UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

SUSTAINABLE DEVELOPMENT GOALS

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

ITPO
INVESTMENT AND TECHNOLOGY PROMOTION OFFICE
TOKYO, JAPAN

STePP

Sustainable Technology Promotion Platform

TECHNOLOGIES FROM JAPAN

Catalogue as of December 2023

UNIDO ITPO Tokyo's Sustainable Technology Promotion Platform (STePP) shares information on Japanese technologies fostering inclusive and sustainable industrial development.

Concept

UNIDO ITPO Tokyo promotes high-quality and effective Japanese technologies to accelerate their transfer to developing and emerging countries.

Technologies registered on STePP address a wide range of challenges faced by contemporary societies working towards inclusive and sustainable industrial development. Japanese companies listed on STePP are keen to apply their technologies in developing and emerging countries.

STePP envisions itself as a platform where Japanese technology providers and governments/companies in developing and emerging countries can connect and collaborate to achieve efficient and sustainable technology transfer initiatives.

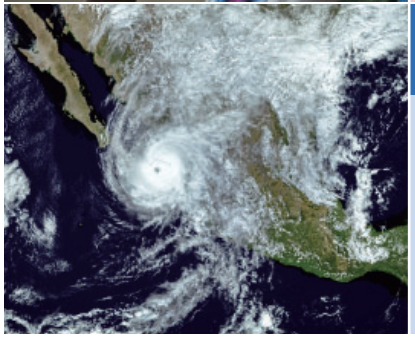
Organizations in developing and emerging countries, including government entities, private enterprises, institutions, and NGOs, are encouraged to contact the technology providers listed on STePP through the designated contact persons.

Criteria for Registration

The UNIDO STePP Evaluation Committee assesses technologies for inclusion on STePP using the following criteria:Applicability in Developing and Emerging Countries

- Technical Maturity
- Competitive Advantage
- Technological sustainability
- Applicability in developing and emerging countries
- Organizational aspect

CATEGORIES OF TECHNOLOGIES



INVESTMENT AND TECHNOLOGY PROMOTION OFFICE
TOKYO, JAPAN

UNIDO ITPO Tokyo

UNIDO ITPO Tokyo was established in March 1981 and is one of 9 offices worldwide belonging to UNIDO's ITPO Network. UNIDO ITPO Tokyo's mission is to help developing countries and economies in transition in their efforts to achieve inclusive and sustainable economic development by promoting foreign direct investment and technology transfer from Japan through various promotion activities in Japan and also in recipient countries using UNIDO's private and public sector networks.

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ENERGY TECHNOLOGIES

Bamboo Chemical Laboratory, Ltd.

RENEWABLE ENERGY

Small Hydropower Generator

Bamboo Chemical's three types of small-scale hydroelectric power generators (Pelton, screw, undershot) can be applied to suit the on-site conditions such as water flow and head. Power generation output is 10kW or less. Compared to large-scale types, the initial cost and operation costs are relatively low. In general, they are appropriate for installation in small and medium-sized irrigation canals.

In total, 23 of the three types of hydropower units have been installed. In developing countries, one Pelton type unit has been operating in El Salvador, three screw-type units in Myanmar, and one screw-type unit in the Philippines.

wwwa.pikara.ne.jp/bamboo906/
Mr. Masayuki TSURUHA m-tsuruha@mb.pikara.ne.jp

BGCT JAPAN K.K. / Creative Co., Ltd.

RENEWABLE ENERGY (Environmental technologies: circular economy)

RPPWF™: Solid Recovered Fuel - Green Coal

RPPWF™ is a promising alternative fuel resource to coal and oil, produced entirely from waste materials. It is made from non-hazardous, non-recyclable paper, plastics/plants and wood waste, and other household and industrial waste. As RPPWF™ contains a lot of biomass, CO2 emissions can be reduced to almost zero. The combustion efficiency is also much higher than coal and oil.

Pilot production of RPPWF™ was successfully completed at the company's test plant.

www.bgct.jp
Mr. Michihiro KIYAMA info@bgct.jp

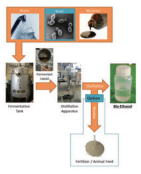
Biomaterial in Tokyo Co., Ltd.

RENEWABLE ENERGY

Ethanol Production Through Yeast Fermentation

This company's strains of yeast used in fermentation processes for converting sugars into ethanol have the advantages of being active at high sugar concentrations, have low levels of impurities, and are resistant to high temperatures. These strains can be used to produce safe ethanol, not only as an alternative fuel but also as a beverage additive.

Several studies have been carried out at various universities in Japan and the tolerance of these yeasts to high temperatures has been tested in collaboration with the Starch Technology Center at the Agency for the Assessment and Application of Technology in Indonesia.



https://biomt.co.jp/
Mr. Motoi YAMANAKA bits@biomt.co.jp

CR-POWER LLC

C-POWER Plant: Biofuel and Waste Management

RENEWABLE ENERGY (Environmental technologies: circular economy)

The C-POWER plant thermally decomposes organic carbon such as municipal solid waste and various biomass in a continuous process to produce fuel gas which can be utilized for electricity generation and chemical feedstock. It consists of a horizontal rotating cylindrical kiln (U-turn kiln) and a spiral cylinder interior horizontally rotating kiln (hybrid kiln) which enables high energy efficiency and low ash output. C-POWER plants can generally treat 20kg of raw materials per hour.

