KRW sales. As of 2012, our total equity is 29,121 million KRW, paid-in capital is 3,893 million KRW, and we have 101 full-time employees. We are making efforts to improve technology by acquiring new environmental technologies, patents, and environmental marks.



Gangbuk Water Purification Site



Jeongreung Water Reservoir Site



Taeon White Sand Beach Site

○ Technology/Services

• PDF Perforated Baffle Wall/PDF Baffle Wall/PDF Partition Wall

PDF (perforated) baffle wall (partition wall) refers to the baffle installed inside pure water reservoirs (water reservoirs) to improve the contact time of pure water reservoirs (water reservoirs) in appropriate concentration contact time (CT) using PDF (Polyethylene Double Frame) panels made of HDPE (High Density Polyethylene). It is a new clean and durable product that reduces construction time, ensures durability, and generates no environmentally harmful materials.



• PE LINING

This indoor/outdoor waterproof method uses PE (Polyethylene) material for semipermanent performance, durability, acid resistance, alkaline resistance, no harmful materials, and recyclability. Unlike waterproof paint, it does not need regular touchup for easy maintenance and its long lifespan delivers economical value and workability.



• Geotextile Tube

Geotextile tube has achieved environmentally-friendly and structurally stable product through investment in new technologies and has been known as an economical technology by reducing construction period. It is more popular abroad than it is in Korea and it is expected to grow in Korea. It can be used for coastal sedimentation prevention and cofferdam methods. This product has infinite possibilities in terms of variation and application.



○ Track Records

- Uljin HQ Water Purification Center Discharge Tank PE Lining Installation (Korea Hydro & Nuclear Power, Sept 2012)
- PDF baffle walls for Ulaanbaatar City Yarmag Pressurizing Center and Reservoir, Mongolia (Korea International Cooperation Agency, May 2012)
- Embankment for Nakdonggang (River) Restoration 34 Zone Pumping Station (Gyeongsangbuk-do County Office, Mar 2011)
- Guui Water Purification Center Rebuilding and Baffle Wall for Advanced Water Purification Facility (Seoul city, Dec 2010)
- Taeon White Sand Beach Coastal Improvement (Taeon County Office, Mar 2010)
- Structural repair at 4 sites, including Jeongneung Reservoir 2 (The Office of Waterworks Seoul Metropolitan Government, Nov 2008)
- Gangbuk Water Purification Center Perforated Baffle Wall (The Office of Waterworks Seoul Metropolitan Government, May 2005)

○ Patents/Certificates

- Gentro PE waterproof sheet environmental mark, No. 9840 (July 2012)
- New technology for PE sheet wall waterproof method, No. 520 (Nov 2009)
- New environmental technology, advanced sewage treatment technology using RPS-SBR, No. 141 (Oct 2005)
- New GTR baffle wall technology, No. 397 (Oct 2003)
- New bottom-reducing perforated baffle wall technology, No. 306 (Nov 2001)

GREEN ENTECH CO., LTD.



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○ Overview

Established in 1991, GreenEnTech Co., Ltd. is an environmental company specialized in water treatment. With 20 years of accumulated professional technology and knowhow, we provide total solutions from sewage/wastewater treatment to high-purity water treatment. We are providing services in all areas of water treatment, including consulting, analysis, design, construction, test drive, and maintenance, and we have experiences in about 50 overseas projects and 300 local projects about 120 engineers with extensive experience in water treatment facilities. As of 2011, our sales recorded 62.5 billion KRW and we are achieving more than 30% growth every year.



Dongbu Steel Wastewater Reuse Site



Donghee Auto Wastewater Zero Discharge Site



Namyangju Sewage Treatment Plant CSBR Site

○ Technology/Services

• Advanced Sewage/Wastewater Treatment Method - CSBR

CSBR (Constant level Sequencing Batch Reactor) method is an advanced sewage/wastewater treatment method that combines the benefits of improved A2O method and SBR method. It has the following characteristics.

- Outstanding organic matter and nitrogen-phosphorous removal
- Easy adjustment to water quality load fluctuation
- No secondary settling tank to save space

• Sewage Wastewater Reuse Technology

GreenEnTech Co., Ltd. combines various processes, engineering technologies and experiences to provide the most appropriate sewage/wastewater reuse facilities for the following purposes.

- Industrial Water: Cooling water, processing water, boiler water
- Reserved water for waterfront areas

• Advanced Water Purifying Technology

GreenEnTech's advanced water purifying technology applies membranes and Pulse UV disinfection device as the major process. It uses completely automated facilities to produce and supply the highest quality drinking water and has the following characteristics.

- Completely removes bacteria, such as pathogenic protozoa and e-coli
- Produces the highest quality drinking water with no taste and odor



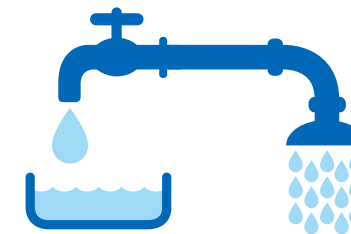
○ Track Records

- Wastewater Treatment Facilities for CSP, Brazil (74,000m³/d, 7,500,000 USD) (Sept 2012)
- Water Purifying/Wastewater Treatment Facilities for Luke Oil Production, Iraq (16,800m³/d, 17,000,000 USD) (June 2012)
- Water Purifying/Wastewater Treatment Facilities for Sonatrach Oil Refinery, Algeria (34,000m³/d, 21,000,000 USD) (Feb 2011)
- SK Energy Advanced Wastewater Treatment Facilities (15,000m³/d, 5.6 billion KRW) (Nov 2009)
- Donghee Auto Automobile Paint Wastewater Zero Discharge System (528m³/d, 5.2 billion KRW) (Apr 2009)
- Goyang city Wolleung Wastewater Treatment Facilities, Methods, and Equipment (80,000m³/d, 2 billion KRW) (Oct 2006)
- Dongbu Steel Wastewater Reuse Facilities (1,200m³/d, 2.4 billion KRW) (Dec 2004)
- Wastewater Treatment Facilities, Methods, and Equipment for Jeonju Wastewater Treatment Plant (100,000m³/d, 3 billion KRW) (Nov 2004)
- Namyangju Jingeon Wastewater Treatment Facilities, Methods, and Equipment (80,000m³/d, 2 billion KRW) (May 2004)

○ Patents/Certificates

- New Technology Certificate for Mega Pulse UV Disinfecting Technology (Apr 2011)
- ASME STAMP US Certificate (Nov 2009)
- New Technology Certificate for Vacuum Sewage Collecting System (July 2008)
- Selected as best partner of POSCO ENC (Apr 2008)
- New Environmental Technology Certificate for Vacuum Sewage Collecting System (Apr 2006)
- Environmental Management System Certificate (KS A 14001) (Jan 2006)
- Technology Management System Certificate (KS A 9001) (Apr 2001)

GREENPLA CO., LTD.



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CHINA

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Overview

Established in 2002, Greenpla Co., Ltd. is a new environmental technology development specialist and currently possesses Gyeonggi-do Promising Business Certificate, ISO9001 and ISO14001 Certification, and Environmental Facility License.

We are operating an environmental technology research center in the Advanced Technology Research Institute and showing performances in building environmental plants in Korea and environmental energy plants in China to reduce greenhouse gases through our China office.

Our business areas include building plants to recycle food waste, livestock excretions, and sewage sludge based on our wastewater treatment and organic sludge recycling technology. We are currently building three organic waste recycling plants (sewage sludge (1 in Korea; 1 in China), livestock waste (1 in Korea), and food waste (1 in Korea)) to begin operation in 2013.



Project in Korea: Food Recycling (Gangwon)



Project in China: Sewage Sludge Recycling (Liaoning)

Technology/Services

Organic Sludge Recycling Technology (WTD (Wet Thermal Decomposition) System)

This technology applies the world's best low energy consumption technology for thermal hydrolysis process and to separate liquid and solid organic waste (livestock waste, sewage sludge, and food waste). Then, solid waste is converted into solid fuel with higher heat value and liquid waste into the best digesting solution for anaerobic digestion for 85% energy conversion rate (45-50% using anaerobic digestion technology). Using this technology, it is possible to build a new environmental energy system to produce energy from waste while converting organic wastes into energy sources to reduce environmental costs.



Non-biodegradable Wastewater Treatment Technology (MBR (Membrane Bio Reactor) + ECR (Electro Chemical Reactor) System)

This technology involves engineering and operating the EC-MBR System that integrates the electrochemical reactor (ECR) technology to use electrochemical reaction instead of chemicals and membrane bio reactor (MBR) technology to maximize the efficiency of microorganism concentration. Greenpla Co., Ltd. has the electrocatalyst technology and the capabilities to design and analyze the plants optimized for various wastes.



Track Records

- Sewage Sludge Recycling (China) 200 tons/day (Liaoning, complete in Dec 2013)
- Livestock (Poultry) Waste Recycling 20 tons/day (supported by Ministry of Food, Agriculture, Forestry and Fisheries, complete in Aug 2013)
- Waste Leachate Treatment (China) 150 tons/day (Chongqing, complete in June 2013)
- Gwangju, Gyeonggi Sewage Sludge Recycling 40 tons/day (joint with Hyundai Construction, complete in June 2013)
- Food Wastewater Anaerobic Digesting Solution Treatment 40 tons/day (joint with POSCO ENC, complete in May 2013)
- Semiconductor Process Wastewater Treatment Facilities 1,000 tons/day
- Yeongcheon Expressway Rest Area Wastewater Recycle Facilities 600 tons/day
- Gimpo Apartment Complex Mall Sewage Facilities 800 tons/day
- Chungcheongnam-do Provincial Government Office Wastewater Recycle and Rainwater Facilities 500 tons/day

Patents/Certificates

- Organic Sludge Dehydrating Method and Equipment (Patent No. 100553532)
- Electrochemical Wastewater Treatment Method and Equipment for Nitrogen Removal (Patent No. 100598596)
- Plating Wastewater Treatment Method and Equipment Including Cyanogen and Nitrogen (Patent No. 100769656)
- Advanced Wastewater Treatment Apparatus using Biomedia and Biomembrane and Advanced Wastewater Treatment Method Using It (Patent No. 101089227)
- Method of Making Catalyst for Removing N₂O (China, Mar 2 2012)
- Pulse Power Electrokinetic Purifier for Contaminated Soil Using Pulse Power and Electrocatalyst (Patent No. 100735037)
- Contaminated Soil Resistance Regulator and Method Using Pulse Power (Patent No. 100735036)

HUMAS CO., LTD.



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○ Overview

Humas Co., Ltd. is the company established by many researchers from Daedeok Science Town, the Mecca of Korea's research and development, and KAIST professors who are devoted to the environment and the future.

Since the early days in 2000, it has concentrated on developing water quality analysis technology to achieve world-class capacities to compete with the world's leaders of water quality analysis technology and localized water quality analyzing meters and reagents to replace imported products to gain competitiveness in Korea's water quality analysis market.

It is developing online automated water quality meters that can constantly monitor water quality and water quality analysis meters and reagents for labs.

We promise to do our best for the efficiency of customer services, safety of humankind, and environmental protection.



Beijing Fair, China



Water & Sewerage Exhibition 2012



International Exhibition on Environmental Technologies & Products 2012

○ Technology/Services

• Water Quality Analysis Kit / Drinking Water Analysis Kit

Water quality pollutants are analyzed using the analysis kit that can analyze COD (Cr), COD (Mn), total nitrogen, total phosphorous, and heavy metals. Drinking water analysis kit can analyze Cl₂ (Free), Fe (T), Cu, NH (N), F, Cl, Zn, Mn, Al, and NO₃ (N). It can also analyze seawater for COD (Mn), Tn, NO₃ (N), NO₂ (N), NH₃ (N), Tp, and PO₄ (P).



• Water Quality Analyzer / UV-VIS Spectrophotometer

(1) Portable Water Quality Analyzer (HS-1000 Series)

– HS-1000Plus can measure 23 items, including COD, nitrogen, and phosphorous, and may analyze sweater and drinking water.

(2) General Water Quality Analyzer (Model: HS-3300)

– Water quality analyzer and UV/Visible spectrophotometer can be combined to analyze any kit provided by Humas.



• Immersed Turbidity Sensor - Turby 2100 (Approved as Environmental Instrument)

Used to measure the turbidity of tap water, purified water, water supply, processed water, etc. It uses 90° diffusing light measuring system (direct light adjustment) and its strength is that it uses automatic wiper cleaning to minimize data hunting by micro bubbles for high accuracy. Its range of measurements is 0 to 5/100/4000 NTU. It has acquired Performance Certificate, CE Certificate, Ministry of Environment Approval, and passed the Korea Water Resources Corporation's performance sharing system.

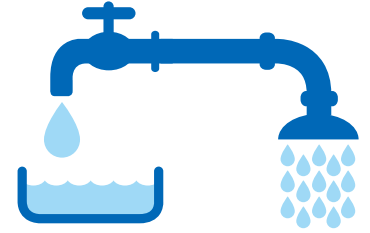


○ Track Records

- Research centers & colleges: Sold to 25 schools and research centers, including KAIST, KIST, Korea Research Institute of Chemical Technology, and Seoul National University (as of Oct 10 2012)
- Government offices and terminal sewage/wastewater treatment plants: Sold to 30 government offices and terminal sewage/wastewater treatment plants, including Gyeonggi Gwangju Innovation Corporation, Environmental Management Facilities, and Korea Water Resources Corporation (as of Oct 10 2012)
- Companies: Sold to about 20 companies, including Samsung SDI, LG Bioscience and LG affiliates, Hyundai ENG, Kolon Bioscience, and Donga Pharmaceuticals (as of Oct 10 2012)
- Exported 0.15 billion KRW to Japan (T&C, JMS) as of the 3rd quarter of 2012

○ Patents/Certificates

- CE Certificates (HS-R200, HS-1000, HS-2300, HS-3300, July 3 2008)
- New Localized Product Certificate (Korea Industrial Technology Association) (May 27 2004)
- Approved by MC Certificate (HS-1000, HS-2300) in China
- SUCCESS DESIGN Certificate (Korea Institute of Design Promotion)
- ISO9001 (AJA)
- A+ Outstanding Company (Korea Technology Finance Corporation)



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○ Overview

Hyorim Industries Co., Ltd. is an environmental company. It was established in August 1986 as Choongil Precision & Ind. Co., Ltd. to manufacture and install water and sewage and wastewater treatment equipment and changed its name in April 1990.

As of 2011, its annual sales recorded 60 billion KRW, total assets were 74,544 million KRW, equity capital was 44,309 million KRW, and number of full-time employees was 190. It has an independent technology institute specialized in engineering and development for flawless products and processes and adopted ERP system, groupware, and other information systems for efficient resource management.

Also, it has acquired ASME 'U', 'PP' STAMP, and ISO 9001/ ISO 14001 certificates for quality assurance and customer satisfaction.



Saudi Arabia Site



UAE Site



Shingo-ri Nuclear Site

○ Technology/Services

• Wastewater Treatment Facilities / Wastewater Recycling Facilities

Based on the past decades of accumulated technology, we are supplying facilities to treat wastewater from various industrial plants, such as thermal/nuclear power plants and petrochemical plants. We are also securing technology and competitiveness through steadfast development in technical partnerships with global companies. We have the technology to reuse treated water for climate changes and water shortage and we are increasing supplies in Korea and abroad.

• Sluice Gates

We produce and supply sluice gates to collect/discharge/block water resources for power plants, water collection, dams, reservoirs, and other waterways effectively. Sluice gates consist of roller gate, radial gate, and winch.

• PICAF Precipitation System

Packaged Inclined Clarifier with Accelerating Flocculation (PICAF) is an upflow-type precipitation system that naturally mixes source water and cohesive agents using the multiple levels of sliding cone and baffle plate in the reaction chamber for agglutination. The reaction water moves from the bottom of settling pond to the top for precipitation.



○ Track Records

- KALLPA 830MW CCPP Wastewater Treatment Facility (15 million USD) (by Sept 2012)
- Chile Lithium Extraction Facility Building & Installation Project (Aug 2012)
- UAE Taker RRE#3 U&O PJT Sea Water Intake (75 million USD) (by May 2012)
- Seawater Collecting Facility for Indonesia Saprophytism Thermal Power Plant Project (Feb 2012)
- Water Collecting Facility for OMAN SUR IPP Project (Dec 2011)
- Samcheok Production Base Level 1 Seawater Collecting Facility (Aug 2011)
- Shin-Uljin #1,2 Wastewater Treatment Plant (May 2011)

○ Patents/Certificates

- Promising Small/Medium Exporter (Gyeonggi-do Regional Small/Medium Business Administration, June 2012)
- ASME "U", "PP", "S" Stamp (Sept 2010: Asan Factory)
- Safety Certificate OHSAS 18001 (Aug 2010)
- ASME "U", "PP" Stamp (Nov 2009: Cheonan Factory)
- Quality Certificate KWWA (Oct 2009)
- 7 Registrations including patents (19 cases, including No. 0435621) and utility designs (15 cases, including No. 0169463)

HYOSUNG GOODSPRINGS



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○ Overview

Hyosung Goodsprings Co., Ltd. began its pump business in 1962 and has produced and supplied various pump for agricultural irrigation, city water/sewage, large industrial plants, papermaking, chemical plants and power plants for more than 50 years. We currently have the highest market share in Korea.

Based on our accumulated technological and engineering capacities, we have developed seawater desalination plants and containerized RO to diversify our business and provide users with Total Water Solutions.

As of 2011, we recorded 181.7 billion KRW in annual sales, 164 billion KRW in total assets, 18 billion KRW in paid-in capital, and 480 full-time employees.

We are also developing key equipment at the affiliated research institute for the localization of products. We are producing and studying products at our Changwon Factory and the recently completed Gimhae Factory.



Daesan Industrial Water Channel



Hyundai Steel Industrial Water Channel



Pakistan/Iran C-RO

○ Technology/Services

• SWRO Desalination System

Our seawater desalination plants using reverse osmotic membrane (RO) are widely demanded or domestic water, industrial water, and power generation and we use pretreatment, RO system, post-treatment and energy-saving engineering technology to remove ions in seawater and supply economical, energy-efficient systems.



• Any Water Containerized RO (C-RO)

RO facilities are packaged in containers for convenient transportation and installation in limited properties and can be produced immediately when connected to external plumbing and power supply. It uses Tele Monitoring System for automatic operation and allows automatic monitoring.



• High-pressure Pump and Energy Recovery Technology

The key equipment of reverse osmotic seawater desalination plants has high-pressure pumps and energy recovery equipment. The high-pressure pumps that take more than 80% of entire power consumption are localized and applied to seawater desalination systems and we are currently developing high-efficiency energy recovery equipment.

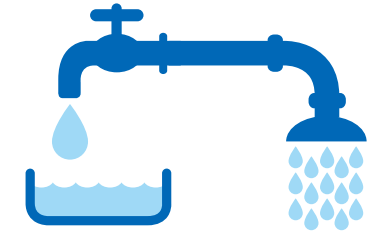


○ Track Records

- Hyundai Steel Mill Dangjin Process Water (1 units ~3units), Brackish water, 174,000m³/d (2007~2014)
- Daesan Industrial Water, Water Resource Corporation, Brackish water, 119,000m³/d (2012)
- Shiraz Third Ammonia & Urea Complex, Iran, Brackish water, 25,700m³/d (2012)
- Abadan Refinery Cooling Water, Brackish water, 17,400m³/d (2012)
- Ghana Takoradi T2 Power Plant, Ghana, Seawater, 1,440m³/d (2012)
- Madinah C-RO, Saudi Arabia, Brackish water, 3,500m³/d (2011)
- Youngheung Thermal Power Plant, Korea, Seawater, 2,000m³/d (2009)
- Angamos Thermal Plant, Chile, Seawater, 250m³/d (2009)
- Incheon city Muuido International Airport C-RO, Korea, Seawater, 100m³/d (2009)

○ Patents/Certificates

- Environmental Management System Certificates (ISO 9001 / ISO 14001) (Aug 2011)
- OHSAS 18001 (Aug 2011)
- KOSHA 18001 (Nov 2010)
- ASME Certificate (N Stamp / NPT Stamp) (July 2009)
- Power Industry Technical Standards (KEPIC-MN) (Jan 2008)



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Overview

Ilshin Environmental Engineering Co., Ltd. is the general engineering company specialized in the environmental industry to be active in advanced sewage/wastewater treatment, organic solvent recovery system, and environmental plants based on the past 20 years of accumulated technology and experience (established in 1991). We achieved 20 billion KRW sales and 45 full-time employees for our 20th anniversary in 2011. As the CEO has the policy that "Customers are always right," we pursue the common goal to build "consistently trusted Ilshin" with superior technology and competitive construction and quality control capacities. Our affiliated research institute has acquired INNO-BIZ certificate and new environmental technology certificate and proven its capacities to engage in various national projects and research services for local governments. Ilshin Environmental Engineering Co., Ltd. has won the Minister of Environment Award three times (1997, 2000, and 2005), the Mayor of Seoul Award (2011), and "The Outstanding Environmental Business" selection by the Ministry of Environment. We always think from customers' point of view and provide total solutions to satisfy customers' needs.



Gyeonggi Gapyeong Sewage Treatment Plant, Advanced Sewage Treatment (Total Phosphorous Treatment)



SK Innovation NMP Recovery Facility



POSCO Mexico Plant, R/O System

Technology/Services

Advanced Sewage/Wastewater Treatment (IPNR™ Process: Simultaneous removal of nitrogen and phosphorous through continuous reaction)

The attachment reaction using coated media delivers high phosphorous treatment efficiency and treats nitric nitrogen using the denitrifying microorganisms on the surface of media to remove both phosphorous and nitrogen at the same time. The quality of process water is 0.1 mg/L or lower phosphorous concentration and 1 mg/L or lower nitrogen concentration. It is an eco-friendly technology that allows low chemical use and sludge generation. Continuous media regeneration allows continuous operation without back-washing time and may be upgraded using Ilshin Environmental Engineering Co., Ltd.'s total phosphorous process (IPR™ process).



Daegu Dalseong Wastewater Treatment Plant, Advanced Sewage/Wastewater Treatment

Membrane Filtration Water Purification System

We have specialized capacities in advanced water treatment. We have cooperated with Daewoo Construction to complete Korea's largest pressurized membrane water system (pressurized, 25,000 ton/day). This system can remove suspended solids and colloid particles larger than 0.01 μm and contribute to water purification and industrial water recycling.



Yeongdeungpo Arisu Water Purification Center (Pressurized, 25,000t/d)

Environmental Water Treatment Plant System

Includes Industrial Water Treatment, Pharmaceutical Water Treatment, Demineralized Water Treatment, Ultra-pure Water Treatment, and Reverse Osmosis System.



Mexico R/O Facility

Track Records

- POSCO Mexico Plant CGL#2 RO/POSCO Engineering/1 billion KRW (Apr 2012)
- Edison Project Wastewater Treatment Facility/Samsung CNT/1.58 billion KRW (Mar 2012)
- Daegu Dalseong Sewage Treatment Plant Total Phosphorous Facility/Korea Environment Corporation/1.24 billion KRW (Oct 2011)
- Chungju Area Total Phosphorous Treatment Facility/Hyundai E&C/1.5 billion KRW (June 2011)
- Total Phosphorous Treatment Facility/Muan-gun Water Center/1.2 billion KRW (Apr 2011)
- Wastewater Treatment Expansion Work/Dongducheon Leather Complex/3.1 billion KRW (Feb 2011)
- Yeongdeungpo Water Purification Center Membrane Filtration System (Pressurized: 25,000t/d)/ Daewoo Construction/6 billion KRW (Jan 2011)

Patents/Certificates

- Patents: Phosphorous and Nitrogen Simultaneous Removal System for Sewage/Wastewater (No. 10-0010361, 2012) and 14 other cases
- "Outstanding Environmental Business"/Ministry of Environment (July 2012)
- Good Job Creator Certificate/Seoul City (June 2012)
- ISO9001/ISO14001/Korea Management Association Registrations & Assessments inc. (Aug 2011)
- New technology certificate (NET)/Ministry of Environment (July 2010)
- INNO-BIZ certificate/Small and Medium Business Administration (Mar 2010)
- Venture Business certificate/Korea Technology Finance Corporation (Mar 2010)
- Affiliated Research Institute/Korea Industrial Technology Association (Nov 2005)

KOPECS



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○ Overview

KOPECS was established in March 1987 based on the president's 30 years of business experience and technology with the philosophy to pursue "partnership, sharing, and enhancement." We have localized products and focused on R&D to ensure quality, price-efficiency, and functionality.

We are supplying process valves, valve equipment, and total engineering for the major facilities in steelmaking, power generation, oil refining, chemical, environment, and water treatment through One-Stop Service.

KOPECS has achieved a number of patent rights through advanced technology and 30 years of ceaseless technology development based on our experiences in Korea and abroad. Based on our quality systems certified by ISO 1400, API, DNV, and Lloyd's, we have acquired venture business and government's parts/material manufacturer certificates and promising exporter selection to gain recognition as high-functional valve manufacturer with affiliated research institute to give customers value.

We will not settle with the present, but we will pursue constant development of specialized products, high value added services, and competitive pricing to satisfy the needs of customers and win customers' trust.



POSCO (FINEX)



POSCO FINEX Main Facility CONTROL VALVE 1000A

○ Technology/Services

• CONTROL VALVE

The automatic pneumatic control valve installed on the pipeline of mid/large-sized production plants, including petrochemical plants, steelworks, automotive plants, pulp/papermaking plants and water treatment facilities. The control box in the central control room can be used to automatically control discharge supply/block of the pipeline.

Considering the new plants being built in advanced countries and developing countries and their lifecycle, the future possibility of control valves is infinite.

• Spray Coating

The valves used to transport fluids in high temperature and high pressure generally use high-priced stainless steel that is strong against friction and impact, but KOPECS use carbon steel that is much more affordable than stainless steel with tungsten or nickel/chrome spray coating using the plasma method on the surface to improve the wear-resistance and durability of impacted or friction parts (body, disk, stem, power systems, etc) to a level higher than those of stainless steel. This specialized coating technology can maintain the product's expected lifespan.



○ Track Records

- Mexico No.2 CGL Local Sensor (POSCO (MexicoCGL), 2012)
- 3FINEX New Main Facility (POSCO, 2012)
- Yeosu Factory & Steelmaking 3rd Phase Water Treatment Facility (Hyundai Steel, 2012)
- CJI 20110905-311, CJI 20111007-341 (CJ (Indonesia), 2011)
- MOE PJT. (STX (IRAQ), 2011)
- SWI-110825-01 (POSCO (Kwangdong CGL), 2011)
- SBPA PROJECT, BPEX PROJECT (DAEWOO ENG'G, 2011)

○ Patents/Certificates

- Patent: The valve with adjustable torque (Mar 20 2012)
- Presidential Award for Environmental Preservation (June 3 2011)
- ISO 14001:2004 Certificate (May 19 2011)
- ISO 9001:2008 Certificate (May 19 2011)
- Patent: The Cyclone valve for controlling high-temperature differential steel gas (Mar 8 2010)
- Minister of Environment Award (Dec 31 2009)
- Patent: A rubbish exhaust valve used in auto cleanet (Feb 27 2009)
- API Certificate

KORBI CO., LTD.



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○ Overview

KORBI Co., Ltd., established in 1999 with Korea Institute of Science and Technology's Restoration Center as its parent, is the general environmental specialist that creates a better world with transparent management and best technologies. We have used various original technologies that we have developed through steadfast R&D since establishment to provide products and technologies needed to create a more pleasant environment. Also, we use completely localized measuring devices to perform various projects successfully to contribute to the development of Korea's water environment industry as the leader of water quality monitoring. We have expanded our System Integration (SI) and Engineering Divisions to become the world's greatest general environmental specialist for convergence of environmental technologies and information technologies. We are successfully diversifying water treatment businesses using advanced sewage treatment technology (SNR method) using aerobic/marsh basin with natural ventilation.

※Business: System integration (SI), measuring & monitoring equipment, water treatment, environmental services and consulting



National Water Quality Automatic Measuring Network



Measuring Equipment



Water Treatment: SNR Method

○ Technology/Services

• System Integration (SI)

- Integrated Water Quality Monitoring
National Water Quality Automated Measuring Network, USN-based Portable Water Quality Anticipation System, Remote Water Quality Monitoring System, Drinking Spring Water Quality Monitoring System, Spring Water Quality Monitoring System, Oil Monitoring System, Integrated Toxicity Monitoring System, Real-time Tap Water Monitoring System
- Integrated Operation of Environmental Infrastructure
Sewage/Wastewater Treatment Plant Integrated Management System, Modeling-based Sewage Treatment Process Control Automated System, Sewage Pipe Monitoring System, Incinerator Integrated Management System, Real-time Odor Monitoring System, Food Waste Recycling Facility Operating System
- Flow Control
Water Operation Center/Water Pipe Optimization System
- Greenhouse Gas Information
Spontaneous Greenhouse Gas Reduction Business Registration Center, Greenhouse Gas Goal Management System
- Integrated Environmental Surveillance
U-environment Monitoring System, CCTV Video Management System, Water Circulation Integrated Management System, Water Quality Pollution Preventive Information System

• Measuring Equipment

BOD continuous automated meter, biological alarm system, integrated BOD/bio alarm system, COD continuous automated meter (electrochemical), COD continuous automated meter (manganese), TOC continuous automated meter, TN continuous automated meter, TP continuous automated meter, phosphate-phosphorous continuous automated meter, ammonia continuous automated meter, colorimeter, buoy-type portable water quality anticipation system, pH meter, pH/ORP meter, DO meter, residual chlorine meter, conductivity meter, turbidity meter, SS meter, MLSS/SS meter, multi-category water quality meter, chlorophyll-a meter/blue-green algae meter, NO₃, CODEq, TOCEq meter, magnetic flow meter, ultrasound water level meter, ultrasound concentration meter, auto sampler, data collector, water flea culturing device, algae culturing device, oil leak monitor

• Water Treatment: SNR Method

Nonpoint pollution reduction facility, small-sized sewage treatment facility, reservoir water purification facility, polluted river purification facility

○ Track Records

- Water Monitoring System (IP-USN-based) Pilot Business in Korea Environment Corporation (KECO) Industrial Complex (June 2012)
- Gyeonggi-do Contractor Anseong's 4th Industrial Complex Terminal Wastewater Treatment Facility Construction (Apr 2012)
- Hoiya Water Treatment Plant TOX (Apr 2012)
- Scattered Water Supply System Facility TOC (Feb 2012)
- Advanced National Greenhouse Gas General Management System, LIG System Co., Ltd. (Dec 2011)
- The 4 Rivers Chl-a (Aug 2011)
- Integrated Monitoring System for Hana ENG Paju Unjeong District Water Circulation System Construction Project (Aug 2009)

○ Patents/Certificates

- New Product Certificate-NEP (Nov 2006), New Environmental Technology Certificate-NET (Apr 2005), Outstanding Product of Public Procurement Service (Aug 2001), CE Certificate (May 2010)
- Government R&D Projects: 29 projects (21 independent & 8 joint), 25 theses (13 in Korea & 12 abroad)
- 70 patents: 48 registered (34 in Korea & 14 abroad), 22 pending (15 in Korea & 7 abroad)



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Overview

Established in 2003, Korea Water Technology has been specialized in sludge treatment accumulating years of experience and technology in sewage/wastewater sludge treatment. We were the first in the world to commercialize the new-concept electric charge sludge cake reducer that can dehydrate and reduce the water content in organic sludge down to around 60%. Our major clients are local government offices and large companies in Korea, Japan, Europe, and China and we have a number of partners, including Mitsui Zosen (Japan), Krevox (Poland), and SK China (China). We have achieved 32 billion KRW in sales and 3.9 million USD accumulated exports by the 3rd quarter in 2012.



Electro-Osmosis Dehydrator Apparatus and Control Panel



After Dehydrating Sludge

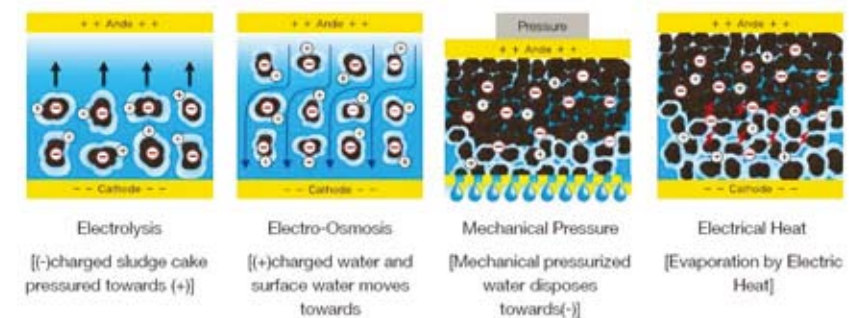


Water Content before/after Sewage Sludge Dehydration

Technology/Services

Electroendosmosis Dehydration

Organic sludge has electric charge (-) on the surface of particles and attracts moisture by the electromagnetic forces around the particles. This technology applies direct current electricity and pressure to dehydrate organic sludge. It overcomes the limitations of physical dehydrators and reduces the water content of sludge down to 60% to reduce the quantity of waste by 50%.



Also, it can build an economical sludge fuel system. Compared to previous sludge dryers, it has high energy efficiency (consumes 250-300kWh to remove 1 ton of water, 1/3 of dryer) and requires only 1/4 of investment compared to dryers.

Track Records

- Krevox (Poland)_Model: s16, 2 units (2012)
- Yongin Giheung Respia_Model: s12, 3 units (2012)
- Romet (Romania)_Model: s08, 1 unit (2012)
- Mitsui Shipbuilding (Japan)_Model: s16, 3 units (2012)
- Mitsui Shipbuilding (Japan)_Model: s12, 3 units (2011)
- Krevox (Poland)_Model: bs16, 1 unit (2010)
- Ecopolymer (Russia)_Model: selo3000, 3 units (2008)
- Samsung Electronics_Model: selo3000, 5 units (2008)

Patents/Certificates

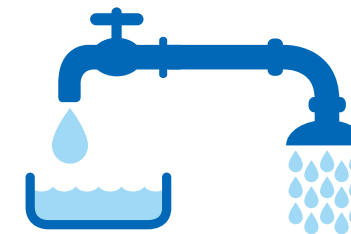
Patents

- Power Supplier for Sludge Dehydrator (Dec 2009)
- Sludge Treatment System (Sept 2009)
- Sludge Treatment System with Sludge Conveying Unit (June 2009)
- Electro-Osmosis Dehydrator using Three-phase Alternating Current (May 2008)
- Electro-Osmosis Dehydrator (May 2007)

Certification

- Japan Environmental Sanitation Center Performance Certificate (Mar 2011)
- Green Technology Certificate (Dec 2010)
- NEP New Product Certificate (Jan 2005)

MICROFILTER CO., LTD.



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Overview

Since we established Omni Pure Pacific Co., Ltd. with Omni Pure Filter (USA) in 1996 through technology collaboration, we started business as a specialized filter manufacturer and finally established Micro Filter Co., Ltd. when our technology collaboration with Omni Pure ended in 2002.

We are specialized in producing filters installed on various environmental/health products, such as water-purifying filters for homes, refrigerators, ionizers, water softeners, and bidets, and various industrial facilities as the key part and we are devoting our fullest efforts in R&D and HR development to provide the best quality and services.

All of our 100 employees are dedicated to 'providing only the most reliable and the most advanced products' to focus on technological and product development and have worked hard together to achieve 44.8 billion KRW sales in 2011. In terms of overseas exports, we were awarded the 1 million USD Export Tower in 2009 and the 5 million USD Export Tower in 2010. In 2011, we exported more than 6.2 million USD.



RO Membrane Automation Line



Automated Production Line



Injection Line

Technology/Services

RO Membrane Element

- The 0.0001 μm pores remove various heavy metals, bacteria, viruses, and other organic compounds dissolved in water.
- We use DOW Filmtec membrane, the first membrane discovered, to produce products that deliver outstanding properties and durability.
- We can manufacture flawless products through automated production lines and vacuum testing on all products.
- We have acquired NSF 58 certificate for products with stable materials.

M9 Quick Change System

- The DIY water-purifying filter system that comes in three sizes of filters - 8", 11", and 12" - and is easily installed and replaced by anyone.
- The 3-stage and 4-stage UF and RO Membranes can be customized to fit various needs of customers to provide clean and pure water.

Carbon Block Filter

- Attaches to the residual chlorine and organic matters and deodorizes.
- NSF 42 Certificate: Able to remove Chlorine and Particulate Class 1~3 (0.5~5 μm).
- NSF 53 Certificate: Able to remove Lead, Mercury, Cyst, Benzene, Lindane, and Atrazine.
- We are supplying refrigerator filters to many electronics manufacturers and our filters are used for water treatment for under-sink disposers and coffee makers.
- The High Flow filter ensures 1GPM or greater capacity and NSF 42-grade performance as a commercial filter.



Track Records

- Supplied under-sink system to C Company in USA (2012)
- Supplying under-sink system to H Company in England (2011~present)
- Supplying under-sink system to A Company in Australia (2009~present)
- Established Micro Media Filter Limited Joint Company in Foshan city, China (2007)
- Supplying filters to Samsung Electronics and LG Electronics (2005~present)
- Supplying filters to Chungho Nais Water Purifier (1996~present)

Patents/Certificates

- Innovative Technology Small/Medium Company (INNO-BIZ) (2012)
- Selected for Small Yet Powerful Global Company Nurturing Project (2011)
- ISO 9001 / 14001 Certificates (2011)
- Water Mark Certificate (2010)
- NSF/ANSI 42, 53, 58 Certificates (2006-present)
- 8 patents, 1 utility design, and 28 registered designs

NEUROS CO., LTD.



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○ Overview

Neuros Co., Ltd. is a Korean venture company established in May 2000, by aerospace engineers. The company was founded with the purpose of achieving global competitiveness in the field of turbo machine technology. The company was established with experts of diverse fields with specialized talents. The company has focused on developing precision machines such as turbojet engines for Unmanned Aerial Vehicle, Micro-turbine cogeneration system, wireless flying robot, and Advanced Highly Loaded Supersonic Stage Compressor. On May 2004, Neuros have succeeded in developing Turbo Blower NX series, and started to produce them as main product. The Turbo Blower NX Series has adopted aircraft turbo engine technology to aerate for waste water treatment plant. NX Series is able to save energy about 30% and minimize maintenance cost considerably compared to the prior blowers. Also, by applying airfoil bearing, the product has negligible noise, low vibration level, and most importantly, it is environment-friendly. The start of export on year 2007 toward North America Markets granted Neuros products with the title of global products. The sales revenue of Neuros for the past three years has been flourishing with the average annual sales increase of 30%, and the export revenue contributes to approximately 70% of the total sales. As the company started the year 2012 with becoming listed on KOSDAQ, Neuros is stepping onward with the hopes of creating a green generation.



○ Technology/Services

• Turbo Blower & Turbo Compressor

- Classified into blower (Neuros NX Series Turbo Blower) that compresses air to generate low-pressure air in 0.1-1.0 atmospheric pressure and compressor (Neuros NC Series Turbo Compressor) that generates high-pressure air in 1.0 or higher atmospheric pressure.
- The blower that applies the most advanced turbo-type compression system in terms of efficiency and environmentally-friendliness.

• Compact Gas Turbine Engine

- The gas turbine engine for UVA (unmanned aerial vehicle). Used to drive unmanned helicopters, unmanned surveillance vehicles, and compact missiles for traffic situations and wildfire monitoring.

• ACM

- Air Cycle Machine (ACM) for Avionics Cooling
- Characteristics: High-efficiency centrifugal compressor/ high-efficiency centripetal turbine/ air bearing/ compact, lightweight/ energy source: RAM air or engine bleed air



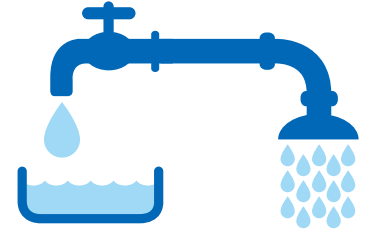
○ Track Records

- Sold 12 300 hp units to USA Ballenger Mckinny Sewage Treatment Plant (Aug 2011)
- Sold 5 700 hp units to USA Pima County Sewage Treatment Plant (July 2011)
- Sold 11 300 hp units to CJ China Shenyang Wastewater Treatment Plant (June 2011)
- Sold 6 100 hp units to POSCO Plantec Wastewater Treatment Plant (Apr 2011)
- Sold 5 350 hp units to Turkey Malatya Sewage Treatment Plant (Jan 2011)
- Sold 6 300 hp units to Russia Padolsk Sewage Treatment Plant (Dec 2010)
- Sold 12 300 hp units to Daejeon Sewage Treatment Plant (Sept 2006)

○ Patents/Certificates

- CE Certificate: Turbo Blowers -NX Model (TUV NORD, Mar 16 2011)
- Patent: Thrust Foil Air Bearing (June 11 2010)
- High-efficiency Energy Equipment Certificate: Turbo Blower (Korea Energy Management Corporation, Apr 23 2010)
- ISO9001: Wireless Toy and Turbo Machinery (USA, Apr 16 2010)
- GOST Certificate : NX Model (Russia, Feb 12 2010)
- Patent : Structure of a turbo blower which can reduce an axial load (June 30 2009)
- CSA Certificate: Turbo Blowers -NX Model (CSA, Apr 7 2008)
- Patent: Turbo blower enabling efficient motor-cooling (Apr 14 2006)

OHK CO., LTD.



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○ Overview

Established in 1999, OHK Co., Ltd. is a venture business specialized in environmental facilities and we have made steadfast efforts to develop new technologies and quality products related to water treatment and sludge treatment.

Our technologies have acquired a number of new technology (NET) certificates and verifications from the Ministry of Environment and we have patented all of our technologies. We have also received the EM and EEC marks from the Ministry of Commerce, Industry and Energy, the KT mark from the Ministry of Science and Technology, outstanding product selection from the Public Procurement Service, and the energy-saving product selection from Korea Energy Management Corporation.

Currently, we are developing new technologies to treat muddy water generated from dredging and solidify sludge, and have patented them. We are also developing technologies to treat wastewater from shale gas development.



Busan Spoil Solidification



Spoil Dehydrator



Jeongnam Sewage Treatment Plant

○ Technology/Services

• Muddy Water and Spoil Treatment System (Solidifying Agent)

Muddy water from dredging is physiochemically collected and deposited for treatment and our concentrating dehydrator is used to dehydrate sludge and solidify sludge using our eco-friendly solidifying agent to use it as earth fill, land cover material, and soil conditioner. We have applied it to soft ground for many projects.



• ACS Advanced Sewage/Wastewater Treatment Method and Phosphorous Treatment Technology

ACS (ASRT Control System) method is an efficient sewage treatment method that maintains microorganism detention time and alternates anaerobic/aerobic treatment to remove nitrogen and phosphorous. It ensures high treatment efficiency with low initial investment and may be maintained with lowest cost. Active carbon is chemically coated (DAC-Filter, patented technology) to enhance phosphorous removal and discharge water with 0.2ppm or lower phosphorous content.



• Fluid Plate Concentration/Dehydration System (SQUEEZALL & U-Trench)

This high-efficiency concentrator and dehydrator for sewage sludge and spoil (inorganic materials) (registered trademark: SQUEEZALL) has acquired KT, EM, EEC, outstanding product certificate of the Public Procurement Service, energy-saving product, and new local technology of the Ministry of Environment, and comes in various forms: air-tight, U-shaped, and disk. It can be designed according to the form of sludge and purpose of discharge. The dehydrator can reduce water content down to 78±3% and the concentrator can reduce it to 92±2%.



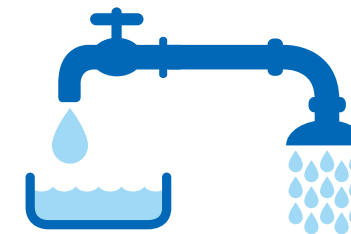
○ Track Records

- CBM Pumping Facility and Water Treatment System (Korea Institute of Energy Technology Evaluation and Planning, 1st phase until 2015, in progress)
- Supplied concentrating hydrator for energy independence of Gyeonggi-do Ansan Sewage Treatment Facility (Halla E&C Corp., in progress)
- River spoil solidification, Busan (Busan City, 2nd phase, in progress)
- Okcheon Cheongsan Industrial Complex Wastewater Treatment Facility (Okcheon-gun, 500 tons/day, in progress)
- Jeongnam Sewage Treatment Facility, Gyeonggi-do Hwaseong city (Hwaseong City, 17,000 tons/day, completed in Oct 2012)
- Hwaseong Yanggam Sewage Treatment Facility (Aug 2012)
- Nakdonggang (River) 41st Zone Spoil Dehydrator (Busan City, 720m³/hr, completed in June 2012)
- Sewage Pump Spoil Solidification, Busan (Busan City, 1st phase completed in May 2012) and many more

○ Patents/Certificates

- Screwless Sludge Concentrator (Patent No. 10-0736694)
- Fluid Plate Operating Eccentric Shaft of Sludge Treatment System (Patent No. 10-0814361)
- Sludge Concentrating System and Method (Patent No. 10-2007-0056917)
- Soil Solidifier (Patent No. 10-0968937)
- Spoil and Muddy Water Treatment Method and Its System (Patent No. 10-1048641)
- Land Conditioner for Spoil (Patent No. 10-2011-0002743)
- Active Carbon with Conditioned Surface and Its Production Method (Patent No. 10-1124431)
- Many other certificates

PANGAEA21, LTD.



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Overview

PANGAEA21 Ltd., the leader of e-water resource management solution for Smart Water Grid based on the environmental information technology that combines the environment with IT technology, has worked with various local governments and organizations since it was established in 1997 to build water operation systems, water/sewer integrated operation management systems, water/sewer process diagnosis and automated control systems, pipeline and leak management systems, environmental information systems, water quality meter and TMS. In the environment, IT, and instrumentation areas, about 70 engineers have achieved 20 billion KRW annual sales and have constantly researched and developed related technologies to acquire various patents and certificates. By doing so, we are creating a cleaner environment and a clearer future in Korea and abroad as the leader of Smart Water Management.



Sewage Operation Management System



Water Operation Integrated Management Center



Online Water Quality Meter

Technology/Services

Environmental informatization

We provide government offices and local governments with environmental monitoring systems, environmental resource management, environmental change forecast, environmental plans and decision-making systems for policymaking; and companies with increased profits by reducing environmental cost and environmental management systems for sustainable improvement.



Water treatment (water/sewer)

We build water facility modernization and informatization systems to complete water operation systems and provide remote monitoring control, flow/leak management, and water demand management. We build sewage treatment facility integrated operation management systems and automated control systems to manage integrated operation centers for each region and use sewage pipe monitoring systems to provide geographical and sewage facility database.



Water quality measuring

We provide all devices and solutions needed to measure water quality of environmental infrastructures, such as water purification centers and terminal sewage treatment plants, and monitor water quality of rivers and lakes. The most popular systems are electrochemical COD automated continuous meter and multiple category continuous meter for drinking water.



Track Records

- Seoul city Guui Water Purification Center Modernization and Advancement (Jan 2011)
- Gumi city Flow Rate Improving Block System and Integrated Management System (Jan 2010)
- Seoul city Tancheon Water Treatment Center Advanced Treatment Facilities Installation/Monitoring and Control Facilities (Oct 2009)
- Seoul city Arisu Integrated Information System (June 2009)
- Chungju Dam Upstream (1 zone) Sewage Facility Construction Integrated Management System (July 2007)
- Namgang Dam Upstream (2 zones) Sewage Facility Construction Integrated Management S/W and Instrumental Facilities Installation (June 2007)
- Hapcheon Dam Upstream Sewage Facility Construction Integrated Management System and Instrumental Facilities Installation (May 2007)
- Uijeongbu Water Facility Informatization and Automated System Construction (Dec 2004)

Patents/Certificates

- Environmental Management System Certificate for Water Treatment Analyzer and Controller Engineering, Development, Production, Installation, and Additional Services (ISO 9001:2009, ISO 14001:2009, Apr 2011)
- Green Technology Certificate for Electrochemical Chemical Oxygen Demand (COD) Automatic Continuous Metering Sensor Development Using Catalyzed Anode (No. GT-10-00038, June 2010)
- New Environmental Technology Certificate for Advanced Sewage Treatment Technology (I³ System) with Hollow Fiber Separating Membrane System 2-stage Anoxic Tank (Mar 2010)
- Patented Electrochemical COD Analyzer with Automatic Electric Pole Coating Feature and Its Coating Method (0704887, Apr 2 2007)
- Patented Real-time Monitoring System and Warning System for Fast Filter Operation Status and Filtered Water (0539308, Dec 2005)
- Patented Real-time Water Quality Monitoring System and Its Control Method (0522764, Oct 2005)
- Patented Real-time Process Diagnosis Management System for Environmental Infrastructures (0492269, May 2005)

SAMJIN PRECISION CO., LTD.



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○ Overview

Samjin Precision Co., Ltd., which is Korea's greatest valve maker for water/sewage is challenging to be the comprehensive valve maker through business diversification. We have gained reputation as specialized valve maker for water/sewage for the past 21st years and acquired a specialized oil/gas valve maker in March 2007 to establish the new Samjin JMC to start business in the industrial valve market.

Since we established the corporation, we have purchased various processing facilities and testing facilities unprecedented in Korea's valve industry to build the flawless system that satisfies international standards and moved our factory to the old factory of Samjin Precision Co., Ltd. to focus on and start manufacturing valves for oil refining, gas, and petrochemical plants.

With more than 15% our employees specialized in R&D, we have obtained almost 200 patents and most of our products are registered as NEP and outstanding products by the Public Procurement Service. Not only that, we strictly inspect all finished products for quality control and operate regional customer service teams for timely and satisfying customer services 24/7.



Gori Nuclear Power Plant



Hyundai Steels Dangjin



Haripur Thermal Power Plant

○ Technology/Services

• Rust-proofing Double Sealing Resilient Gate Valve

Gate valves for water supply are mostly buried underground and always exposed to soil pollutants and other corrosive environments, but rust-proof gate valve attaches the rust-proof system using the sacrificial anode system to protect the gate valves and pipes from the corrosive environment to extend their lifespan.



• Rust-proof Triple Offset Butterfly Valve

The triple offset design minimizes control and wearing of seal to expand lifespan, while the wedge-type sheet structure prevents disk overrun. It has the rust-proof system using the sacrificial anode system at three sites to prevent corrosion under any circumstances.



• Chattering Relaxation Control Valve

Resolves the chattering issue of previous control valves where the fluid's velocity of flow increases in orifice in case of low-opening drive to cause disk lifting force and lose diaphragm control by applying the chattering relaxation grid system so the fluid passes through a grid structure to keep the flow consistent.



○ Track Records

- Petrochemical complex in Borouge, Arab Emirates (360 million KRW) (Sept 2012)
- Thermal power plant in Haripur, Bangladesh (136 million KRW) (Mar 2012)
- Water treatment plant for Hyundai Steels (Dangjin) (0.7 billion KRW) (Mar 2012)
- Gori Nuclear Power HQ, Korea Hydro & Nuclear Power Co., Ltd. (62 million KRW) (Nov 2010)
- Mini-mill smelting factory, STX, Saudi Arabia (0.3 billion KRW) (Mar 2009)

○ Patents/Certificates

- K-Mark Certificate (Chattering Relaxation Control Valve) (Mar 2012)
- Outstanding Product by Public Procurement Service (Rust-proof Butterfly Valve and 4 other products) (Feb 2012)
- INNO-BIZ Certificate (INNO-BIZ) (Nov 2010)
- Safety & Health Management System Certificate (OHSMS 18001) (Aug 2010)
- Quality Management System Certificate (ISO 9001) (July 2010)
- Environmental Management System Certificate (ISO 14001) (July 2010)
- Patents (Cap Upflow Gate Valve and 80 others) (Sept 2005)

SSENG CO., LTD.



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Overview

Established in November 1999, SSENG Co., Ltd. has focused its capacities on researching and developing water treatment technologies for almost 13 years and registered about 100 patents in Korea and abroad. We have also achieved two New Environmental Technology Certificates, 14 National R&D Projects, 1,700 new technology product supplies, and 9 major awards, including the Presidential Jang Young Shil Awards' Patented Technology Prize. Recently, we have achieved a new technology to supply 12,000 tons of purified water a day for a city with 100,000 populations with one standard 45ft container.



Jangnim Wastewater Treatment Plant



Yangsan Wastewater Treatment Plant



Posco Donghoan

Technology/Services

PCF (Pore Control Fiber) Filter

PCF (Pore Control Fiber) Filter pulls the microfilaments surrounding the perforated pipe up and compresses them to reduce the size of pores for filtering or releases them to enlarge the pores to use back-washing water and air for fast flow back wash. It adds back-washing function to cartridge filter.

GFF (Gravity Flow Fiber) Filter

GFF (Gravity Flow Fiber) Filter compresses unwoven microfilaments onto a perforated board to reduce the size of pores and filter using 30cm difference in water level or releases them to enlarge the pores to use back-washing water and air for fast flow. When multiple units are installed, it forms an upflow to automatically supply adjacent filtered water as back-washing water.

Purifying Drinking Water

DCoF (Double Coagulation Filtration) applies two-step direct filtration system using PCF filter to collect river water and purify drinking water. It offers 1/30 detention time (facility size) compared to the traditional process of collection/precipitation/filtration for 99.9% (300→0.3NTU) efficiency and 3.0 or lower SDI. Operation cost is 1/3 lower and construction cost is also lower. One standard 45ft container can produce up to 12,000m³ a day and greater capacities are built in the form of a plant.



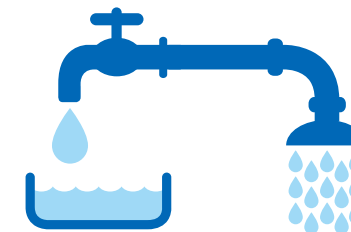
Track Records

- Ordered to build phosphorous treatment facility for Gulpo Wastewater Treatment Plant (900,000m³/day, 15.5 billion KRW) (Sept 2013)
- Installed tertiary treatment facilities for Guri City Wastewater Treatment Plant Improvement Project (160,000m³/day, 3.5 billion KRW) (Apr 2012)
- Installed phosphorous treatment facility in Yangsan Wastewater Treatment Plant (146,000m³/day, 5.26 billion KRW) (Dec 2011)
- Supplied wastewater treatment plant to Vladivostok (10,000m³/day, 180 million KRW) (Aug 2010)
- Supplied treatment facility for Able, Japan (150m³/day, 3,600 KRW) (Jan 2010)
- Installed Posco Donghoan Filtering Facility (30,000m³/day, 0.5 billion KRW) (Dec 2008)
- Installed Jangnim Wastewater Treatment Plant Discharge Water Treatment Facility (450,000m³/day, 4.5 billion KRW) (Sept 2008)

Patents/Certificates

- Quality Management System Certificate - ISO9001/ISO14001 (Feb 2007)
- New Technology Certificate/Technology Certificate (GFF Filter) - Ministry of Environment (June 2006)
- New Technology Certificate/Technology Certificate (PCF Filter) - Ministry of Environment (May 2004)
- Registered 71 patents in Korea/abroad and 33 pending

SUNGIL EN-TECH CO., LTD.



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Overview

Established in 1999, Sungil En-Tech Co., Ltd. developed the eco-friendly water quality purification technology based on artificial marshes and obtained New Environmental Technology Certificate in 2004 (Certificate No. 99, Verification No. 66). We have actively applied it to about 200 sewage treatment facilities in Korea and abroad and we have recently begun to supplying it to nonpoint pollutant reducing facilities, river purification facilities, and lake purification facilities.

As of 2011, we achieved 6,200 million KRW annual sales, and we expect to achieve 8,000 million KRW annual sales in 2012. We are a small/medium company with 30 full-time employees.

The affiliated research center, established in 2006, is specialized in developing key technologies in water treatment process, performing government research projects, and providing technical advice. We were designated as water quality measuring agency in 2008 with technology capacities as a water quality specialist.

We were selected as promising advanced technology business in 2001 and an outstanding technology business in 2005. Since 2006, we have been preparing for an exponential growth through steadfast R&D as an INNO-BIZ.



Public Sewage Treatment Facility



River/Non-point Purification Facility



Lake/Non-point Purification Facility

Technology/Services

Advanced sewage treatment technology using aerobic tank/marsh basin with natural ventilation

- The eco-friendly artificial marsh water quality purification technology that supplies air through natural ventilation to maintain an aerobic environment. The inflow water passes through the aerobic basin and anoxic/anaerobic basin with no air in order to remove organic matters, nitrogen, and phosphorous using the microorganisms that inhabit in each basin's filter materials.
- Delivers outstanding efficiency, easy maintenance, and optimal operation at low cost.

Hybrid artificial marsh for river purification and nonpoint pollutant reduction

- The ecology restoring purification technology that uses hybrid artificial marsh purification facility to purify polluted rivers to restore the quality of original waters; may also be used as river purification facility for purification process and an eco-friendly eco-marsh park, or as nonpoint pollutant reducing facility in case of rainfall.
- Delivers outstanding efficiency, easy maintenance, and optimal operation at low cost to achieve water quality improvement goal fast.

Water Quality Measuring Agency

We were registered as a water quality measuring agency in 2008 to analyze the quality of waters across Korea. We mostly measure the concentrates of pollutants in inflow water and discharge water and provide reliable data for optimal operation of water pollution prevention facilities.



Track Records

- Individual Sewage Treatment Facility Installation for the National Ecological Institute (Ministry of Environment, July 2012, 380m³/day)
- Sewage Treatment Facility Installation, Junshancun Tongluxian, Zhejiangsheng (Zhejiangsheng, China, Feb 2012, 80m³/day)
- Public Sewage Treatment Facility Installation, Yongchu Village Hamyang-gun, Gyeongsangnam-do (Hamyang-gun, Dec 2010, 460m³/day)
- Public Sewage Treatment Facility Installation, Daepyeongmyeon Jinju city, Gyeongsangnam-do (Jinju City, Mar 2010, 350m³/day)
- Sewage Treatment Facility Installation, Phnom Penh Vocational Training Center, Cambodia (Cambodia, Dec 2004, 100m³/day)

Patents/Certificates

- INNO-BIZ (Oct 2012)
- Venture Business (May 2012)
- Patent: Natural Nonpoint Purification System for Purification of Lakes and Natural Nonpoint Purification Method (Mar 2012)
- Patent: Natural Nonpoint Purification System for Purification of Rivers and Natural Nonpoint Purification Method (Jan 2012)
- Patent: Sewage Treatment Supernatant and Sewage Pipe Overflow Complex Treatment System and Method (Apr 2011)
- MAIN-BIZ (June 2010)
- Affiliated Research Institute (Dec 2006)
- New Environmental Technology Certificate/Verification [Advanced Sewage Treatment Technology using Aerobic/Marsh Basin for Natural Ventilation, SNR method] (Sept 2004)
- Patent: Eco-friendly Powerless Sewage Treatment Plant and Method (Feb 2003)

SYNOPEX INC.



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○ Overview

Established in 1985, Synopex Inc. has two independent divisions for IT business and water environment business and each division has achieved rapid growth and development through cooperation and constructive competition.

The water environment business has been focused on membrane-based advanced water purification, seawater desalination, and wastewater treatment to develop and produce separating membranes, engineer membrane structures, and supply and service membrane plant systems to provide New Smart Total Solution Services.

Synopex Inc. achieved 367.8 billion KRW annual sales as of 2011 through steadfast technological development and innovation. Also, we have been selected as New Growth Business of Gyeongsangbuk-do in 2009 in the environment division, including the water treatment systems, and achieved Gyeongsangbuk-do Pride Product and Minister of Environment's Award in 2010.

The filters we develop and produce have acquired FDA Certification, as well as the ISO 14001 and ISO 9001 certifications, to improve product competitiveness.



Seawater Desalination System



Mobile Water Purification System

○ Technology/Services

• Mobile Water Purification System (SMDT/Water 911)

Mobile Water Purification System, known as SMDT (Synopex Mobile Drinking Water Feeding Trailer), has an independent power generator and a compact water treatment system in the container to quickly provide sanitary drinking water and domestic water to areas affected by disasters or isolated from power supply.



• Fixed Water Purification System (Compact Water System)

Treats groundwater, streams, rivers using the Membrane System to supply sanitary and safe drinking water and domestic water to areas isolated from water supply.



• Seawater Desalination System

A compact system that ensures large quantities of water resources by removing salinity in seawater to supply drinking water and domestic water. This system applies the RO Membrane System to separate ion materials and pollutants and allows fast construction to supply large quantities of water resources fast.



○ Track Records

- Ministry of Land, Transport, and Maritime Affairs' Seawater Desalination National Project Test Bed Pilot Unit, Gijang, Busan <1,000m³/day> (Aug 2012)
- DHT Vietnam Mong Duong 2 CFPP WWTS Engineering/Fabrication/Supply <2,640m³/day> (Dec 2011)
- Moorim Power Tech Co., Ltd. Water Treatment RO System Installation <2,400m³/day> (Aug 2011)
- Mobile Water Purification System (SMDT) for Mongolia Water Council <20m³/day> (July 2011)
- Doosan Heavy Industries & Construction Ras Az Zawr Project RO Pilot Unit, Saudi Arabia <27m³/day> (Jan 2011)
- Groundwater Desalination System for the Government of Senegal <500m³/day> (Jan 2011)
- Gonggan General Construction Co., Ltd. Dokdo (West Island) Seawater Desalination System Maintenance/Repair (RO) (Nov 2010)
- Pohang Gyewon-ri UF System Installation for Water Service Management Agency of Pohang City <120m³/day> (May 2010)

* Many other water treatment systems

○ Patents/Certificates

Patents

- Membrane and System Protection System for Mobile Water Purification System (No. 10-1190031) (Oct 2012)
- Water Reuse System Using Circulatory Membrane and Rainwater (No. 10-1140722) (Apr 2012)
- Industrial Wastewater Discharge Reuse System and Method using Pipe-type MF Membrane and RO Membrane (No. 10-1067835) (Sept 2011)
- Compact Stream or Groundwater Treatment System Using Ultra Filter/Reverse Osmotic Membrane (No. 10-0956871/No. 10-0974184) (Apr 2010/ July 2010)

* Many other patented water treatment systems

TASET INC.



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○ Overview

Established in 1985, Taset Inc. has been focused on water treatment industry and has achieved technological development and advancement for the past decades as a specialized water treatment machinery maker and a water treatment equipment and plant exporter.

We have fabricated and installed various water treatment machines in almost 1,000 plants in Korea and abroad, including urban water purification, sewage/desalination treatment, and discharge pump treatment plants, and industrial water purification/wastewater treatment plants. We have gained trust by providing prompt and accurate services.

Taset has grown into a company that can provide One Stop Services for engineering, purchasing, and fabrication altogether for customer satisfaction.

We have worked on Yeongjongdo New Airport Complex Sewage Treatment Plant, Equatorial Guinea Eviceyin/Evinayong Water Purification Center in Africa, ICAD Sewage Treatment Plant in Saudi Arabia, Harbin 1st/2nd Water Purification Centers in China, Jeaddah and Ras Azzawr Desalination Wastewater Treatment Plant in Saudi Arabia, and TAKREER Chemical Engineering Plant Wastewater Treatment Plant in Saudi Arabia to clarify and purify the environment and water resources in the world for more people to live better lives.



Harbin 2nd Water Purification Center, China



Equatorial Guinea Project Site

UAE ICAD Project Site

○ Technology/Services

• Non-metal Sludge Collector

Taset's non-metal sludge collector is used in the rectangular settling tanks of water purification, sewage and wastewater treatment plants and collects settled sludge into hoppers. It uses engineering plastic to resist corrosion and ensures long lifespan with lightweight parts to reduce power consumption. Also, the parts are standardized and held in stock to supply spare parts promptly for easy maintenance.

• Spiral Flow Grit Remover

It is installed at the inflow channel of sewage/wastewater treatment plants to deposit sand through spiral flow and discharge it through air lifting to reduce the replacement needs or clogging of pipes caused by worn pump in processing. With high efficiency, it is suitable for large-capacity sewage/wastewater treatment plants.

Our independently developed and patented tornado block maximizes the efficiency of air lifting for many sites.

• Portable R/O & Membrane Bio Reactor System

This is the MBR system that uses R/O and settling membrane and made portable. With the steel tank in package system, it does not require civil works for installation, saves initial investment cost, and is easy to maintain and repair.

It does not take much space as the previous wastewater treatment facilities and it is simple to install, prevents odors, reduces energy consumption, and is space-efficient.



○ Track Records

- USA/Saskatchewan Rehabilitation PJT Non-metal Sludge Collector (Sept 2012)
- Korea/Samsung Fine Chemicals Wastewater Treatment Plant Round Sludge Collector (July 2012)
- Japan/Sakaigawa WWTP Non-metal Sludge Collector (June 2012)
- Australia/Cronulla WWTP Sludge Collector Improvement (Apr 2012)
- Saudi Arabia/Yanbu SWTP Sewage Treatment Plant (47,000m³/day) (Jan 2012)
- Bahrain/Muharraq STP Sewage Treatment Plant (110,000m³/day) (Dec 2011)
- Saudi Arabia/Jeddah SWRO-3 WWTP Desalination Wastewater Treatment Plant (Aug 2011)

○ Patents/Certificates

- ASME: Manufacture and assembly of power boilers("S" STEMP, Certificate number 39,572, May 18 2010)
- ASME: Manufacture of pressure vessels ("U" STEMP, Certificate number 39,573, May 18 2010)
- Automatic Back-wash Filter (Patent No. 689855, Feb 26 2007)
- ISO 9001 Certificate: BS EN ISO 9001:2000/KS A 9001:2001 (Aug 30 2006)
- Settled Sand Removal and General Pretreatment System for Water, Sewage, and Wastewater (Patent No. 555142, Feb 18 2006)
- General Concomitant Treatment System for Sewage and Wastewater Treatment Plants (No. 465870, Dec 31 2004)

WOONGJIN COWAY



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○ Overview

Woongjin Coway is Korea's largest environmental appliance manufacturer. As of 2011, our annual sales recorded 1,709.9 billion KRW. We started water treatment business in 2000 by supplying water treatment system using membranes and have become the best water treatment service with more than 10 years of accumulated membrane technology. As we have acquired Green Entech Co., Ltd. and Samyang Water Treatment Co., Ltd. since 2010, we have acquired general technologies for water treatment, including intake, biological treatment, membrane process, and pure water production.

Our water treatment businesses include advanced water purification and industrial water treatment using separating membranes, sewage/wastewater treatment using MBR system, sewage recycling using UF or RO system, and compact scattered system to supply water to disaster areas or secluded regions.



Yongin Sewage Treatment Plant



Busan Suyeong Bay Sewage Treatment



Cambodia Scattered System Site

○ Technology/Services

• Purified Water and Process Water Treatment Technology

UF membrane is used to produce highly purified water. We have applied it to ultra-pure water pretreatment system and wastewater treatment facilities for well-known semiconductor and LCD factories in Korea. We also have experience with various industrial water industries, including industrial water treatment and recycling.



• Sewage/Wastewater Treatment Technology

Woongjin Coway's MBR system applies our famous separating membrane that does not need replacement for more than 10 with proven durability. We have the capacity to work on Korea's largest public MBR construction project (100,000 tons/day).



• Recycle Technology

UF membrane and RO membrane are combined to reuse final used water as industrial or process water. It can recycle sewage, wastewater, silicon wastewater, etc according to the characteristics of original source.



○ Track Records

- Suyeong Sewage Treatment Facility, Busan, 100,000m³/day (2012)
- Iraq Qudus Power Plant UF Facility, 3,800m³/day (2011)
- Yongin Sewage Treatment Facility, 20,800m³/day (2010)
- Dongwoo Fine Cam Recycling Facility, 15,000m³/day (2009)
- Waegwan Terminal Sewage Treatment Plant Recycling Facility, 10,000m³/day (2007)
- S Electronics Industrial Water Treatment Facility (Giheung/Tangjeong) 300,000m³/day (2002~2010)

○ Patents/Certificates

- Acquired new environmental technology certificate for MF-NF Membrane Filtration Advanced Water Purification Technology (Nov 2011)
- Patented Reverse Osmosis Concentrated Water Treatment System and Method (Feb 2011)
- Patented Livestock Wastewater Treatment System and Method (Apr 2010)
- Patented Hollow Fiber Membrane Module and Method for Making Thereof in USA (Apr 2010)
- Patented Advanced Water Purification Method Using Immersive Membrane Filtration (Jan 2007)
- Patented Advanced Sewage/Wastewater Treatment System Using Separating Membrane (Dec 2005)

AUTO INDUSTRIAL CO., LTD.



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○ Overview

Auto Industrial Co., Ltd. is established in March 1982 and is keeping the name of frontier in corresponding area by developing, producing, and selling the automobile electronic component and sensors, application product of sensor, various magnet for office/industry, moreover, we have entered into the area of wireless communication and optical communication based on the accumulated technology and experience on automobile related electronic component and application product of sensor. We have accumulated the abundant technology and experience in corresponding area and according to continuous research and development, our sales have continuously increased, for instance, 34.9 billion KRW in 2009, 75.9 billion KRW in 2010, and 81.9 billion KRW in 2011. Based on these facts, with our company culture of adapting fast to changing era and the spirit of pioneer, we will do our best to be the company that will continuously develop for next 100 and 200 years.



Bluetooth Carkit



Cubis



lonizer

○ Technology/Services

• AQS (Air Quality System)

- It is the system that manages the indoor level of air pollution by mediating the flowed in and sent air of pollution information with a controller by detecting poisonous gas (CO, NOX, etc) outside of automobile while driving
- To be attached in front of FEM and complex-type of outdoor temperature sensor



• ADS (Auto Defog Sensor)

- Equipment that detects or foresees the defog of automotive air conditioning
- It uses the MEMS type temperature and humidity sensor and it can be applied to flexible PCB, moreover, detects the change of temperature and humidity of automotive window fast
- Output of analog voltage or frequency/PWM



• MSS (Sun & Auto Light Sensor)

- Integrated type of auto light and dual zone sun sensor
- Improvement of low altitude sunlight detection power
- Control of automatic air conditioning (FATC) dual zone
- Control of BCM (ECU) auto head lamp ON/OFF



○ Track Records

- Completion of automotive lonizer development, decided to be applied on Hyundai car (Apr 2012)
- Development of automotive CO₂ gas sensor for the 1st time is domestic, decided to be applied on Hyundai car (Feb 2012)
- 7.5 billion KRW sales of automotive sensor module (Dec 2011)
- 71 billion KRW sales of automotive communication module (Dec 2011)
- Development of ADS (Automotive auto defog sensor) for the 1st in domestic/Mass production (Nov 2008)
- Development of AQS (Automotive poisonous inflow control system) for the 1st time in the world/Mass production (1997)

○ Patents/Certificates

- Acquisition of ISO 14001 certification (Dec 2009)
- Acquisition of KSA 9001:2001 ISO 9001:2000 certification (Mar 2006)
- Acquisition of ISO/ TS 16949:2002 certification (Mar 2006)
- Acquisition of Halla Climate Control Corporation HQA-3 certification (Jan 2005)
- Acquisition of Hyundai KIA Motors SQ certification (Nov 2003)

CERACOMB CO., LTD.



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○ Overview

CERACOMB Co., Ltd. is the environmental material company that is established in 1987 and we hold the annual sales of 24 billion KRW in 2011. Our total asset is 20.1 billion KRW, 1.3 billion KRW of paid-in-capital with 60 permanent employees.

We have produced and supplied the honey comb of ceramic material solely in domestic, moreover, have supplied the catalyst that removes the poisonous gas caused from industrial production worksite by coating the jewelry material such as platinum, palladium, etc as the catalyst material. Furthermore, we have developed CP-DOC which is the oxidation catalyst for diesel automobile as well as PDPF and DPF system which removes the particulate matter and poisonous gas of diesel engine, and we are participating as diesel exhaust gas reduction company under supervision of Ministry of Environment.

We have developed the PAR equipment and catalyst to remove the hydrogen which is the reason of Fukushima Nuclear Power Plant Explosion in 2011 and we are selected as a supplier of entire quantity of PAR equipment to 17 power plants in domestic which shows the excellence of our catalyst technology.



Company foreground



Three way catalyst



DPF (Diesel Particulate Filter)

○ Technology/Services

• VOC catalyst

By coating jewelry (Platinum, palladium, etc) that removes the odor substance in ceramic honeycomb carrier of high specific surface area and removes and decomposes the poisonous gas in relatively low temperature area of 200~400°C.

• Diesel exhaust reduction equipment

It is the reduction equipment that reduces the exhaust discharge from diesel engine and it shows more than 80% PM reduction rate, moreover, it is the reduction equipment that optimizes the dispersion of the jewelry to realize the high efficiency of catalyst.

• PAR (Passive Autocatalytic Recombiner)

Air that is combined with hydrogen in room temperature by responding with catalyst and recombines to H₂O without other separate power supply. It is the equipment that removes the hydrogen that forms the natural convection of combination gas of hydrogen-air using heat of reaction caused in case of catalyst response.



○ Track Records

- Supply of PAR equipment and catalyst for hydrogen removal to 17 domestic Nuclear Power Plant Korea Hydro & Nuclear Power Co., Ltd. (Aug 2012~)
- Supply of exhaust reduction equipment of air quality reduction business of Seoul metropolitan region

○ Patents/Certificates

Certification

- Hydrogen removal catalyst and PAR equipment grade Q acquisition (Korea Hydro and Nuclear Power)
- CC-PDPF product certification (National Environmental Scientific Director) (Dec 2010)
- CH-PDPF-1 product certification (National Environmental Scientific Director) (Dec 2010)
- ISO 9001 system certification (System Korea Certification) (Dec 2009)
- CP-DOC product certification (Minister of Environment) (Sept 2009)
- CM-PDPF product certification (Minister of Environment) (June 2008)

Patent

- Manufacturing method of Pt/TiO₂ catalyst for hydrogen removal and its method of removing hydrogen (Mar 2012)
- Palladium/titania catalyst that possesses removing function of hydrogen, carbon monoxide, and formaldehyde which are contained in air in room temperature (Oct 2011)

- Platinum/titania catalyst manufacturing method and its catalyst and method of removing formaldehyde using this catalyst (Sept 2009)
- Masking apparatus to selectively recharge the honeycomb structure (Oct 2007)
- Honeycomb filter for exhaust gas purification that includes nano-scale composite and its manufacturing method (Mar 2007)
- Catalyst filter for diesel automobile exhaust gas purification and its manufacturing method (Sept 2006)
- Catalyst for diesel automobile exhaust gas purification and its manufacturing method and catalyst that is manufactured according to this (June 2006)
- Ceramic honeycomb of high specific surface area raw material and its manufacturing method (Dec 2005)
- Catalyst for simultaneous remove of exhaust poisonous gas of chemical treatment and odor removal and its manufacturing method and usage (Aug 2005)

DASANRND CO., LTD.



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○ Overview

DASANRND Co., Ltd. is the supplier of instrumentation system for environmental protection and since our establishment of 1998, we have self-developed the remote monitoring system of exhaust gas from stack (CleanSYS, CEMS) and integrated equipment of engine test system of automobile manufacturer, moreover, we also have developed the detail examination system of automobile exhaust gas in advance which is the national policy business and have supplied to Korea Transportation Safety Authority and 350 designated service companies based on the experience of supplying to automobile company and other industries. We hold 13.9 billion KRW of annual sale in 2011 and have awarded Tower of exportation of 5 million by exporting continuous emission monitoring system (CEMS) in 2008.



○ Technology/Services

• NDIR monitoring system of pollution measurement of stack

The major pollution substances which are harmful material of SO₂, NO, CO, CO₂, HC, HCl, etc are exhausted from a stack and the amount of discharged polluted material is possible to measure in standard of ppm. Especially, it is possible to measure various items at the same time from analysis equipment; therefore, its cost competition power is secured.



• NDIR HCl gas monitoring equipment

HCl exhaust gas is extremely harmful gas which is discharged at the acidification equipment facility, semiconductor process, as well as from incinerator and as a measurement method, ion electrode-type and NDIR measurement method is being used. To measure HCl with NDIR, we measure accurately in unit of ppm through the technology such as white cell and compensation of interfering gas and more, lastly, differentiated service support as well as cost competition power is possible.



• Exhaust gas monitoring equipment for automobile

The major pollution sources which are discharged from automobile are NO, HC, CO, CO₂, etc, and in case of CO, its proportion of air pollution is 70%. This product is sold to more than 1500 places and has improved its performance, lastly, we are supplying ODM to company that desires NDIR monitoring module.



○ Track Records

- Test service in progress of exhaust gas monitoring equipment of automobile mounted type and China Wuhan Tianhong (50,000 USD)
- Export performance: \$4,300,000 (2008)
- Export performance: \$2,500,000 (2007)
- Export performance: \$700,000 (2006)
- Export performance: \$500,000 (2005)
- Export performance: \$200,000 (2004)
- Opened franchise in China Shenzhen TECHNOLOGY Co., Ltd. (2004)

○ Patents/Certificates

- ISO 9001:2001 (Until Sept 2014)
- Analysis equipment TUV certification (2003)
- China environmental sanctuary certification (China Shenzhen TECHNOLOGY Co., Ltd. 2003)

DH-M CO., LTD.



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○ Overview

DH-M Co., Ltd. has the company ideology of "We contribute to humanity with best service and excellent technology in air and water environmental area," and we are building the infra internally and externally by taking the laboratory, new technology, and new product development as an axis for a vision of existing as the competitive company continuously.

We hold 12.4 billion KRW of total asset, 1.2 billion KRW of capital, and 45 permanent employees.

We have domestically commercialized the high pressure fan and wash water pump, etc in high pressure sector for the 1st time in domestic and have achieve the 1st goal of import substitution to domestic, moreover, as the 2nd goal, we have secured the original technology that received recognition domestically and internationally in area of high pressure pump and ventilator with the teamwork and bond of sympathy of company members and cooperative company. By applying this technology, 100% of domestic commercialization of biogas plant which is the low-carbon green business of organic waste, is researched and developed since 2004 and the 3rd goal which is the research assignment and planning research assignment of Ministry for Food, Agriculture, Forestry and Fisheries, is successfully accomplished for 6 years, lastly, we are trying our best for company goal which are the increase in sale and revenue generation.



Wanju-gun energization worksite



Gwangju green town worksite



Namyangju, Jingeon sewage treatment plant

○ Technology/Services

· Ring blower

Ring blower used to be relied on the developed countries of Siemens Germany, Fuji Japan, Hita, etc entirely, however, 22 types of 0.4kw~55kw have been 100% domestically commercialized from 1996 and the characteristics of this high pressure ventilator, is the pressured air from stage 1 impeller transits the middle casing to stage 2 impeller and re-pressured and as of inhalation and discharging function, strong air is being used in 2 kinds.



· High-pressure plunger pump / Washing system (Power production of 2.2kw~500kw)

It is the high efficient product that is used in a various usage of high pressure water by pressuring the inhaled water in pump by piston and it is used in washing process that requires the high pressure effect, moreover, it is the product that can acquire the high effect in fast time, furthermore, reduces the water as well.



· Bio gas plant / Energization of livestock excretions, food waste, etc

We have researched the bio gas plant using organic waste, we have acquired anaerobic digestion, gas purification, gas development, waste heat energization, odor power plant and soil deodorization treatment system, facility management, etc and it is the energy system process that optimized with 100% localized material.



○ Track Records

- Selected as development business of low-carbon green town in Gwangsan-gu, Gwangju (Sept 1 2012 ~ Apr 1 2013, Gwangsan-gu, Gwangju) under supervision of Ministry of environment / Korea Environment Corporation, 30Tons of livestock excrement treatment
- Selected as energization business of livestock excrement (May 30 2012 ~ June 30 2013, Wanju-gun, Jeollabuk-do) under supervision of Ministry for Food, Agriculture, Forestry and Fisheries, 100 Tons of livestock excrement treatment
- Ministry for Food, Agriculture, Forestry and Fisheries, Agriculture and forestry technology development business (May 30 2007~May 29 2010 / Anseong, Gyeonggi-do)

Development project: Bio gas production process connection farmhouse type livestock excrement integrated recycling process system development and commercialization)

- Ministry for Food, Agriculture, Forestry and Fisheries, Agriculture and forestry technology development business (Apr 25 2005~Apr 24 2008 / Hongseong-gun, Chungcheongnam-do)

Development project: Bio gas of 20kWh and fuel supply and system development and livestock commercialization development technology of diesel mixed firing type power plant

○ Patents/Certificates

- NET new technology certification (10⁻³ torr roots type vacuum pump commercialization technology): Ministry of Knowledge & Economy (Aug 23 2012)
- Green technology certification: Ministry for Food, Agriculture, Forestry and Fisheries #GT-10-00175 (Dec 16 2010)

- Design and production of livestock excrement treatment facility: Seo-gu Office, Incheon #2010-1 (Mar 29 2010)

- Professional company of new renewable energy: Ministry of Knowledge & Economy #2009-5387 (Dec 16 2009)

ENBION INC.



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○ Overview

Enbion Inc. is the environmental industry in atmosphere sector and is established in February 1999 under the purpose of oxidation catalyst treatment equipment for volatile organic compound and odor, and biological treatment business. We hold 6.6 billion KRW of total asset in 2011 and 880 million KRW of paid-in capital with 49 permanent employees. As a result of continuous research development activity since our establishment, we have acquired 27 technology-related properties which include 25 patents, 2 utility models, etc related with odor removal equipment, moreover, it includes 7 international patents which focuses on international exportation of environmental technology development.

Especially, we have achieved excellent research result and performance through 3 years of next generation core environmental technology development from 2001 to 2003 and have selected as Best Assignment in research and application. Based on developed environmental technology, we are raising export performance of 3.5 million USD in Russia, 2.3 million USD in China, 770 thousand USD in Hungary and more which is 6.7 million USD in total.



Hyundai Mobis #2 factory



Hyosung factory China



Hansol Paper Co., Ltd. B/F

○ Technology/Services

• RTO/RCO Heat storage combustion facility system

After combustion treatment of low concentration VOCs gas, as of heat recovery that treats air pollution prevention equipment, it realizes subminiature rotor rotating part and high durability and changed minimum pressure. Possibility of gas being mixed is reduced by separating the inflow and outflow of air. Furthermore, the size of rotor is half compare to other system and according to the application of dead zone and easy sealing change, it is economical and easy to manage, moreover, realized the optical operation condition. In case of RCO, it changes the more than 95% of heat and at the same time, the harmful gas is enriched so it is suitable with exhaust gas of high temperature.



• Bio filter System

Bio server™ is one of the treatment method that biologically treats pollutant in gas and it is the disassembling method using water, CO₂, and harmless salt according to metabolic activity of microorganism which is fixed on porosity organic and inorganic composite carrier so it is economical and eco friendly treatment method. Especially, it shows excellent odor removal effect in wastewater treatment plant and food waste treatment plant which are the major cause of odor.



• Enbion Building Air Quality Control

It is the duct system of medium and large building and it pre-treats the inflowing odor and harmful substance in 3 stages of purification method (Pre-filter-Antibacterial static electricity filter- catalyst filter) and using the room temperature oxidation catalyst, dust and harmful substance are absorbed and decomposed at the same time. it fundamentally absorbs and decomposes the pollutant so its efficiency decline according to usage period and prevents the re-desorption of absorbed pollutant, therefore, it is the eco-friendly system that prevents the secondary indoor air pollution.



○ Track Records

- Russia LG Electronics Inc. (RTO, 2000m³/min) (July 2012)
- SK Battery Pyeongga-dong odor removal facility installation construction (RTO, 600m³/min) (Jan 2012)
- China A tire odor prevention facility (RCO, 2,000m³/min) (July 2010)
- Seoul metropolitan region landfill odor prevention facility installation construction (B/F, 1250m³/min, 2set) (Apr 2010)
- Food waste resource recovery plant odor prevention facility installation construction (B/F, 200m³/min) (Oct 2009)
- Hansol Paper Co., Ltd. Daejeon factory odor prevention facility installation construction (B/F, 400m³/min) (Oct 2008)
- Hungary Kraftzer tire scouring process (RCO, 2,400m³/min) (Dec 2007)

○ Patents/Certificates

- Regenerative thermal oxidizer (US patent, registration #7,762,808, July 2010)
- Biological catalyst deodorization equipment with rotation type means of high pressure spray equipment (New technology verification #128, Apr 2010)
- Heat storage combustor (Patent #10-0704639, Apr 2007)
- Room temperature catalyst manufacturing method for odor substance of weather (Patent #10-0643576, Nov 2006)
- Biological treatment method of pulmonary gas (Patent #0321197, Jan 2002)
- Carrier manufacturing method for biological treatment of odor and volatile organic compounds (Patent #0302019, June 2001)

GDECOTECH CO., LTD.



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○ Overview

GDECOTECH Co., Ltd. is the environmental industry of atmosphere and water and has established in June 16 1980. From 1980, exhaust system which is the air pollution prevention facility for semiconductor manufacturer, is domestically technified and we are supplying to major industry in LCD, electronic, chemicals, etc with our finest product through continuous research and development domestically and internationally, moreover, we are dominating the market by commercializing new technology application equipments such as various "Purification treatment equipment for toxic gas" which is applied to gas plant as well as "PFC reduction equipment," "White lead prevention scrubber system." The annual sale of 2011 is 67.2 billion KRW, paid-in capital of 2.8 billion and 6 thousand, and we hold 140 employees. We have received the commendation of Prime Minister through commercialization of new technology, have designated as Promising Small & Medium Enterprise in Gyeonggi-do, have awarded Grand Prize of Venture in 2007 and have acquired FM certification by achieving recognition of Excellency from FMRC, USA.



Cheongju Hynix semi-conductor scrubber system



Samsung Electronics 13LINE 1300CMM



LG DISPLAY P7 ECS System 2500CMM

○ Technology/Services

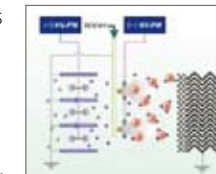
• WET Scrubber

- Exhaust gas treatment equipment for semi-conductor and high technology display industry
- Holds installation experience of wet scrubber more than 500 sets
- System that removes various hazardous air pollutants effectively
- Excellent mechanical safety



• ECS (Electrostatic Charging Scrubber) System

- It is the equipment that reduces the white lead by improving the efficiency of fine particle removal and gas absorption according to introducing ionizer and charged droplets spray nozzle to previous wet scrubber
- Fine particle that inflows into ionizer is charged electrically(-) according to corona discharge



• PFC Scrubber System

- It is the CVD equipment for exhaust treatment which can contain F2 gas in area of semi-conductor and LCD
- Scrubber is consisted of active transition equipment and gas absorption equipment and in active transition equipment, supersaturation of water vapor is induced of flowed in F2 gas according to steam, moreover, forms the sufficient turbulent flow through perforated plate stage to induce the conversion as HF. In rear part of gas absorption equipment, converted highly concentrated HF gas is absorbed.



○ Track Records

- Installation of M7A main scrubber: Hynix (3.1 billion KRW, 2011)
- OMAN Sewage treatment plant OCU system: Hyundai Rotem corp. (1.2 billion KRW, 2011)
- SCR/DUCT production and installation construction: Samsung C&T Corporation (3.4 billion KRW, 2011)
- Giheung FRP DUCT construction: Samsung C&T Corporation (3.4 billion KRW, 2011)
- SIB FRP SCR/DUCT production and installation construction: Samsung Engineering Co., Ltd. (6.7 billion KRW, 2011)
- P 4/5 Toxic exhaust prevention facility improvement construction: LG DISPLAY (8.7 million KRW, 2011)
- Raw material yard Silo main body (Construction) dust collector: POSCO Engineering & Construction Co., Ltd. (1.2 billion KRW, 2011)

○ Patents/Certificates

- Continuous washing equipment of dust collecting electrode of wet electric precipitator (Patent #0124157, May 20 2011)
- Gas flow regulating equipment of damper (Patent #0728177, Jan 3 2008)
- Hybrid scrubber system (Patent #0793376, Jan 3 2008)
- Fire retardant and incombustible FRP mist eliminator (Patent #0572729, Apr 13 2006)
- Method of manufacturing adsorbent for dioxin removal and adsorbent (Patent #0567411, Mar 28 2006)
- Exhaust gas fan with dual material (Patent #0384371, May 6 2003)
- Exhaust gas fan (Patent #0367565, Dec 28 2002)

J-E TECH CO., LTD.



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○ Overview

J-E TECH Co., Ltd. is the company that produces atmospheric filtration and precipitation facility and for the past 17 years, we have secured 18 domestic and international patents and 6 utility models through continuous R&D for development of new technology, moreover, we are producing fusion-type high efficiency precipitation facility which is differentiated with previous precipitation facility. J-E TECH's various technologies are focusing on development of worksite environmental improvement and prevention of air pollution. We are presenting various technologies in various industrial areas such as various boiler and general exhaust gas treatment such as denitrification, desulfurization and dust collection of incinerator, PM2.5/PM10 level of ultra-fine dust treatment technology of thermal power plant and cement plant, special precipitator for metal machining process such as copper smelting and melting plating process, etc.



HI-FILTER installation site



CY-BAG Hadong thermal demonstration business

○ Technology/Services

• CY-BAG FILTRATION SYSTEM

- It is the hybrid-type precipitation equipment of centrifugal force precipitation equipment and filter cloth precipitation equipment and 2 facilities are simplified into 1 facility so it is the high efficiency precipitation equipment with minimized installation area.
- The fatal disadvantage of filter cloth precipitation equipment which is the moist is removed in advance according to centrifugal force so it has the effect of reducing maintenance cost by extending the lifespan of filter cloth
- We hold 2 patents regarding CY-Bag filtration system (Powdered coal complex precipitation equipment, inertial flow complex fine dust collection device), moreover, have acquired NEP (New Excellent Product) certification from Ministry of Knowledge & Economy



• HI-FILTER SYSTEM

- It is the hybrid-type precipitation facility of electrical precipitation technology and filter precipitation technology and its collection efficiency of fine dust (PM10, PM2.5) is high and according to minimized installation area with simplified structure compare to previous facility, initial investment cost and maintenance cost is significantly reduced
- Most of dusts are collected from dust collecting electrode so dust load of filter gets reduced and lengthens the exhaustion interval of filter so it has the strong point of extending the lifespan of filter



○ Track Records

1. CY-BAG FILTRATION SYSTEM

- 2.9 billion KRW of supply contract of Yeongheung Thermal Power Plant unit 5,6 dust collection equipment (2012)
- 7 billion KRW of supply contract with Chinese top 5 coal mining company (2011)
- Hadong Thermal Power Plant joint demonstration business (2010), supply of facility (2011)

2. HI-FILTER SYSTEM

- Supply of demonstration facility to Seocheon Thermal Power Plant (Korea Midland Power) (2011~2013)
- 1.3 billion KRW of technology exportation contract with Xuanhua Metal Environment Protection Equipment Manufacture Co., Ltd. in Beijing, China (2009)

○ Patents/Certificates

- Acquisition of CY-BAG SYSTEM -NEP(New Excellent Product) certification (Aug 2012)
- Selected as Excellent Environment Industry from Ministry of Environment/Korea Environmental Industry & Technology Institute (July 2012)
- Integrated-type filter module and precipitation equipment that contains it (Aug 2011)
- Powdered coal complex precipitation equipment (May 2011)
- Commendation of Minister of the Environment <Merit of green industry and growth> (2010)
- Inertial flow-type complex fine dust collection equipment (Dec 2010)
- Integrated-type precipitation equipment (Mar 2008)



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○ **Overview**

KC Cottrell is established in 1973 under the mission of atmosphere environmental plant has to be made in our hands directly and has developed to professional Korean environmental company by expanding the business area to technical advice service regarding related facility and solar power plant as well as design and production of electric precipitator which is dust and gas treatment facility, desulfurization and denitrification facility, and ash treatment facility. According to the effort of employees and trust of customer, we have achieved the order scale of 395.2 billion KRW and sales of 211.3 billion KRW. As the project order with Taiwan corporation, Talin/Hsinta starts, we have expanded our business to UK, USA, China, Taiwan, Japan, Vietnam, India, etc, moreover, are strengthening the competitiveness in world market.



POSCO Gwangyang Iron Co,
5 sintering exhaust purification facility



Taiwan Hsinta Plant Unit 1, 2, desulfurization,
electric precipitator, ash handling facility



Order of Renault Samsung Motors 20MW
solar power generation equipment

○ **Technology/Services**

• **Electric precipitator (Dry-ESP, wet-ESP, De-Tar ESP (Electronic Stability Program))**

It is the dust removal facility using electric precipitation method that decomposes the gas with the particle according to electrostatic force within the electric field by electrically charging the particle among gas through corona which is occurred according to DC (Direct Current) high voltage. Electric precipitator of KC Cottrell provides the system that answers the needs of customers with energy-saving design, high precipitation effect and durability.

• **Desulfurization facility (Dry process flue gas desulfurizer, wet flue gas desulfurizer)**

It is the facility that removes the sulfur oxide that is discharged in combustion process. KC Cottrell has successfully performed the large projects such as Cheongju-si District Heating Corporation and Dangjin Thermal Power, Samcheonpo Thermal Power, Hadong Thermal Power Plant, etc with wet limestone gypsum process which has achieved recognition and has already been commercialized; moreover, its Excellency of function and quality also achieved recognition as well.

• **Denitrification facility (Selective catalytic reduction / Selective non-catalytic reduction)**

Among the facilities that remove nitrogen oxide from exhaust gas, selective catalytic reduction (SCR) guarantees the highest efficiency and safety. It is the process that converts the nitrogen oxide into harmless N₂ and N₂O by injecting reducing agent of NH₃ system to solid catalyst. KC Cottrell is currently providing the optimized nitrogen oxide removal facility that is suitable with the characteristic of each industrial site such as power generation, steel, incineration, and cement area.



Gwangyang Iron Co.,
Electric precipitator



Dangjin Thermal Power Plant
desulfurization facility



Taishan Power Plant in China

○ **Track Records**

- Order of Renault Samsung Motors Busan Factory Solar Power Plant construction work, 54.1 billion KRW (2012)
- Order of Dangjin Thermal Power Plant Unit 9, 10 precipitator 1000MW x 2 (2012)
- Order of Tufanbeyli desulfurization, precipitator, limestone handling project, 38.1 billion KRW (2011)
- Ash handling, precipitator, SCR for Rabigh Power Plant No.2 project in Saudi Arabia 700MW x 4 (2011)
- Desulfurization facility of Hsinta Thermal Power Plant in Taiwan and electric precipitator and performance improvement construction, approximately 114.8 billion KRW (2011)
- Desulfurization facility of Yeongheung Thermal Power Plant Unit 5, 6 870 MW x 2 (2011~2014)
- Creation of flue gas purification facility of POSCO Gwangyang Iron Co., 62.9 billion KRW (2009~2011)
- Denitrification facility of Danjin Thermal Power Plant Unit 1~4, 500MW x 4 (2006)

○ **Patents/Certificates**

Certification

- Designation as Excellent Environment Industry: Ministry of Environment (2012)
- NET New Technology Certification (Electric precipitation technology mounted with stage 1 electric charged saw blade discharge electrode): Minister of Knowledge and Economy (2011)
- “Korean Hidden Champion Foster Project” target company certification: The Export-Import Bank of Korea (2010)
- Environmental Management System certification (ISO 14001): Korean Foundation for Quality (2010)

KEPCO E&C



○ Contact Information

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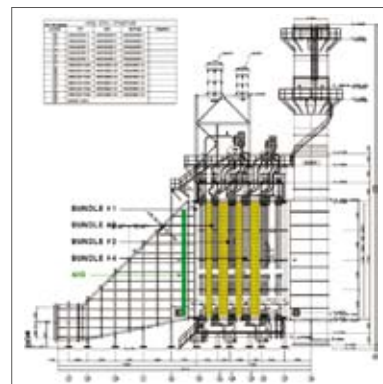
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○ Overview

"KEPCO E&C" has established in 1975 for design of power plant of Korea and since the establishment, we have accomplished the design of nuclear power plant, thermoelectric power plant, hydroelectric power plant, thermal power plant, and etc. For the design of nuclear power plant, it has been performed independently and Korean design of 1,000W nuclear power plant has been standardized, moreover, the design technology of 1,444MW next generation nuclear power plant which possesses the international competitiveness is developed and is being applied on Singori Unit 3, 4 and Sinuljin unit 1, 2, moreover, is exported to UAE. In part of thermal power plant, design of 500MW thermal power plant has been standardized and according to its technology, we are currently performing overall design of 1,000MW thermal power plant. Our major environmental business areas are flue gas denitrogenization technology, flue-gas desulfurization technology, water pollution prevention technology, environmental impact assessment, biomass generation and more. We hold 2,249 employees and have achieved 663.3 billion KRW of sales in 2011.



Incheon Airport Energy denitrification facility



Boryong Thermal Power denitrification facility



Ulsan Thermal Power hybrid SCR

○ Technology/Services

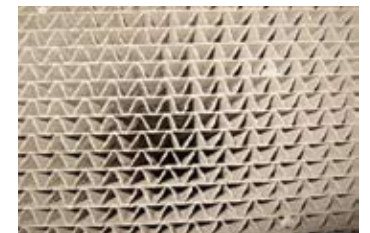
• Flue gas denitrification facility (SCR, SNCR, Hybrid SCR)

- In case of combusting the fossil fuel, nitrogen oxide which is pollutant gets discharged and it is the technology that removes it
- It is the decomposing technology that decomposes the NOx into non-polluting N₂ and H₂O by passing through the catalyst after spraying the ammonia(NH₃) on exhaust gas of front side of catalyst
 $4\text{NH}_3 + 4\text{NO} + \text{O}_2 \rightarrow 4\text{N}_2 + 6\text{H}_2\text{O}$
- The installation and operation expense of denitrification facility has been reduced significantly according to developing the next generation Hybrid SCR technology which is possible to denitrify in any operation condition of boiler



• Nitrogen oxide removal waveform catalyst

- By developing excellent denitrification catalyst using nano technology, when the time of combustion of coal, oil, natural gas, wood, waste, etc, most of discharged nitrogen oxide is removed
- Previous denitrification catalyst used to be applied with high temperature of 300~400°C, however, this catalyst is possible to apply with wide range of temperature of 170~550°C
- It has a wide range of temperature usage and by mass-producing inexpensive waveform dinitrification catalyst, it is possible to remove nitrogen oxide easily and inexpensively



○ Track Records

- Pohang LNG Combined power generation Unit 1,2 / 121 MW (Gas, Gas turbine, June 2012)
- Saudi Rabigh VI Unit 4 / 700 MW (Oil, power plant boiler, June 2012)
- Taichung Unit 4,5,6 / 550 MW (Coal, power plant boiler, May 2011)
- Coop City #1,2 / 12 MW (Gas, Gas Turbine, Feb 2010)
- HELCO Unit 1,2 / 20 MW (Oil, Gas Turbine, July 2009)
- Boryeong Thermal Power Unit 1 / 500 MW (Coal, power plant boiler, July 2009)
- Ulsan Thermal Power Unit 4,6 / 400 MW (Oil, power plant boiler, June 2009)
- Youngheung Thermal Power Unit 1,4 / 500 MW (Coal, power plant boiler, May 2009)
- Incheon Airport Energy Unit 1,2 / 45 MW (Gas, Gas turbine, Nov 2007)

○ Patents/Certificates

- Preparation Method of Vanadium/Titania-Based Catalyst Showing Excellent Nitrogen Oxide-Removal Performance at Wide Temperature Window through Introduction of Ball Milling, and Use Thereof (US patent #8,088,709, Jan 3 2012)
- Vanadium/Titania-Based Catalyst for Removing Nitrogen Oxide at Low Temperature Window, and Process of Removing Nitrogen Oxide Using the Same (US patent #7,820,590, Oct 26 2010)
- Hybrid system for the removal of nitrogen oxide of exhaust gas in boiler (Korea, patent #10-1002888, Dec 14 2010)
- Manufacturing method of vanadium/titania type catalyst which possess excellent scavenging activity of nitrogen oxide in wide temperature range according to the introduction of ball million (Korea, patent #10-0767563, Oct 9 2007)

SANG WON MACHINERY CO., LTD.



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○ Overview

Sang Won Machinery Co., Ltd. has supplied localized development of various plant facility as well as automobile industry since the establishment of 1984 and from 1993, has pursued the supply of continuous research and development of plant facility of energy-saving type which is eco-friendly as well. With accumulated experience and technique, we have become the company with green technology that provides the eco-friendly energy-saving type plant facility for domestic and oversea automotive industry, painting, coating, printing, electronic semiconductor industry, etc, in 2011.

For the green management, we have combined the head office, laboratory, and factory and have moved to Yangchon Industrial Complex in Gimpo (Gold Valley) and the international exportation of green technology facilities are continuously increasing.



GM Korea-Gunsan Plant Green Dry Oven System



PowerTech America-Georgia Impregnation System



GM Korea-Changwon Plant Advanced RTO System

○ Technology/Services

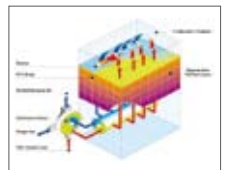
• Green technology certification: Green dry oven system

Using our advanced RTO system, VOC cause which occurs in dry process such as painting, coating, printing, adhesive industry, etc is removed in dry process and green dry oven system which recycles waste heat discharges only 15 % of amount of emission to atmosphere of previous facility according to the unification of RTO which is exhaust VOC gas purification facility with hot air supply equipment, lastly, the size and length or duct is reduced significantly so radiating energy and installation space is saved significantly as well.



• Advanced RTO system

Our unique advanced RTO system which is exported to 11 worksites in Japan and numerous delivery to domestic large companies, removes VOC gas which is contained at dry process exhaust that uses organic solvent effectively and economically and such a process has succeeded the commercialization development in 2004 with a support of Ministry of Environment, lastly, it is the facility that is selected as excellent technology of exportation of next generation core environmental technology development industry for 2 consecutive years of 2009 and 2010.



• Green Impregnation system for castings

Since the production and supply of impregnation system for castings for automotive converter housing in 1993, green impregnation system for casting which provides impregnation solution recycling system and process water recycling system together according to continuous development of design technology, is supplied, moreover, we hold the highest performance in domestic in area of mass production of automotive aluminum die-castings, lastly, it is being exported to USA, China, Mexico, etc.



○ Track Records

- Exportation to China of green vacuum impregnation plant for automotive casting product (2012)
- Supply of green dry oven system Unit 3 (2012)
- Exportation to China of green vacuum impregnation plant for automotive casting product (2012)
- Exportation to Mexico of green vacuum impregnation plant for automotive casting product (2012)
- Successful development of green dry oven system (With a support of Ministry of Environment) started to supply (2011)
- Supply of green dry oven system Unit 2 (2011)

○ Patents/Certificates

Major certification

- Green dry oven system (Green technology certificate) (2011)
- Horizontal distribution type RTO, Next generation core environmental technology development-Excellent technology 100 selection, excellent technology of exportation (2010)
- Next generation core environmental technology development-Excellent technology 50 selection, excellent technology of exportation (2009)
- Horizontal distribution type RTO system (Environmental new technology valid date 'July 2004~June 2010)

Major domestic and international invention patent:

- Green dry oven system with heat storage for hot wind generator (Domestic patent, Dec 14 2010)
- Separation type of distribution rotor and horizontal type rotor divider that uses this distribution rotor (Chinese patent June 10 2009, Japanese patent July 13 2007, US patent Aug 1 2006)
- Separation type of distribution rotor and horizontal type rotor divider that uses this distribution rotor (Domestic patent, Oct 20 2005)
- Horizontal distribution type heat storage combustor (Domestic patent, Aug 5 2004)

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○ Overview

As a family company of Chosun Refractories Co., Ltd., Chosun Refractories ENG Co., Ltd. was established with a purpose of expert general engineering that can handle all design, producing, installation, and operation for incinerators for domestic waste, industrial waste, medical waste, and derived fuel boiler. With a number of 57 regular employees, this company has headquartered at Gwangyang city along with 2 other offices at Pohang city and Seoul. Also, there are branches in Indonesia, Rumania, and Vietnam. This company has the highest performance in design and installation of incinerators in local market, and also exports and installs in overseas such as Oman, Thailand, Vietnam, Japan, and Iraq. This technology for incinerators is the company's own unique technology, and incinerators for high capacity (600 tons per day) is almost ready to be launched.



Saehan Media



Samsung Heavy Industries



Oman Drydock

○ Technology/Services

• Rotary Kiln + Stoker Combined Type

It is an independently invented technique of rotary kiln combined with stoker, and also the most efficient incineration system for various kinds of wastes.

• Stoker Type

Stoker Type is equipped with stair-type inclined grate to increase throughput of urban wastes. Wastes are moved slowly by grate that is mechanically operated in combustion chamber. Wastes are continuously fed to a side of the combustion chamber, and cinder is continuously discharged through the other side.

• Incineration facility with boiler exclusively for derived fuel

It is a facility to generate electricity or directly supply to production line through producing steam using refuse derived fuel (RDF, RPF) and woodchip fuel (WCF).



○ Track Records

- Phetchaburi Waste to Energy System, Thailand (under construction)
- Asia Paper MFG. Waste to Energy System (Mar 2012 completed)
- GS Platech (Mar 2012 completed)
- Sacheon Municipal Waste Treatment Facility (Feb 2012 completed)
- Geoje Municipal Waste Treatment Facility (Dec 2012 completed)
- Oman Drydock Environmental Facilities, Oman (June 2011 completed)
- Eunseong Jincheon Municipal Waste Treatment Facility (May 2011 completed)
- Wando Municipal Waste Treatment Facility (May 2011 completed)
- Sockcho Municipal Waste Treatment Facility (Dec 2010 completed)
- Chungju Clean Energy Park (Oct 2010 completed)
- Yeongpung Pile RPF Incineration (Dec 2009 completed)
- Pocheon Municipal Waste Treatment Facility (Aug 2009 completed)
- Egreen Industrial Waste Treatment Facility (Apr 2009 completed)
- Dongyang Environment Industrial Waste Treatment Facility (Jan 2009 completed)

○ Patents/Certificates

- Obtained ISO 9001 (2008)

DONGLIM ENG



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○ Overview

DONGLIM ENG was established in April 1999 as a company specialized in waste treatment and environment plant, and it has its own technology which takes full charge of design of product and process by setting up an affiliated laboratory and possessing cooperative companies for waste treatment facilities and environmental equipments. This company also owns DONGLIM ENE Ltd., which E.P.C such as facilities for energy recovery from waste (destructor station, CHP through anaerobic digestion) and CDM business is possible, as a subsidiary company and production is always available at their factory. They established a branch in Thailand in June 2011, and registered for machine equipments in August 2012. Currently, the number of regular employees is 60, and the total sales as of December 2011 are KRW 10 billion.



System for electricity generation from waste



Combustion gas treatment system

RTO

○ Technology/Services

• System for electricity generation from waste

It is a facility that uses steam from incineration of energy from waste (waste matters, RDF/RPF, lignum kinds and etc.) to produce heat, electricity, and it consists of incinerator, exhaust gas boiler, steam turbine, and facilities for preventing air pollution. It is possible to service all such as feasibility study, design, purchase, supply, construction, trial test, and operation.

• Regenerative (RTO), Catalytic (RCO) treatment facility

It is a facility that performs oxidation treatment on VOCs gas, and it improves heat recovery efficiency by applying CERAMIC thermal storage system that has high heat recovery ventilation. It has high heat efficiency and throughput efficiency, high adaptability of air flow and concentration, and low cost for maintenance.

• Environmental Industry

- Equipment for preventing air pollution (BAG FILTER, DR, SDR, CYCLON and etc.)
- Odor removing equipment (A/C TOWER, SCRUBBER, BIO FILTER and etc.)
- Dioxin removing equipment
- VOC removing equipment (RTO, CTO and etc.)
- Flue Gas Desulfurizer (FGD), Denitrification equipment (SCR, SNCR)

○ Track Records

- Thailand: System for electricity generation from waste
- Japan: CTO facility for VOC decrease
- Iksan city: combustion gas in incinerator treatment facility
- Hallastackpole: RTO facility
- Oman: Daewoo Shipbuilding & Marine Engineering combustion gas treatment facility
- Busan city: RDF incineration facility combustion gas treatment facility
- Ulsan city: Basic and execution design for gasification fusion facility for industrial waste plasma
- Goyang city: Basic and execution design for biomass energy
- Ulsan city: Execution design for bio gasification of organic waste

○ Patents/Certificates

- Certification of INNO-BIZ (2011)
- Certificate of affiliated laboratory (2010)
- Quality Management System (ISO 9001:2008)
- Environment Management System (ISO14001:2004)
- Registration of Environment Specialist (1999)
- Patent sewage treatment apparatus (Patent No. 10-1010053)
- Certification of utility model for Pressurization Water layer Type of Cleaning Dust Collector (No. 20-0413227) and 1 more
- Stocker apparatus for combustion in incinerator (Holding No. 10-2002-0055205)
- Auto Circle Turbulence Semi Dry Reactor System (Patent No. 10-0966736)



ENBIOCONS CO., LTD.



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○ Overview

Enbiocons Co., Ltd. is the environment-energy field company that is established in 1999 and we hold annual sales of 35.9 billion KRW in 2011, total asset of 19.8 billion KRW, paid-in-capital 1.3 billion KRW with 62 permanent employees. We have continued the research and development process of environment field since the establishment, moreover, we are developing the core technology of environment-energy field such as low-quality reforming technology in our own affiliated laboratory in 2011.

We practice the major environmental energy business of sewage sludge recycling, food waste recycling to a feed, household waste recycling to a fuel, livestock excrement recycling to a fuel, low-quality reforming business, and etc. we have selected as professional green company in 2011 as well as excellent environment industry in 2012 from Ministry of Environment.



Busan food waste recycling to a feed facility



Recycling of landfill in Seoul metropolitan area (Stage 2)



Busan sludge recycling worksite

○ Technology/Services

• Sewage sludge recycling to a fuel using safe method

Safe system atomizes the sewage sludge which has strong viscosity of the percentage of water content being 80±5% in tilt rotating-type dryer which has equipped the shortened crushing device and direct hot wind in high temperature of 600~800°C and such a process widens the specific surface area of particle and maximizes the dry efficiency, moreover produces the dry sludge in powder-type which has its diameter of below 10μm and granular size of less than 20mm, lastly, it is used in thermoelectric power plant as auxiliary fuel.



• Floating hot-air dryer using food waste recycling to dry feed

After crushing the food waste which has 80% of water content, mix with sub-material to make the water content of 40~50%, put into the hot-air dryer of 400~600°C, it gets floated according to hot air and gets sterilized and dried into less than 15% water content material within 2~3 seconds to recycle as a feed.



• Low-quality coal reforming business

The problem of low-quality coal which is the decreased calorific value according to high percentage of water content, is improved by integrating the belt dryer and fluid bed dryer. The transportation and drying process is practice at the same time as it gets loaded on the belt so the mass production is possible. Calorific value: Increase from 4,200 kcal/kg to 5,500 kcal/kg.



○ Track Records

- Completion of Miryang R&D laboratory and low-quality reforming facility (Aug 2011)
- Selected as Public Law Institution of Seoul metropolitan region landfill sludge recycling facility (Stage 3) (1,000 tons/day, July 2011)
- Beginning of construction of sewage sludge onshore treatment facility in Busan (550 tons/day, Oct 2010)
- Contract of Seoul metropolitan region landfill sludge recycling facility (Stage 2) (1,000 tons/day, June 2009)
- Completion of factory of food waste recycling to dry feed (Gijang-gun, Busan, Aug 2008)
- Completion of electrical purification facility of mine water of Hambaeck coal mine (7,200 tons/day, Mine Reclamation Corporation, Aug 2007)
- Weight reduction business of Tanchon sewage sludge treatment facility (Technology alliance of sludge weight reduction business, Seoul, Nov 2004)
- Completion of electrical purification facility of mine water of Najeon coal mine (3,000 tons/day, Mine Reclamation Corporation, Mar 2003)

○ Patents/Certificates

- Selected as excellent environment company (Minister of Ministry of Environment, July 2012)
- Certification of ISO9001:2008, ISO14001:2004 (Apr 2012)
- Selected as professional green company (#GE-11-0021, Aug 2011)
- Minister's Award from Ministry of Knowledge & Economy (June 2011)
- Certification of green technology (#Gt-10-00184, Oct 2010)
- License acquisition of business operator of coal pollution prevention (Sept 2006)
- Sludge drying equipment (#10-0591201, Mar 2006) and 16 domestic patents, 3 PCT, etc.

FORCEBEL CO., LTD.



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○ Overview

With establishment of the company in October 2000, Forcebel Co., Ltd. is an environment plant company specialized in research, development, production and commercialization of automated mechanical selective device for various wastes including domestic waste for the past 12 years. While we are carrying forward business in overseas and local market at the same time, we have also been progressing approximately 100 businesses in local market by developing Mechanical Biological Treatment (MBT), Material Recovery Facility (MRF), Sustainable Landfill Reclamation (SLR), and C&D Waste To Energy Recycling & Facility (CDWEF) with know-how on sorting out wastes we have been accumulated. Starting with exporting to Japan in 2006, we are contributing to spread out the excellence of Korean technology in environment-related technology by exporting our technologies to Brazil and the USA.



Mokpo city Environmental Energy Center



Jungnang-gu Material recovery facility



Japan Selective construction for landfill waste

○ Technology/Services

• Mechanical Biological Treatment

It is a technology to enhance new value of waste resources through Mechanical Treatment (MT) on domestic waste from houses, and to minimize occurrence of environmental pollution matters by lowering landfill and incineration through stabilizing environmental pollution matters such as landfill gas and leachate with Biological Treatment (BT).



• Sustainable Landfill Reclamation

It is a technology to use secured landfill spaces cyclically through excavation and dividing landfill wastes in use or done using to separate recyclable matters and energy recovery matters.



• Material Recovery Facility

It is a technology to enhance recycling of various kinds of wastes from houses by fine sorting and dividing.



○ Track Records

(1) Mechanical Biological Treatment (MBT)

- Mokpo city Environmental Energy Center (230 tons/day), KOLON GLOBAL Co., Ltd. (2011)
- Muju Jinan-gun wide pretreatment facility (80 tons/day), Hyosung Ebara Engineering Co., Ltd. (2011)

(2) Material Recovery Facility (MRF)

- Seoul Jungnang-gu selective device for recyclables (50 tons/day), SEIL ENS Co., Ltd. (2010)

(3) Sustainable Landfill Reclamation (SLR)

- Korea Yecheon-gun sustainable landfill reclamation construction and 100 other landfill constructions (2012)
- Japan selective device for waste of Tsunami export (80m³/day), OKUMURA Corp. (2011)
- Japan Landfill Reclamation System (SUPEX SYSTEM) export (80m³/day), REVIVE Co., Ltd. (2008)
- Japan Landfill Reclamation System (SUPEX SYSTEM) export (80m³/day), Todentsu Corp. (2006)

○ Patents/Certificates

(1) New environmental technology (3 items)

- Certified new environmental technology #302 (Ministry of Environment) (Jan 2010) and others
- Certified new environmental technology #229 (Ministry of Environment) (Oct 2007)
- Designated new environmental technology #52, verification #45 (Ministry of Environment) (June 2002)

(2) Local & international patents (26 items)

- Maintenance on sustainable landfill reclamation and resource recovery system for reclaimed combustibles and 20 others (local) (Oct 2011)
- Selective device for vinyl and 4 others (international) (Oct 2010)

(3) Other certifications (2 items)

- Certification for INNO-BIZ & Venture business (the Small and Medium Business Administration) (Dec 2006)
- ISO14001, 9001 (IIC) (Nov 2004)

INSUN ENT CO., LTD.



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○ Overview

Insun ENT Co., Ltd. is the environment company in construction waste field and is established in November 1997. We hold the 1st patent acquisition of intermediate treatment of construction waste in June 1998 and listed on the KOSDAQ in June 2002 for the 1st time, moreover, we hold the most diversified and systematic business structure among domestic environment field companies. Especially, we possess the system that can recycle all kinds of wastes and we practice the transportation, collection and intermediate treatment of construction waste, landfill and incineration, automobile recycling by disassembly, scaffolding structure facilities, etc. According to the financial statement in 2011, we hold the annual sales of 10 billion KRW. We hold the 1st place among companies in same field with total asset of 24 billion KRW, paid-in-capital of 1.72 billion KRW with 272 permanent employees. We possess the technology of new environmental technology and construction, moreover, possess many patents according to managing the corporate affiliated laboratory by ourselves.



Worksite of Goyang city, Gyeonggi-do



Worksite of Hwaseong city, Gyeonggi-do



Worksite of Yeongi-gun, Chungcheongnam-do

○ Technology/Services

• Development technology of recycling aggregate foreign substance removal using the bumpy paddle double log washer

The construction waste undergoes though intermediate treatment and applied on the process that produces the recycling aggregate and according to improving the paddle shape and the installation angel of double log washer tank into bumpy-type, moreover, according to the mutual friction between paddle and aggregate, aggregate and aggregate, the mortar of surface of aggregate is removed and it is the improvement technology of foreign substance removal of the recycling aggregate containing it.



• Wood waste selection technology among combined wastes

To sort the wood waste of combined construction waste which is the remaining material that is produced in construction waste intermediate treatment facility of gets directly imported into landfill, it is the technology that collects the wood waste using drag chain-type wet selector, air knife-type gravity separator, double cyclone-type blow sorting equipment, etc.



• Production technology of recycling thick aggregate for concrete which the cone crusher and impact crusher facility has been applied

By changing the structure of cone crusher, the eccentric-motion is changed to rotational-motion and the rotor part of impact crusher is improved so it is the technology that has unified the 2 kinds of crushers into 1 body. It is the production technology of recycling aggregate for concrete by improving the grain shape and by peeling the mortar of surface of aggregate through grinding, crushing, and by putting the previous recycling aggregate for road construction after applying to construction waste intermediate treatment process.



○ Track Records

- Oversea incorporation (Insun ENT Sucursal Colombia, Colombia) (July 2012)
- Contract of construction waste treatment service of packaging maintenance work of main center of Jeollabuk-do (June 2012)
- Contract of construction business of Seoul complex Unit 1, 2 of commissioned service of incombustible construction waste treatment (May 2012)
- Contract of maintenance work of ascon waste-consignment treatment service in 2012 (Apr 2012)
- Contract of construction waste treatment service of Hangang (River) water system 3-1 tool in Namyangju city (Mar 2012)
- Oversea incorporation (INSUN ENT P&M, Singapore) (Jan 2012)
- Incorporation and advancing into business of automobile, recycling of Insun Motors Co., Ltd (Sept 2011)

○ Patents/Certificates

- International patent of selection method of combustible waste among construction waste (Colombia, China, South Africa) (Sept 2012)
- New environment technology of #355 of selection technology of combustible waste among construction waste (Feb 2012)
- New environment technology of #350 of production technology of recycling aggregate for concrete (Oct 2011), verification #151 (Aug 2012)
- Certification of eco-label of aggregate and fine powder (Sept 2011), certification of eco-label of room-temperature regenerative ascon and compound (May 2012)
- Certification of environment management system (#14001) (Sept 2011), certification of quality management system (#9100) (Sept 2011)
- Certification of quality of recycling aggregate for concrete 25mm (Apr 2010) and for road construction 40mm (July 2010) from Ministry of Land, Transport and maritime Affairs
- Acquisition of new construction technology of #486 of High quality recycling aggregate production technology (Mar 2006)

KBEC KOREA CO., LTD.



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○ Overview

KBEC Korea Co., Ltd. is the leading company of eco-friendly business and holds local subsidiaries in Korea, Vietnam, and USA, moreover, are the specialized company of construction and management of landfill, recycling field and organic waste reduction. Since our establishment in 2004, we have continuously expanded our business area in domestic and overseas and currently following the eco-friendly business continuously. Moreover, as the company of domestic official strategy partner of Venesto Capital which is the OPIC leading company in USA, we are practicing the OPIC advisory.

We are expanding our eco-friendly treatment business and waste resource energization in domestic and overseas based on our patent technology and new technology. Especially, recycling of leachate and non-discharge system method shows the optimized adaptability in Southeast Asian countries such as Vietnam, Indonesia, etc.

Our major businesses are the construction and management of sanitary landfill using advanced eco-friendly technology, organic waste reduction business, waste resource energization business (RPF), CDM, etc.



Groundbreaking ceremony of General industrial waste sanitary landfill in BaRia-VungTau, Vietnam



Completion picture of landfill



Appointed waste landfill using air dome technology



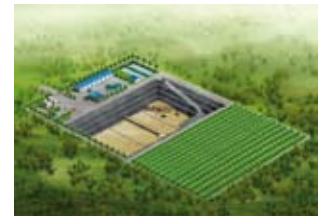
Sewage sludge reduction facility

○ Technology/Services

• Non-discharge and Recirculation technology of Landfill leachate

The leachate which is produced in landfill, does not get discharged but it is evapotranspired into the air using metabolic activity which is the low-cost landfill method. Its construction and maintenance cost is very inexpensive compare to previous landfill because the high class treatment and separate sewage treatment plant is unnecessary, moreover, it is the advanced sanitary landfill which allows the eco-friendly land creation through the creation of vegetation zone. (Domestic patent #0468999, in the middle of patent application in Vietnam)

– Target: Possible to apply to landfills of household waste, general industrial waste, and appointed waste



• Organic waste treatment technology using Thermal hydrolysis (Hydro-Tech)

It is the new technology that can reduce 50% of the moisture content rate of volume of sludge solid content and last sludge using the high temperature and pressure thermal hydrolysis technology (Patented) on the food waste and sludge from previous sewage treatment process. It takes the less area than previous facility and it is possible to operate economically according to automation facility. Moreover, the odor produced from sewage treatment process is drastically reduced so there is no worry of civil appeals.

– Target: Sewage sludge, food waste, livestock waste



○ Track Records

- Completion of industrial waste landfill in BaRia-VungTau, Vietnam (Stage 1 landfill, investment business) (Oct 2011)
- Entering the bio mass business in Philippine (June 2011)
- Selected as domestic official strategy partner of Vnesto Capital, OPIC advisory (June 2010)
- Contract of appointed waste landfill in Ho Chi Minh, Vietnam (Environment Construction of Ho Chi Minh) (Sept 2009)
- Contract of stage 1 modernization project in field of sludge reduction in Jungnang water recycling center, Seoul (Dec 2008)
- Contract of construction of household landfill of 3rd Phuoc Hiep, Ho Chi Minh, Vietnam) (Environment Construction of Ho Chi Minh) (Dec 2008)
- Construction of demonstration facility of sewage sludge reduction technology (Hydro-Tech) (In Jungnang water recycling center) (Mar 2007)
- Technology partnership agreement with CH2M HILL company, USA (2005)
- Establishment of KBEC Korea Co., Ltd. (2004)
- Establishment of KBEC USA (2004)

○ Patents/Certificates

- In the middle of patent application of “Non-discharge-type of leachate treatment system and method” (#1-2007-02175)
- In the middle of patent application of “Sewage reduction technology” in Vietnam (#1-2007-01684)
- Highly enriched organic waste treatment technology using continuous system of screw-type, direct steam heating, and thermal hydrolysis reactor (New technology of Ministry of Environment #282/June 2009)
- “System and method for treating sludge of sewage” (Patent #10-0728816/June 2007)
- Non-discharge and Recirculation technology of Landfill leachate and leachate non-discharge system treatment method using vegetation soil, plant, and evapotranspiration. (Patent #0468999/Jan 2005)



KM GREEN CO., LTD.



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○ Overview

KM GREEN Co., Ltd. constructed an environment-friendly general business waste landfill in July 2001 at San#192-10, Baekhyun-ri, Sandong-myun, Gumi city with size of 600 thousand Pyeong (1.98 million m²) which is the largest waste disposal facility nation-wide, and is operating the facility to seal off environmental pollution with air-dome type landfill. Also, they diversify their environment-related business, so photovoltaic power generation business and intermediate treatment of waste are being pushed ahead. Current capital is KRW 9.7 billion and revenue for 2011 is KRW 12.1 billion. Our company's investment company, KMDK Co., Ltd. is trying to establish CDM business at Phuoc Hiep landfill in Vietnam to sell CER (Certified Emission Reductions) which takes collecting of landfill gas and incinerating.

Representative: Chairman Kang, Sungyoung
President: Kim, Kangho



Gumi environment town preparation project complex



Complete view of air-dome type landfill



Facilities for intermediate treatment of waste



Landfill at Phuoc Hiep in Vietnam



Landfill gas collecting facility (Dec 2010)



Started operating incinerating landfill gas (June 2010)

○ Technology/Services

• Air-dome type landfill and intermediate treatment of waste

As a landfill company that handles business wastes (designated or general wastes) from all over the country, we run an environment friendly air-dome type landfill to minimize civil complaints and environmental pollution and also operate facilities for intermediate treatment of waste



• Size of business for licensing of landfill for general & designated business wastes

Section	Area of landfill (m ²)	Volume of landfill (m ³)
2-1 Work area	23,704	535,000
2-2 Work area	16,652	320,800
2-3 Work area	23,096	551,900
3 Work area	17,920	364,800
4 Work area	15,529	309,900
5-1 Work area	26,576	662,100
5-2 Work area	26,330	633,100

○ Track Records

– Conclusion of a contract for pre-sales on CER with the Asian Development Bank (ADB) (Jan 2011)

○ Patents/Certificates

- Gumi city plan facility (electric utility) notification of permission of execution plan (Gumi city notification 2012-160) (Oct 2012)
- Reasonable notification of business plan for intermediate waste treatment (Gumi city cleaning office-14915) (July 2012)
- Obtained license (#2012-53) for power generation (photovoltaic power generation) (July 2012)
- Approval of change designated waste landfill for Gumi work area #2-3, 3, 4, 5-1, 5-2 / Daegu Regional Environmental Office (Feb 2010)
- Registered CDM business for landfill #1 at Phuoc Hiep in Vietnam to UN (Nov 2009)



KUMHO FIBER INDUSTRIES CO., LTD.



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○ Overview

We are the leading company in recycling industry in Korea for 41 years since the establishment in 1972 and we are currently recycling various waste resources such as plastic bottle waste, polyester industrial waste, etc.

According to these technologies, we have achieved the annual sales of 21.3 billion KRW in 2011, and are expecting more than 25 billion KRW in 2012.

Moreover, we are continuously developing the raw material production technology of high added value through the production of high-quality and low-cost plastic bottle flake and recycling polyester staple fiber through recycling processing of waste resource based on eco-friendly treatment process.



Recycling fiber production line



Recycling fiber production line



Recycled fiber

○ Technology/Services

• REGENERATED POLYESTER STAPLE FIBER

Polyester staple fiber of our company is produced using high quality material of pet bottle flake and recycled chip which are produced from our company and virgin chip which is produced from petrochemical company and the main purpose of produced polyester staple fiber through this process are padding, wadding, non-woven fabric, stuffing toy, bedclothes, pillow, mattress, and other felt purpose.



• RECYCLED CHIP

We are producing directly using polyester scrap occurred from petrochemical company and it is being used as the main raw material of polyester staple fiber of our company.



• PET BOTTLE FLAKE

Pet bottle flake which is produced from our company is being used as the main raw material of polyester staple fiber and we are producing in 4 colors of clear, sky blue, green, and brown.



○ Track Records

- 5 million USD export tower (Nov 2011)
- 3 million USD export tower (Nov 2009)
- 1 million USD export tower (Nov 2005)
- Technology agreement with SK Chemical (2000)

○ Patents/Certificates

- Certification of company affiliated research laboratory (Jan 2012)
- Acquisition of GR (Excellent recycling product) certification (Nov 2011)
- Selected as KOTRA guaranteed brand company (Apr 2009)
- Awarded as grand prize of environmental technology (Aug 2008)
- Acquisition of patent (Nano-silver synthetic fiber and its manufacturing method) (Aug 2006)
- Acquisition of ISO 14001 certification (Sept 2005)
- Acquisition of utility model patent (Raw material weighing and transferred formulation system) (Oct 2000)
- Acquisition of ISO 9001 certification (Sept 2000)
- Selected as venture company (May 2000)

SHENTECH CO., LTD.



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○ Overview

SHENTECH Co., Ltd is the professional environmental plant company that focuses more on exportation than domestic demand based on the strengthened solid technology of 20 years after entering into the environmental industry with recycling compressor in 1992 and holds 24 permanent employees. There are 3,500 compressors in operation throughout the country including Jeju Island and as of 2002, we are exporting the environmental facilities such as large automatic compressor, conveyor and wind power selector for construction waste, etc, to Japan annually. We have completed the construction of various material recovery facilities in Ansan city, Cheonan city, Gimpo city, etc, for several years, moreover, we have won the contract of household pre-treatment facility of 800 Tons in Vladivostok, Russia in 2010 and have completed the construction of 2 years which showed the excellent environmental technology of Korea. We also have developed the new construction method of refuse derived fuel which meets the waste recycling policy of government and have applied to MBT Gapyeong-gun, Gyeonggi-do, moreover, have successfully completed the construction in 2012. We hold 7.3 billion KRW of annual sales and 2.5 billion KRW of exportation performance in 2011.



Material recovery facility in Cheonan city



MSW pre-treatment facility in Vladivostok, Russia



Construction waste middle pre-treatment facility in Japan

○ Technology/Services

• Material recovery facility system

We have successfully practiced the environmental plant in overseas such as Japan, Russia (Vladivostok, Scale of MSW 800 tons/day), etc, based on the various scale of MRF (5 tons/day~92 tons/day) construction performance in domestic and currently, we are receiving the inquiries of a demand of introduction of SHENTECH's advanced MRF technology from Ukraine, USA, Argentina, China, etc



• Manufacturing method of Refuse Derived Fuel

We have developed the new construction method of refuse derived fuel which is suitable with domestic household waste and have successfully applied to MBT in Gapyeong-gun, Gyeonggi-do, moreover, are actively using MBT facility in overseas exportation



• Recycling compressor

We are the leading company of domestic recycling compressor which produces the various types such as compressor for standard plastic garbage bag which is developed for the 1st time in domestic in 1995, multi-purpose compressor, landfill compressor, can compressor, PP band 2-axis compressor, 6-sided compression package machine, special compressor which are used in distributors and factory, etc, moreover, 3,500 facilities are currently in operation throughout the country



○ Track Records

- Pohang city, Construction of public material recovery facility (40 tons/day, 2012)
- Gapyeong-gun, Household waste pre-treatment facility (RDF) (65 tons/day, 2011~2012)
- Vladivostok, Russia, Installation construction of household waste pre-treatment facility (800 tons/day, 2010~2011)
- Chuncheon city, Material recovery facility (52 tons/day, 2010)
- Gwangmyeong city, RPF manufacturing facility (1 ton/hour, 2009)
- Anseong city, Material recovery facility (35 tons/day, 2008)
- Cheonan city, Material recovery facility (72 tons/day, 2007)
- Ansan city, Material recovery facility (92 tons/day, 2006)

○ Patents/Certificates

- Selected as Promising Export Company (2011)
- INNO-BIZ (2011)
- Certification of environmental management system (ISO14001), certification of quality management system (ISO9001)

Patent

- Recycling plastic selector using wind power (2011)
- Household waste RDF equipment (2011)
- Manufacturing method of RDF combustible waste (2011)
- Recycling plastic selector (2010)
- Garbage selector (2009)
- Plastic waste wet selecting method using gravity difference (2009)
- Recycling waste selector using wind power (2007)
- Environmental new technology certification: Household waste pre-treatment technology (#373)



VISION RECYCLE AND ENERGY CORP.

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○ Overview

• History

- 2008, Establishment of VISION RECYCLE Co., Ltd. Capital of 50 million KRW (Non-ferrous metal process, recycling plastic process)
- 2009, Changed company name to VISION RECYCLE AND ENERGY Corp. and increase in capital (150 million KRW)
- 2010, Proceed the development business of recycling equipment of waste wire (Communication line)
- 2011, Acquisition of patent after development—Conclusion of ordinary implementation contract of facility supply and management with subsidiary of major company
- 2012, MOU with SK accompanying growth with small and medium enterprise

• Size of company

- Employees: 15 people, expected sales 4.5 billion KRW (2012)

• Major environmental business field

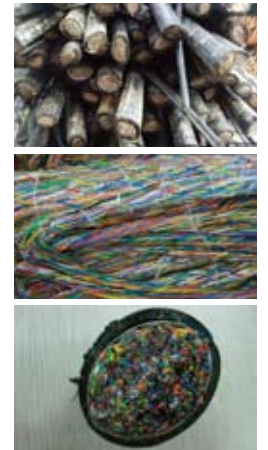
- Urban mine (Waste wire recycling business, valuable metal collection-circulation business)
- Synthetic resin recycling business (Recycling raw material production)



○ Technology/Services

• Waste wire (Jelly communication line) recycling equipment

- Current event: Jelly line (Insulation charging cable) which used to be used for duct and direct sale, is consisted of black polyethylene (or PVC) sheath as a outer skin and jilly which prevents the penetration of water and moisture at cable core so it is impossible to treat with general electrical circulation treatment method (Molting, chopping).
- General principle and major process: After molting the stage 1 sheath, organic synthetic resin (Jelly of inner skin, etc) is maintained not to be burned through semi-vacuum melting and is separated with copper and molted sheath is recycled as synthetic resin raw material and separated inner skin and jelly is recycled as recycling energy auxiliary fuel (Or as a fuel) to minimize the 2nd environmental pollution (Air pollution, 2nd stage waste)

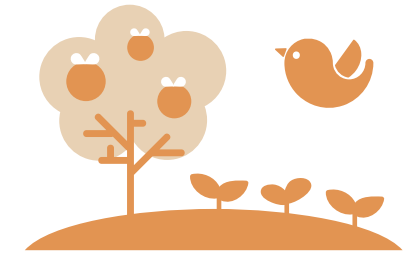


○ Track Records

- Satellite waste intermediary collection process (Oct 2012~Present)
 - SK telesys 1.2 billion KRW
- Cell phone waste entrustment management (Mar 2012~Present)
 - SK networks 1.2 billion KRW
- Delivery of wire waste recycling facility manufacture (Feb 2012~Apr 2012)
 - ReCO Metal (POSCO M-TECH subsidiary) 500 million KRW (3 unites)
- Contract of vinyl waste fluff purchase (Jan 2011~Dec 2011)
 - Cheongju, Jeongeup factory, etc of Korea Environment Corporation (400 million KRW)

○ Patents/Certificates

- Name of development technology: Wire waste (Jelly communication line) recycling equipment (Patent #10-1096594, Dec 14 2011)



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○ Overview

Beautiful Environmental Construction Co., Ltd. is the professional environmental service company and started the purification work of contaminated soil/groundwater in 1996, moreover, since the 2000s, the business area has been expanded to environmental business of U.S. Army, asbestos·mine pollution prevention, ecological river restoration business, wastewater treatment, landfill stabilization, and etc. The annual sale in 2011 is 22 billion KRW and since 2007, the sale growth is steadily increasing 30%~50% so that places us in 3rd place in same industry and as of December 2011, we hold the total asset of 10 billion KRW, capital of 2 billion KRW, and 80 permanent employees. From 2012, we are entering into oversea business such as KOC soil purification business in Kuwait and are planning Bio-Mass Power Plant in Indonesia which is the renewable energy business. We also have designated as Excellent Environment Industry from Ministry of Environment.



LPP worksite in Paju



Water treatment plant in station influence area of Yongsan city



FED Bio slurping

○ Technology/Services

• Purification of soil / groundwater

Since the 2000s, as the purification and restoration business of soil and groundwater accelerates, we have led the way by developing new technology among the industry which used to rely on the technology of developed country. We also have developed the soil cultivation, soil purification, bio slurping and landfill stabilization technology and followed the large scale soil purification business in domestic as well as with U.S. Army successfully.



• Thermal desorption / Soil washing system

Low-temperature thermal desorption system which acquired major part of patent which are rotary kiln and preheat dryer is effective with contaminated soil of high concentration and it has been applied to LPP, TKP purification business in domestic. The soil washing system has been applied to many purification businesses as variable system which shows the optimized system according to its scale of purification business.



• Landfill stabilization system

Mobile system of liquid-gas recycling process for early stabilization of landfill is the soil purification system developed as part of core environmental technology development business of next generation. Its mobility is excellent and especially, it is effective in liquidity collection of a floating oil and purification treatment of groundwater (Certification of new technology of Korea #1133)



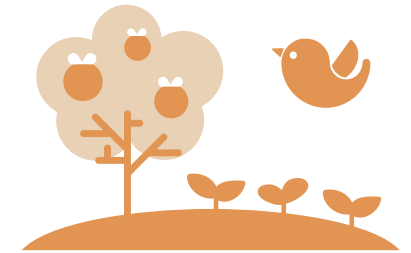
○ Track Records

- Purification business of former Korea Iron & Steel Land in Changwon city (July 2012)
- Purification business of contaminated area of station influence area of Yongsan city (Oct 2011)
- Environmental purification business of homeland termination pipeline (2009)
- Environmental purification business of returned U.S. base (LPP 1-1 base) (2008)
- Order from U.S. Forces Korea Contract Command BOA (Sept 2008, 5 years)
- Order from U.S. Army FED environmental corporation (Mar 2007, 5 years)
- Contract with U.S. Army FED Direct Push Drilling Service (July 2006, 3 years)
- Design and treatment service of bio slurping of 5 returned bases (Apr 2006, 1 year)
- Purification business of riverside of Keumho River in Gumi (June 2000)

○ Patents/Certificates

- Stabilization treatment system and method of livestock landfill according to ground oxidation (Dec 2011, in process of International Patent Application)
- Gravity concentration purification equipment according to natural gravitational settling of fine soil with heavy metal (Patent Sept 2011)
- Physical treatment system of DNAPL contamination area (Patent Aug 2011)
- Purification of river water and recycling system which applies multiple gas-liquid contact apparatus for odor removal in river and water quality improvement (Patent May 2009)
- Soil purification equipment, method and used rotary kiln and preheat dryer in this process (Patent May 2008)
- Rotary kiln used in soil purification equipment (Patent Jan 2008)
- Soil restoration equipment for driven vehicle (Patent new technology of Korea certification #1133, Aug 2003)

COENBIO CO., LTD.



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○ Overview

Coenbio Co., Ltd. pursues the purification of polluted water quality, soil, and waste in a way of eco-friendly by using effective micro organism and Coenbio is established in 2008 to contribute to protection of natural eco-system. Our company searches and selects the micro organism which is useful in restoration and purification of polluted environment among natural biological resource that has existed in the natural world for thousands of years, moreover, Coenbio has suggested the economical and eco-friendly solution by creating an environment that could maximize the characteristic of selected micro organism by purification target.

We hold our own technology development institute that is certified from Korean government and following the research and development to commercialize the micro organism product for contaminated environmental purification, moreover, have recorded 1.3 billion KRD with 5 employees based on 2011. We hold international patent (USA, Europe, Japan, and China) related with micro organism product solely in domestic and currently we have established the partnership company at China, moreover, producing and supplying micro organism product for environmental purification.

We are registered as a cooperative company with major company in domestic such as Samsung Engineering, GS Caltex, and Hyundai Oilbank, moreover, followed the purification business of oil polluted soil. We also are the cooperative company with SK-China which is located in China and are developing the microbial substance for waste water treatment and heavy metal and hazardous substance polluted soil and lastly, we have developed the treatment process and microbial substance to recycle the sewage sludge to organic manure.



Scattering organic fertilizer at the cornfield located in China



Spraying microbial substance for purification of polluted soil

○ Technology/Services

• Microbial substance for purification of polluted soil

- Purify the polluted soil by oil or heavy metal in biological method of decomposition and absorption and purified soils are reused on upland soil and fill material.
- There is no secondary pollution and is eco-friendly according to biological process method.



• Microbial substance for industrial wastewater treatment

- Wastewater treatment that contains non-biodegradable substance (Dyeing, paper making, etc): Removes the chromaticity and lowers high COD by applying microbial substance at the aeration tank.
- Disassemble and treat the poisonous materials (Phenol, PCB, cyanides, etc) in waste water



• Recycling technology of organic waste

- Use the sewage sludge and rural waste (Rice straw, tree leave, rice husk, etc) as a raw material, produce the organic fertilizer by applying microbial substance.
- By putting agricultural and livestock waste such as dead animal (Duck, chicken, and pig) and rotted egg into the treatment equipment and follow the fermentation decomposition with an input of microbial substance to produce the organic fertilizer within 3 days.



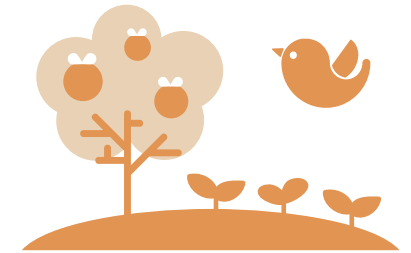
○ Track Records

- Sale of treatment equipment (SpeeRo) of organic waste of farm and livestock (2011~2012, 400 million KRW)
- Exclusive contract of sole distributorship of microbial substance with Environmental Technology Dissemination Center located at Heilongjiang, China. (2011, 8.3 billion KRW)
- Samsung Engineering, purification treatment of oil polluted soil around soil termination pipeline (2008~2010, 1.8 billion KRW)
- GS Caltex, purification treatment of directly managed petrol station (2008~2010, 1.0 billion KRW)
- Korean military, purification treatment around oil storage (2008~2010, 500 million KRW)
- Hyundai Oil Bank, purification treatment of polluted soil of directly managed petrol station (2008~2010, 100 million KRW)
- Supply of microbial substance for dyeing industrial complex and dyeing wastewater treatment in Daegu (2008, 100 million KRW)

○ Patents/Certificates

- Patent registration in U.S. (2011)
- Patent registration of 4 countries in Europe (UK, France, Germany, Swiss) (2011)
- Patent registration in Japan (2009)
- Patent registration in China (2008)
- 7 Patent registrations in Korea (2008~2012)
- 2 Trademark registrations in Korea (2008~2012)

DAEIL E&C CO., LTD.



○ Contact Information

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○ Overview

Daeil E&C Co., Ltd. is the environmental industry in soil sector which is established in July 2006, moreover, owns the institution licenses in soil purification, civil engineering, main agents of engineering activities (Waste, geological, natural soil area), professional light pollution prevention operator, soil environmental assessment, groundwater investigation, and etc. The annual sale in 2011 is approximately 15 billion KRW and holds 50 permanent employees. The main business area is soil/groundwater remediation design and construction of, environmental plant, soil/groundwater environment assessment and etc, moreover, we hold the thermal desorption device which is the largest and purely made in domestic solely and hold the most thermal desorption decontamination performance.

- Treats the contaminated soil which is hard to treat biologically such as lubricating oil, bunker fuel oil C and etc (95% or higher efficiency)
- Contract and construction of large-scale business through technology development (TKP Environmental pollution purification business_Pohang oil reservoir)
- Oil contaminated soil, heavy metal and non-biodegradable substance (PCBs, POPs, etc) are possible to treat by possessing soil cultivation, soil washing, dynamic electricity, subcritical facilities as well as large scale of thermal desorption equipment (40ton/hr)



Thermal desorption import purification worksite



Soil cultivation import purification worksite



TKP Pohang oil reservoir worksite

○ Technology/Services

• Thermal desorption purification technology

It is the method of treating high concentration polluted soil and non-biodegradable organic pollutant and it follows the method of purification of vaporization (Volatilization and desorption) and complete combustion of pollutant by heating the soil. The efficiency of purification is more than 95% and it is possible to purify large amount quickly. Treated soil owns the original physical property.

• Soil washing purification technology

It is the technique which treats the harmful organic pollutant that is combined with soil particle by weakening its surface tension or by changing, separating the heavy metal into liquid form

- By the introduction of hydraulic filter press, minimizes the high concentration of fine soil
- Complete removal of secondary contamination: Prevents secondary contamination according to contaminated water in washing process by possessing the water treatment facility

• Subcritical purification technique

It is the advanced treatment technique which treats polluted soil with non-biodegradable substance such as dioxin, PCBs through subcritical dechlorination reaction

- 2ton/day development production (Possess the design capability of 20 ton/day)
- Controls the secondary pollutant and effectively removes PCBs

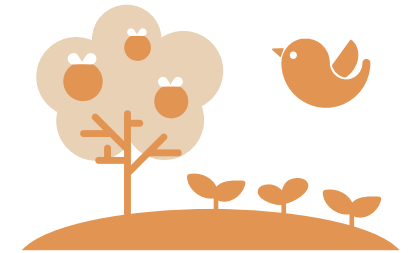


○ Track Records

- Soil decontamination service in new city in Han River Gimpo (Sept 2011~Sept 2012, approximately 600 million KRW)
- Soil purification business service of former River crossing group (Mar 2011~Dec 2012, approximately 400 million KRW)
- Contaminated soil treatment among military facility business in army located in Gapyeong, Yangpyeong (Mar 2011~Oct 2011, approximately 500 million KRW)
- Environmental purification business of thermal desorption purification construction of TPK closed oil reservoir (Pohang) (Feb 2011~Nov 2012, approximately 5.6 billion KRW)
- Environmental purification business of cultivation management of TPK closed oil reservoir (Pohang) (Feb 2011~Nov 2012, approximately 1.1 billion KRW)
- Purification business of soil contamination around Gaetgol retarding basin (Aug 2010~Mar 2011, approximately 1 billion KRW)
- Soil contamination restoration treatment in off-base POL area (May 2010~Dec 2011, approximately 300 million KRW)
- Cultivation management of returned U.S. base among environmental purification business (Camp Sears) (Nov 2009~May 2011, approximately 1.8 billion KRW)
- Environmental purification business of TPK closed oil reservoir (Camp Libby, pressure facility) (June 2009~Nov 2012, approximately 1.6 billion KRW)

○ Patents/Certificates

- Soil contamination treatment system and its treatment method using thermal desorption (Jan 3 2012)
- Thermal desorption equipment for purification of soil contamination that fulfills the reserve drying function (Jan 3 2012)
- Cooling equipment for soil purification (Jan 3 2012)
- Thermal desorption equipment for purification of soil contamination which holds dust treatment function (Mar 4 2011)
- Purification method and its equipment of soil contamination using subcritical water (Dec 20 2010)
- Treatment equipment and its method of contaminated dredged material (May 7 2010)
- Purification method and its equipment of pollutant that includes poly chlorinated biphenyl (Sept 24 2009)
- Method of producing high purity of phosphoric acid from waste acid liquid (Nov 7 2007)



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○ Overview

Dongmyung Enterprise Co., Ltd. is leading the way of realization of development and establishment of comprehensive environmental pollution prevention system such as air, water, waste, etc with soil and groundwater purification business as the center since our establishment in 1986. The annual sale is approximately 50 billion won in 2011 and as of October 2012, we hold 150 permanent employees. We have acquired KOSHA 18001, ISO 14001, ISO9001, INNO-BIZ, and green technology certification for the 1st time in our industry, and recently, we are expanding our business area ranging from environmental consulting, renewable energy, soil environmental assessment, and mine pollution prevention business.

In June 2012, our continuous green environmental technology development and environmental conservation activity has achieved the recognition and has awarded Bronze Tower Order of Industrial Service Merit from Green Management Award, moreover, in September 2012, our improved dynamic electricity purification technology is developed and acquired green technology certification from Ministry of Environment.



Chungcheongbuk-do import purification facility worksite



Busan ○○ purification site



Gimpo ○○ purification site

○ Technology/Services

• **Development and application of soil and groundwater contamination prevention system**

We have installed and are managing the largest scale in domestic of soil contamination import purification facility of 12,000 m² and we follow effective and economical purification treatment of contaminated soil using the most advanced soil contamination prevention system. Moreover, we hold 27 patents related with soil and groundwater purification.



• **Development and application of vapor recovery equipment through atmospheric conservation activity**

We have achieved resource recycling effect by installing and applying stage II which is the recovery process of volatile organic compound that occurs when refueling an automobile and by recollecting gasoline vapor which is discharged into the atmosphere, furthermore, after recollecting volatile organic compound that occurs during refueling an automobile, vapor capture facility which liquefies is developed and our effort has contributed to promote atmospheric environment preservation and oil resource recycling.



• **Localization development and application of permanent leakage measurement equipment**

We prevent soil and groundwater contamination in advance through leakage detection probability of higher than 95% as well as stock management monitoring, moreover, have brought the import substitution effect of more than 100 billion KRW through the localization of product.



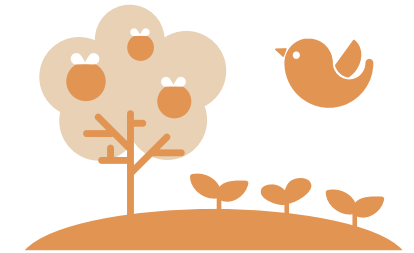
○ Track Records

- Korea Lang & Housing Corporation, soil purification of Han River new city in Gimpo (Sept 2011, 3.4 billion KRW)
- POSCO Engineering & Construction, soil purification of residential complex site in Haengdang-dong (Apr 2011, 3.2 billion KRW)
- Hyundai Oil Bank, soil purification of Busan ○○ site (Dec 2010, 9.7 billion KRW)
- SK Engineering & Construction, soil purification of Suwon Sky View (June 2010, 2.3 billion KRW)
- Korea Mineral Resources Corporation, soil and groundwater purification of 163-1 ○○ base (Feb 2009, 2.5 billion KRW)
- Korea Rural Community Corporation, purification of environmental contamination of returned U.S. base (May 2008, 7.2 billion KRW)
- Hanshin Construction, soil purification of Yongbigyo Bridge and Haengdang Girls' Middle School (Jan 2008, 3.2 billion KRW)
- SK Energy, soil purification of Busan logistics center (June 2007, 2.6 billion KRW)

○ Patents/Certificates

- Green technology 'Certification of purification method and technique of fluorine contaminated soil using improved dynamic electricity technology according to 2-dimensional electrode array' (Sept 2012)
- Occupational Health and Safety Management System certification (KOSHA 18001) (Sept 2010)
- Quality management system certification (ISO 9001:2008) (Aug 2010)
- Environmental management system certification (ISO 14001:2004) (Aug 2010)
- INNO-BIZ (Feb 2010)
- 'Washing method of heavy metal contaminated soil' (Apr 2007) and 26 patent registrations

ECOPHILE CO., LTD.



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○ Overview

Ecophile Co., Ltd. is the Korea's best professional environment venture company and has established in march of 2000 under purpose of soil purification and ground water purification, etc. Our company has registered 18 patents about environmental new technology such as biological purification technology and purification technique using dynamic electricity of our original technology. In 2011, for the 1st time as a professional small and medium soil purification company, we have acquired the bidding eligibility which allows participating purification business of oil contaminated oil in Kuwait from Kuwait Oil Corporation, moreover, in 2012, we have exported soil washing plant which treats contaminated soil to Kuwait (NCC Company) for the 1st time in domestic.



Dynamic electricity purification



Soil cultivation

Soil cultivation

○ Technology/Services

• Oil-degrading Microbial Agent

It is used to purify the soil and water contaminated by oil and is eco-friendly product that is safe with ecosystem. It is the product that the oil decomposition is maximized according to new concept of combination method using various kinds of oil-degrading microbial of hydrocarbon intake mechanism and it is the applicable product to product oil, lubricant, and crude oil contaminated area.



• Electrokinetic Remediation Technology

It is the purification technology that purifies in way of electrodynamics the contaminated soil by heavy metal and it is possible to purify at clayey soil, moreover, there is no generation of waste. It is possible to reduce 30% of the treatment cost compare to other heavy metal removal technology.



• Thermal Desorption Technology

It is the purification technology which purifies the contaminated soil by POPs substance such as agricultural pesticides, dioxin, etc.



○ Track Records

- Exportation of soil washing plant to Kuwait (Sept 2012)
- Joint venture agreement with NCC Company in Kuwait (July 2012)
- Contaminated soil purification in Area 7 of restoring Yeongsan River (Jan 2012)
- Acquisition of bidding eligibility of soil contamination service from Kuwait Oil Corporation (Oct 2011)
- Contaminated soil purification of construction o residential land development in area of Byeollae, Namyangju (6,000 Tons) (June 2011)
- Contaminated soil purification of urban development business in Magok area (6,000 Tons) (Feb 2011)
- Contaminated soil purification of Suwon SK SKY VIEW worksite (Area 2) (19,000 Tons) (June 2010)
- Contaminated soil purification (30,000 Tons) of SK Logistics Center in Yonghyeon-dong, Incheon (Apr 2008)

○ Patents/Certificates

- Green technology certification (Dec 2010)
- ISO 9001, 14001 (Aug 2010)
- Overseas construction (Aug 2009)
- Environmental new technology certification of heavy metal contaminated soil treatment (Oct 2008)
- Type approval certificate (July 2008)
- Environmental new technology certification of oil contaminated soil treatment (Feb 2007)
- Promising Small & Medium Enterprise certification (Sept 2005)
- Excellent procurement product certification (Sept 2005)
- Excellent Environmental Industry certification (July 2005)
- Domestic New Technology certification (Mar 2005)
- 18 patent registrations including soil purification method using dynamic electricity

CREATE NEW TECHNOLOGY KOREA



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○ Overview

Waste plastic from broken home appliance is reused as a part of home appliance through recycling process and such a process is reducing the cost of environmental cost and saving more than 10 thousand Tons of resources, and ultimately, it is showing the CO₂ emission reduction effect. CREATE NEW TECHNOLOGY KOREA is established at 2005 and we are dealing with warehousing waste plastic and producing and supplying the material of recycled eco resin, lastly, we are managing entire processes according to environmental laws according to our own facility and technology.



Selection process



Reduction and gravity separation process



Extrusion process

○ Technology/Services

• CNTK - P101 (PP pellet product)

By selecting plastic in condition of combined scrap and remove the foreign substance that could be mixed through reduction process and gravity separation by filtering other foreign substance at the 2 stages of extrusion process, and then the product is produced. It is recycled using 100% PCM and its balance between rigidity and impact strength is excellent, moreover, its flow properties are excellent as well so it is suitable as a material of electrical or electronic component. The color is generally dark gray line.



• CNTK - A204 (ABS pellet product)

Its manufacturing process is identical with CNTK-P101 and it is the product that uses 100% PCM to recycle. Processability, impact resistance, gloss of the product is excellent so it is suitable as a material of electrical or electronic component. The color is generally dark gray line.



• CNTK - A206 (ABS pellet product)

Its manufacturing process is identical with CNTK-P101 and it is the product that uses 100% PCM to recycle. Processability, impact resistance of the product is excellent so it is suitable as a material of electrical or electronic component. Its coloring is better than A204 so it is also used as construction material. The color is generally light gray line.



○ Track Records

- Present supplier of P101 recycled pellet to Samsung Electronics Co., Ltd (150 tons per month)
- Present supplier of A204 recycled pellet to Samsung Electronics Co., Ltd (80 tons per month)
- Present supplier of P101 recycled pellet to LG Electronics Co., Ltd (100 tons per month)
- Present supplier of A204 recycled pellet to LG Electronics Co., Ltd (30 tons per month)
- Present supplier of A206 recycled pellet to LG Electronics Co., Ltd (100 tons per month)

○ Patents/Certificates

- Eco-label certification (#9772, "Valid resource recycling, hazardous material reduction," June 27 2012)
- Venture company certification (Apr 23 2012)
- INNO-BIZ certification (Jan 25 2012)
- Eco-label certification (#9114, "Valid resource recycling, hazardous material reduction," Nov 22 2011)
- Eco-label certification (#9080, "Valid resource recycling, hazardous material reduction," Nov 10 2011)
- ISO 9001:2008/KS Q ISO 9001:2009 (June 15 2005)
- ISO 14001:2004/KS I ISO 14001:2009 (June 15 2005)



DADA CORPORATION



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Website www.dadacorp.co.kr

○ Overview

DADA CORPORATION is the faucet professional manufacturer company that has been established in 1965 for the 1st time in Korea and is continuing the clear craftsmanship. We are the company that produces entire products related with faucet that are used in public toilet and bath and bathroom, kitchen, and veranda at home, moreover, we are currently delivering to construction material distributors and domestic major construction companies such as Samsung, Daewoo, LH Construction, Lotte, Hanssem, and etc, furthermore, we are dynamically exporting to China, Japan, Bangladesh, Vietnam, and etc.

Especially, according to building the system of automation in entire process of production, it is possible to produce stably and quickly, moreover, its various and neat design has strong competitiveness even in the world market. Especially, we are holding the most environmental mark (175) in domestic to perform a role of leading company in the area of eco-friendly industry area. We hold the annual sales of 30 billion KRW with 150 employees and the excellent financial structure is the strong point of our company.



2011 Dhaka Bangladesh Trade Fair



2010 Danang Vietnam Fair



2007 Beijing China Fair

○ Technology/Services

• Automated polishing technology

The key point of fine faucet depends on how uniformly and neatly the surface process has been treated and sometimes, the surface is not smooth according to the hand of operator. Dada hold its own production technology of automated grinder and has the ability to produce the custom grinding machine, lastly, we are producing the faucet with neat and well-balanced surface through grinding process.



• Lead free process technology

The main material of faucet, 'Brass', includes lead, iron, nickel, tin, as well as copper and zinc. However, lead is the harmful heavy metal and lead component which is dissolved in water could affect adversely to human body. To redeem the problem, the lead free facility has been installed inside of plating production facility and lead component is completely exuded, lastly, we are trying our best to correspond with international environmental standard.



• Faucet for blocking hot water (Energy saving type faucet)

At apartment or large commercial facility, hot water is being supplied even during the summer and causes the water waste according to unnecessary use of hot water, moreover, is causing big waste nationally. Dada has currently developed faucet that blocks the hot water with valve that blocks the hot water on the body to prevent the waste, moreover, we hold numerous knowhow in development of water saving and eco-friendly faucet.



○ Track Records

- LIG Construction Sacheon, Gyeongnam site. 902 households (Oct 2010)
- LH Construction Daejeon Southwest site. 1,216 households (Oct 2010)
- Samsung C&T Corporation Mia Zone 6, 12. 2,577 households (Sept 2010)
- Samsung C&T Corporation Gireum Zone 8. 1,617 households (May 2010)
- Doosan Engineering & Construction Jangseong, Pohang site. 1,214 households (May 2010)
- LH Construction Nueup, Osan site. 1,179 households (Apr 2010)
- Exportation of 900,000 USD per year in Japan
- Exportation of 250,000 USD per year in Bangladesh
- Exportation of 400,000 USD per year in Vietnam

○ Patents/Certificates

- KC (Health and safety) Certification (May 2012)
- Environmental mark Certification (Aug 2001)
- Japanese Industrial Standard 'JIS' Certification (Jan 2005)
- ISO 9000 Certification (July 1996)
- KS Certification (July 1980)
- 2 patents, 13 new devices

DAEWOONG CO., LTD.



○ Contact Information

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○ Overview

Daewoong Co., Ltd. has been established in 1995 under a purpose of developing eco-friendly plastic that recycles the resource of waste part of automobile and we are the leading company in manufacturing eco-friendly material based on the best technology, moreover, are responding to domestic and international environmental regulatory change, and lastly, are leading the way to recycle the valuable resource of future. As of 2011, the size of annual sales is 18 billion KRW. We hold our factory size of 2,500 Pyeong (8264m²) with its floor space of 1,200 Pyeong (3967m²) and there are 30 permanent employees. We are the main supplier of recycling resin composite material to the company that molds automotive plastic part and that molds resin for electronics and daily use.



Recycled composite resin



PP composite material for wheel guard



PP composite material for cowl top cover

○ Technology/Services

• Recycled PP composite material for automotive door trim

It is the composite resin material that is created using plastic waste, moreover, filler and other materials have been used to perform the various functions such as scratch resistance, light weight, anti-bacterial, heat resistance, high rigidity, etc, moreover, it is being applied as a material of automotive door trim and etc, according to excellent workability and high dimensional stability. Lastly, we are developing the color which is the most important characteristics in automotive interior to deliver the product with excellent quality.



• Recycled PP composite material for automotive bumper

It is the eco-friendly resin composite material with the characteristics of excellent impact resistance and environment resistance and it has undergone the validation and reliability assessment from public certificate authority, moreover, it shows the excellent workability and dimensional stability on painted or non-painted automotive bumper, and lastly, we are delivering the product with excellent quality through strict quality control.



• Recycled PP composite material for automotive undercover

It is a material for automotive bumper back beam and uses recycled GMT which is the composite material of thermoplastic resin. It also has the characteristics of heat-resistance, high rigidity, and moldability and being applied to undercover, lastly, we are delivering the product with excellent quality through strict quality control.



○ Track Records

- Material development of high hardness cowl part using automobile waste PP material (2011)
- Development of eco-friendly productize of painted bumper cover waste in area of TPO (2011)
- Micro melting dispersion technology development of film of paint of automotive bumper waste (2010)
- Development of eco-friendly PP material of weight lightening/hardening for automotive in/exterior (2010)
- Registration of Hyundai KIA Motors MS SPEC, registration of GM Daewoong EDS SPEC (2008)
- Exportation of 4 billion KRD (2008)

○ Patents/Certificates

- UL incombustible material certification (E349188) (2012)
- Green technology certification (GT-10-000460) (2010)
- Patent registration of polypropylene composite and other product (2010)
- Institute of technology certification (#2009210433) (2009)
- Venture company certification (#200902099) (2009)
- TS16949 certification (2008)
- ISO9001, ISO14001 Environmental management system certification (2008)

DONGWHA ENTERPRISE



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○ Overview

Dongwha Enterprise is the leader in domestic timber industry and after the establishment in 1948, we are producing PB, MDF, etc, which lead the market and lastly, have developed to the best professional enterprise in wood based panel in domestic.

Board business_ Wood panel

We are the professional timber enterprise that produce wood based panel using hardwood and recycled timber, moreover, produce LPM which are various resins, flooring material, eco-friendly surface material which are used as timber adhesive for furniture and interior purpose. There are products which lead Dongwha Enterprise to the one of the finest which are MDF that is created by molding the wood fiber, eco-friendly product, PB, that uses recycled timber, and MFB which the surface material is attached with PB and MDF.

Chemical business_Chemical material

We are currently challenging to various business areas based on our best technology which leads the industry. For instance, we are challenging to various businesses such as TEGO film which is used on plywood for concrete mould for the 1st in domestic, various eco-friendly LPM film, resin for construction material, and other thermosetting resins, moreover, we are accomplishing outstanding result in area of board resin by developing Super E0 PB and MDF resin which the formaldehyde is minimized.



Domestic MDF factory



Domestic chemical factory



MDF Vietnam factory

○ Technology/Services

• MDF (Medium density fiberboard)

It is the product that is created by compressing into a board shape after applying eco-friendly adhesive and disassembling the wood into wood fiber. Its processability is way better than PB so it is used on the front side of furniture or premium construction material.

* Purpose: Furniture / Interior material

• MFB (Melamine Faced Board)

MFB is the processed board of eco-friendly method that adhere the LPM sheet on PB and MDF by applying heat and pressure. Various standards and patterns are possible to product according to the domestic's largest facility.

* Purpose: Furniture / Interior / Construction interior material

• Green chemistry resin industry

For chemical resin industry, we are supplying resin for board, impregnation resin, heat insulating material resin for construction material, filter resin for automobile and other related products according to self-development based on the technical knowhow of timber thermosetting resin.

* Purpose: Resin for timber, insulation resin, filter resin for automobile, etc



○ Track Records

- Completion of VRG Dongwah MDF factory (Aug 2012)
- Joint establishment of VRG Dongwah MDF with VRG Group Vietnam _ Largest production base of MDF at Asia-Pacific area (Aug 2008)
- Acquisition of Guthrie MDF Malaysia (Dongwha MDF(M) Sdn. Bhd.) (May 2007)
- Acquisition of Merbok MDF, resin factory Malaysia (Dongwha FibreBoard Sdn. Bhd/ Dongwha Chemical(M) Sdn. Bhd.) (Nov 2006)
- Acquisition of Rayonier MDF New Zealand (Dongwha Patinna NZ Ltd.) (Aug 2005)
- Acquisition of Golden Hope MDF Malaysia (Dongwha FibreBoard Sdn. Bhd) (July 2003)
- Completion of LPM / MFB factory (Feb 1992)
- Completion of resin, wax plant_60 thousand Ton per year (Nov 1991)

○ Patents/Certificates

Board business_ Wood panel

- Acquisition of eco-label certification of PB, MDF, MFB (EL.723) (#10008, 10009, 10010, Sept 2012)
- Certification of PB best recycled product (GR F 2003) (#2011-26, June 2011)
- Acquisition of KS certification of PB (KS F 3104) (#10-131, Mar 2010)

Chemical business_Chemical material

- Patent application of LPM sheet for painted (Application #10-2011-42921, May 2011)
- Patent application of paint resistance LPM sheet (Application #10-2010-0085997, Sept 2010)
- Patent application of eco-friendly zero board (Application #10-2009-0119143, Mar 2010)
- Board resin type hardener (Application #10-0984800, Dec 2008)



EXCION



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○ Overview

EXCION Co., Ltd. is the green environmental company for low-carbon discharge and is established in December 2004 under a purpose of reduction of exhaust gas and low-pollution engine development, etc. We hold the annual sales of 40 billion KRW in 2011 and 95% of sales is from overseas exportation which makes us outstanding company of exportation, moreover, are awarded the 30 million USD Tower of Export in 2011. EXCION has established the affiliated laboratory for continuous technology development and has secured the specialized engine control technology.

This technology has acquired recognition in overseas markets so we are expanding to the wide scope of businesses of automobile, plant, hotel self-generation system, etc, moreover, we are selected as promising small and medium enterprise in Gyeonggi-do in 2012. EXCION will not satisfy in the current.

Event but will continuously research and invest and are looking forward to open new R&D laboratory and 2nd factory in 2012.



Yongin Respia CO-GEN Project



GM Venezuela CNG Bi-System



Mitsubishi LPG System development

○ Technology/Services

• Gasoline CNG/LPG Bi-Fuel System

We are supplying Bi-Fuel System Pack to make the automobile which can run by selecting CNG gas or gasoline by adding the system to general gasoline automobile. This technology is based on the EXCION's exclusive ECU (Electronic Control Unit) technology and it fits to the characteristics of the automobile to achieve the optimized result according to realization of high performance.

• Co-Generation System

We are securing the technology that generates the 2nd energy through generated secondary heat and chill by using and applying various low-pollution fuels such as CNG/LNG/Methane Gas, etc, and it is possible to operate and manage the equipment effectively through Magellan- II, GEMMA- III, CHP-UI which is the core equipment of Engine Control Unit which is created from exclusive technology of EXCION.

• Diesel CNG/LPG Dedicate System

We have developed and are supplying the system that remodels the engine that uses the CNG/LNG which are the eco-friendly fuel from the engine that combust the diesel, moreover, it is possible to composite the optimized performance through DynoRoad 204/8 SL, Horiba MEXA-9000 from the research laboratory.



○ Track Records

- Supply of CO-GEN System, Maetan Yongin Respia (Oct 2012)
- Supply of CNG Bi-Fuel conversion Kit of GM Thailand (Nov 2010 / 10,000 per year)
- Supply of CNG Bi-Fuel conversion Kit of GM Venezuela (Aug 2010 / 40,000 per year)
- Development of Toyota Prius LPG Bi-Fuel System, Japan (Mar 2008)
- Development of Mitsubishi Canter LPG LPLI System, Japan (Aug 2007)
- Low pollution and greening business of diesel driven automobile under supervision of Ministry of Environment (2005~Present)

○ Patents/Certificates

Certification

- Certification of part/material professional company (May 2011)
- ISO/TS16949 Quality certification system (July 2009)
- ISO9001/14001 Quality certification system (July 2008)

Patent

- Gasoline alternative fuel injection control method of engine (Registered in May 2012) and other 3 patents
- Automatic engine control equipment for idling restriction (Registered in Feb 2012)
- Method of controlling boost pressure fuel switchable engine and its equipment (Registered in Jan 2011)

LG HAUSYS, LTD.



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○ Overview

LG Hausys, Ltd. is Korea's largest company in both building & decorative materials and highly functional materials & components which has been split from LG Chemicals in April 2009. Since 1958 we have provided differentiated products and services such as Vinyl Floorings, Korea's 1st plastic windows, 'High-Sash', high-gloss sheets which holds No.1 global market share, an acrylic solid surface 'HI-MACS', and so on.

Lately, LG Hausys is putting value and providing on 'GREEN' concept which is eco-friendly and energy saving material such as auto-ventilation window and zea floor/ wallcovering which are created with 100% natural material by using corn for the first in worldwide industry.

With these efforts LG Hausys expects to be the 'GREEN' leading company in Korea by continuously expanding the major promoting businesses of high thermal insulation window, functional glass, functional adhesive film, high efficiency vacuum insulation panel, eco-friendly wood polymer composite, etc.



zea floor and zea wallcovering



Eco-Friendly wood polymer composite 'WOOZEN'



Ulsan Low-E glass factory



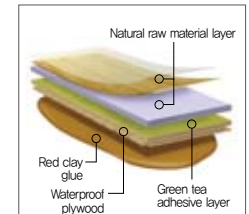
Tianjin factory in China

○ Technology/Services

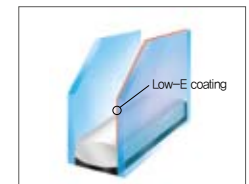
• **Eco-friendly wood polymer composite 'WOOZEN':** WOOZEN is the high performance co-extruded product which combined with 70% of wooden fiber, eco-friendly olefin P.P. and P.E. resin. And it also brings natural look and texture by LG's unique technology. The wooden fiber is produced from thinning-out tree and cut tree so there is an effect of reducing the amount of deforestation, moreover, it is the resource conservation product according to possible recycling of wood fiber and resin which are used in manufacturing process. It has 10 times stronger resistance in discoloration and dimensional stability than treated wood without using any heavy metal preservatives, lastly, it is also possible to use as external material such as deck, siding, louver, fence, etc.



• **zea floors:** 'zea floors' is the world's most innovative wood flooring layer which combined with many natural resources such as corn, natural stone, wood flour, red clay, citric acid and so on. Material itself is free of TVOC and formaldehyde which helps prevent environmental diseases such as atopic dermatitis and rhinitis. And it also helps to minimize bacteria and germs. It is very strong in discoloration, scratch, indentation and deformation which shows 30 times stronger durability than laminate floors or hardwood floor. Lastly, the loess and inorganic mineral material are used as adhesive so even the construction is eco-friendly as well.



• **Low-E glass:** Low-E glass is the next generation high-efficient glass which can reduce approximately 42% of heating energy than general pair glass in winter according to its high thermal insulation and maximizes the inflow of solar energy, moreover, it has high visible light transmissivity by coating with the optimized metal film. It prevents the far-infrared radiant energy loss which occurred indoor by coating the AG layer of 10nm thickness and it is effective in thermal energy reduction in winter according to receiving lots of solar energy from indoor.



○ Track Records

- Joongang Heights, Opo, Gwangju 1,200 households (Scheduled in 2014)
- Hillstate (Hyundai Construction) and Weve (Doosan Construction), Haeundae, Busan (Scheduled in 2013)
- National Museum of Contemporary Art Gwacheon/Seoul (2012)
- Bicycle road Geochang, Gyeongsangnam-do (2011~2012)

○ Patents/Certificates

ISO 14001: Ulsan complex (Dec 1996), Cheongju complex (Nov1999) / KOSHA 18001: Ulsan complex (Nov 2000), Cheongju complex (Dec 2009) Green company: Ulsan complex (Dec 1995), Cheongju complex (Dec 1995)

[WOOZEN] Patent of dually extruded wood polymer composite that includes wood fiber in the center (July 2011) and 3 others, KS certification (Sept 2012), FSC CoC (Chain of Custody) certification (Sept 2012), Eco-label certification on 3 kinds of WOOZEN deck (May 2011) and more

[zea floor] New product certification of PLA system sheet layer laminated flooring material (Adhesive tile, nonadhesive tile, homogeneous sheet, wood composite floor type) (May 2012), Eco-label certification (Jan 2010, Sept 2011) and more

[Low-E glass] High-technology authentication certification of manufacturing technology of possible post-reinforcement of Low-E glass (2012) and more



NEOMARU CO., LTD.



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○ Overview

NEOMARU Co., Ltd. which is the parent company PLATEL Co., Ltd. has established the research laboratory in December 2005 to enter into LED lighting market and has built the product development and manufacturing-based facility of LED lighting area. In January 10 2011, the research laboratory has established as independent corporation of NEOMARU Co., Ltd. moreover, we are proceeding with optical communication business as well as LED lighting area. We hold 2.7 billion KRW of sales, 1.2 billion KRW of capital, and 30 permanent employees. NEOMARU holds the products of metal package for light emitting diode which is registered as a patent, LED Bulb Lamp, LED Panel Lamp, etc have acquired the certification of high-efficiency equipment. NEOMARU holds the technology and equipment that can directly develop and produce LED lighting which can replace the previous fluorescent lamp and incandescent lamp.



Russia business worksite



The hull of a warship construction worksite

○ Technology/Services

• LED TUBE LAMP

- Slimmer design than previous fluorescent light
- Reinforcement of bending strength and deflection of luminaire according to base cross section of semicircle shape
- Reduction of cross section of base and extent of cover part is maximized to improve the occurrence of side color spread
- It holds the light distribution characteristic with previous fluorescent light optically so it provides the identical environment with previous fluorescent light.



• LED BULB LAMP

- Substitution-type incandescent light, Edison screw-type socket mount method
- Base interference is minimized to a direction of light distribution by expanding the extent of diffusion cover
- Various luminance and luminance efficiency are improved using scattered reflection of light by applying diffusion cover
- Weight lightening by composing sidepiece of base and PBT material and function of base of heat radiation is improved by placing the pin shape inside



• CLOSURE FOR MICRODUCT

- Microduct branching, possible to protect
- Use in case of branching microduct manhole on the manhole and pole
- Realization of middle branch and multi branch
- IP68 class



○ Track Records

- Gyeonggi H Company, LED surface lighting 49W, 36W delivery (June 2012)
- Japan A Company, flood light 100W, LED fluorescent light 22W order (Apr 2012)
- Australia A Company, LED factory light 150W, 200W order (Jan 2012)
- Japan D Company, LED Sensor light 13W order (Jan 2012)
- Russia L Company, local joint venture and product supply contract (1.5 million USD) (June 2011)

○ Patents/Certificates

- Acquisition of down-light facility direct production certification (Aug 2012)
- Safety and functional requirement KS certification acquisition of flush type and fixed type LED lighting equipment (July 2012)
- Selected as promising export firm (June 2012)
- Patent of light emitting diode package and its manufacturing method (June 2012)
- US patent of light emitting diode package and its manufacturing method (May 2012)
- Acquisition of high efficiency certification of LED lamp embedded with converter (Feb 2012)
- Acquisition POS lamp converter UL certification (Nov 2011)
- Patent of built-in lens type LED module (Sept 2011)
- Patent of sensor module assembly and target object detection equipment for automobile using sensor module assembly (Sept 2009)



RE-NEW SYSTEM CO., LTD.



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○ Overview

The most advanced waterproof new material company, Re-New System Co., Ltd. is the global and green new material company that is trying the best to solve the waterproof problem of domestic and international construction structure. We have realized the complete waterproof of water leaking structure of KT Communication, Korea Electric Power, underpass, subway, culvert, tunnel, underground parking and etc, that entire waterproof companies gave up and we also have applied our technology to Big Deal which is located in Boston USA, Bart in San Francisco, and costal expressway in Marina Singapore, and are spreading the global marketing globally. We hold our goal as perfect waterproof in Korea as well as global market with our new material and technology through continuous technology development and innovation and promise to value the asset and value of people.



Worksite of Bart in San Francisco USA



Worksite of Marina Bay Singapore



Worksite of Incheon International Airport

○ Technology/Services

• Poly-as method (Turbo-seal GT + Turbo sheet)

We build the complete waterproof system in waterproofing method of painting turbo seal which is the adhesive and flexible type material on the base surface and attaching the turbo sheet to form dual composite waterproofing layer. Turbo seal is the elastic gel type waterproof material that possesses the characteristics of adhesion and flexibility and it is created after combining special adhesive, synthetic polymer resin, and asphalt after creating the rubber waste as a liquid. Turbo seal holds lower than 0.002% of volatile organic compound and treated as eco-friendly product, moreover, its adhesiveness is excellent with heterogeneous material as well as concrete and its execution of works is easy.



• Green roofing system (Eco seal + Eco root barrier sheet)

It is the low management type green roofing system that copper root barrier sheet which holds excellent root penetration resistance combined with eco seal which is the adhesive and flexible type of waterproof material. It allows the complete green roofing system without a punching phenomenon according to planting and it also solves the structural instability according to a leakage and lengthens the durability of structure, moreover, innovatively reduces the post maintenance cost.



Eco root barrier sheet



Eco seal

• Turbo sheet GTR

It is the self adhesion sheet that has integrated eco-friendly high adhesive reclaimed rubber with membrane sheet. According to adhesive type of attachment of adhesive and flexible material, interfacial fallen does not occur in case of occurrence of a crack so its responsiveness towards a crack is excellent. It also has the strong point of shortening the period of execution of work because it is the method that sticks directly on the surface of concrete.



○ Track Records

- Astana Kazakhstan, waterproof construction of pumping station of City Hall (2012)
- Waterproof construction of NTT cable tunnel Japan (Dec 2010)
- Marina Bay Expressway Singapore, waterproofing construction of 482 and 486 section (May 2010)
- Bart subway San Francisco USA, waterproof construction of extended section (34.58Km section) (Jan 2009)
- Big Dig Boston USA, waterproof construction of underpass (June 2007)
- Incheon International Airport, step 2 construction of boarding tower B,C and mooring area facility construction (2A-6 Section) waterproof construction (June 2005)

○ Patents/Certificates

- Eco-label certification (Korea Environmental Industry & Technology Institute) (Jan 25 2012)
- Green technology certification (Ministry of Education, Science and Technology) (Apr 28 2011)
- NET new technology certification (New technology #560 of Ministry of Land, Transport and Maritime Affairs) (Oct 13 2008)
- ISO 14001 (Dec 2006)
- NET new technology certification (New technology #376 of Ministry of Construction and Transportation) (Apr 12 2006)
- ISO 9001 (June 2003)

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Korea Environmental Industry & Technology Institute (KEITI)



[MISSION]

The mission of the KEITI is to foster research and development of environmental technology, to nurture environmental industries, and to promote sustainable consumption and production in line with the national vision of the low carbon green growth.

[LEGAL BASE]

The KEITI is a public organization founded in 2009 based on the 'Act on the Promotion of Environmental Technology and Environmental Industry'.

[MAJOR SERVICES]

Research and Development of Environmental Technologies

- Eco-Innovation R&D Program to develop new environmental technologies by investing 2 billion USD for 2011~2020
- Assistance to commercialization of promising environmental technologies
- Environmental technology verification and certification

Nurturing Environmental Industries

- Prime loan service to environmental SMEs with 140 million USD per year
- Financial assistance to commercializing environmental technologies
- Training specialists for environmental industries and technologies
- Financial and technical assistance for foreign environmental market access

Promoting Sustainable Consumption and Production

- National Ecolabelling Program and Carbon Footprint Labelling Program
- Monitoring and guidance to public green procurement
- Administration of Green Credit Card system and other promotional activities



[INTERNATIONAL COOPERATION PROGRAM]

Environmental Management Master Plan for Developing Countries

- Providing financial and technical support to developing countries for the preparation of a national and/or local plan of their own environmental policy and environmental infrastructure investment
- Maximum of 500,000 USD per project for 1 year

International Joint Environmental Technology Development

- Providing financial and technical support for joint R&D of environmental technologies which best fit partner countries' local conditions
- Maximum of 500,000 USD per project for 2 years

Feasibility Study for Overseas Environment Projects

- Providing financial support for technical and economic feasibility study for certain environmental projects in partner countries
- Maximum of 100,000 USD per project

Global Green Business Partnership Forum

- International business forum for exchanging a variety of knowledge and information on environmental industries, technologies and projects

Overseas Environmental Cooperation Center

- KEITI's foreign branches to promote environmental industry and technology cooperation between Korea and partner countries

<KEITI's Overseas Center>

Korea-China Center	Korea-Vietnam Center	Korea-Indonesia Center
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Korea Export-Import Bank (KOEXIM)



[OVERVIEW]

The KOEXIM is an official export credit agency providing comprehensive export credit and business guarantee programs to support Korean enterprises in conducting overseas business. Notably, the KOEXIM is responsible for the Economic Development Cooperation Fund (EDCF), a sovereignty loan program to aid developing countries' economic development.

[EDCF LOAN SERVICES]

The EDCF provides several types of loan programs to meet developing countries' diverse needs. Of these loan programs, the Development Project Loans and Equipment Loans for infrastructure building account for the largest portion to date.

The interest rate and repayment period including the grace period can be adjusted but not in excess of the concessionality levels of the standard EDCF terms and conditions.

<EDCF Loan Condition>

Loan Amount	> Up to total project cost (excluding general management expenses, taxes and utility costs, land acquisition costs, compensation costs, and other indirect costs) > The coverage ceiling ratio will be 85% of the total project cost for untied loans provided to countries other than Least Developed Countries
Interest Rate	> 0.01~2.5% per annum (Interest will not be charged for consulting services provided by Korean firms)
Repayment Period	> Up to 40 years (including a grace period of up to 15 years)
Repayment Frequency	> Semi-annual



<Source: Korea Exim Bank, Naver>

WEBSITE : www.koreaexim.go.kr

Korea International Cooperation Agency (KOICA)



[OVERVIEW]

The KOICA was founded as a government agency in 1991 to maximize the effectiveness of Korea's official development assistance to developing countries by implementing the government's grant aid and technical cooperation programs. As of 2011, the KOICA has secured 480 million USD of annual grant aid budget and it has 44 overseas offices around the world.

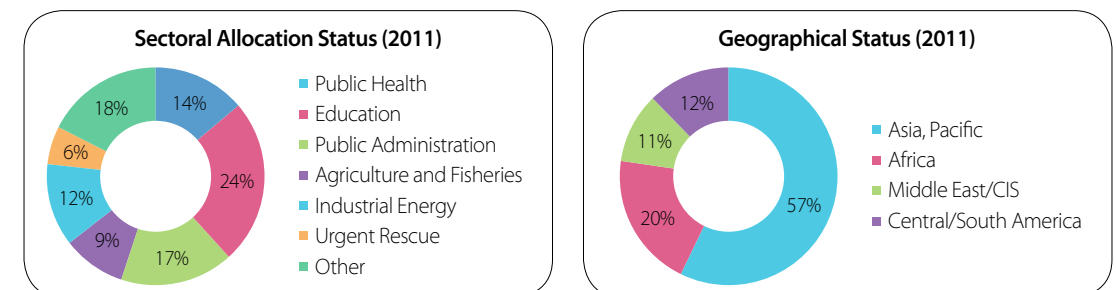
[GRANT AID]

The KOICA Act was enacted in 1991 and it provides a legal platform for KOICA's grant aid programs, human resource management, and ODA policy implementation. According to the Act, KOICA's grant aid programs include the following: (a) invitation of trainees; (b) dispatch of experts and volunteers; (c) research for development studies; (d) emergency and distress relief activities; and (e) provision of commodities, capital, and facilities.

Also prescribed in the Act are programs to support civil society organizations, cooperation with multilateral organizations, research and policy planning, as well as projects entrusted by the Korean government.

KOICA shares Korea's economic development experience with developing countries in diverse sectors : Education, Health, Governance, Agriculture Forestry and Fisheries, ICT, Industry & Energy, Disaster Relief, MDGs, Environment, Climate Change, etc.

<Sectoral & Geographical Status>



<Source: KOICA>

WEBSITE : www.koica.go.kr

Global Green Growth Institute (GGGI)



MEMO

[MISSION]

The GGGI is dedicated to pioneering and diffusing a new model of economic growth, known as 'low carbon green growth' which simultaneously targets key aspects of economic performance, such as poverty reduction, job creation and social inclusion, and those of environmental sustainability, such as mitigation of climate change and biodiversity loss and security of access to clean energy and water.

[ORGANIZATIONAL STRUCTURE]

As its diverse Board of Directors reflects, GGGI is a new kind of international organization interdisciplinary, multi-stakeholder and driven by emerging and developing countries. It has been established by several forward-thinking governments to maximize the opportunity for "bottom up" (i.e., Country and business-led) progress on climate change and other environmental challenges within core economic policy and business strategies.

[MAIN ACTIVITIES]

Country Green Growth Planning

- GGGI's country work consists of the Green Growth Plan (GGP) analysis and design, domestic capacity building, and public-private partnership to support plan implementation.

Public-Private Green Cooperation

- GGGI fosters public-private cooperation at two levels: (1) Links companies to developing country governments to help implement green growth plans; and, (2) Builds cooperation within and between industries, and links to relevant intergovernmental processes.

Research on Green Growth

- GGGI's Research program promotes the development of a new green growth paradigm by conducting research into various aspects of green growth theory and practice. The Institute's research portfolio is under active development internally and in cooperation with other organizations.



<Source: Cheongwadae, Asia Today>

WEBSITE : www.gggi.org

MEMO

MEMO



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