Starting with the development of the U-turn kiln in 2000, CR-POWER LLC proceeded to construct a pilot plant in 2004. The hybrid kiln was then invented in 2012 to enhance the gasification reaction. There are three commercial C-POWER plants operating in Japan.

www.cr-power.jp/eng/

Mr. Akimichi HATT hatta@cr-power.jp

ELIS CO., LTD.

Micro-hydroelectric Power Generation with Breast-shot Wheel Type

RENEWABLE ENERGY

Elis specializes in the clean and ecological generation of electricity. The company provides thermal energy in the form of gas to develop a new technology — mini hydroelectric power generation — based on solar panel electricity systems using recently developed power-generation technology.

The product has been used at various places in Japan. It can also be utilized in developing countries where the electric power infrastructure is unstable, facility maintenance by personnel is insufficient, or when the weather conditions fluctuate considerably.

https://waterweco.com/en/

Mr. Jun KUWAHARA kuwahara-jun@elis.tv

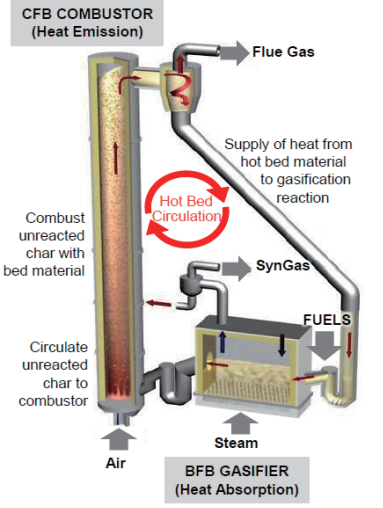
IHI Corporation

Biomass Gasification Plant: TIGAR® (Twin IHI GAsifieR)

RENEWABLE ENERGY (Energy technologies: utilization of unused resources)

TIGAR® gasifies biomass resources such as wood chip and pellets to produce syngas (synthetic gas: hydrogen, carbon monoxide and other usable gases) by a water-gas shift reaction. Syngas can be effectively utilized for various applications, such as chemical feedstocks and as fuel for power generation. By converting unexploited resources into high-value products, TIGAR® significantly reduces CO2 emissions and provides a new clean energy solution.

An installation and demonstration project has completed nearly 6,000 hours operation. IHI Corporation is ready to supply TIGAR® for commercial purposes.



www.ihi.co.jp/en/

Mr. Daichi NAKAHARA nakahara9599@ihi-g.com

JAG Seabell Co., Ltd.

RENEWABLE ENERGY

Micro Hydropower System (ultra-low head)

The STREAM is a run-of-river micro-hydropower generating system that can generate electricity especially in ultra-low head situations. Due to its compact size and ease of installation (typically two days of installation and commissioning in Japan), the system is especially suited for de-centralized power generation. Unlike conventional small hydropower schemes, a power channel, powerhouse, and penstock delivery are not necessary.

Since 2008, JAG Seabell has installed over 20 units in Japan and a pilot system in northern India.

https://www.seabell.jp/
Mr. Akira HIDESAWA hidesawa@jagseabell.jp

KITA MACHINERY Co.,Ltd.

RENEWABLE ENERGY

Engineering Design and Construction Method of Micro Hydropower System

RPPWF™ is a promising alternative fuel resource to coal and oil, produced entirely from waste materials. It is made from non-hazardous, non-recyclable paper, plastics/plants and wood waste, and other household and industrial waste. As RPPWF™ contains a lot of biomass, CO2 emissions can be reduced to almost zero. The combustion efficiency is also much higher than coal and oil.

Pilot production of RPPWF™ was successfully completed at the company's test plant.

www.kitakikai.co.jp
Ms. Tomoko KANAMURA kanamura@kitakikai.co.jp
Ms. Haruka UENISHI haruka.uenishi@kitakikai.co.jp

KOMAIHALTEC INC.

RENEWABLE ENERGY

KWT300: Mid-Size Wind Turbine (300kW)

The KWT300 is one of the very few high-spec, mid-size wind turbines available in the world. At an annual average wind speed of 6.5m/s, one wind turbine unit generates 600MWh/year, which is equivalent to the annual electricity use of 160 households. The KWT 300 is highly adaptable to the conditions in developing countries because of its flexibility (easy transportation, construction, and various applications) and safety conscious design (strong, stable, and resistant to extreme winds, lightning, and earthquakes).

A prototype has been operational in Japan since 2006. In 2010, one unit and technical training services were provided to the Wind Energy Technology Center in Mexico, established by UNDP and the Electric Research Institution of Mexico. In 2012 and 2013, three more units were installed in Japan.

www.komaihaltec.co.jp/english/
Renewable Energy Business Department renew@komaihaltec.co.jp

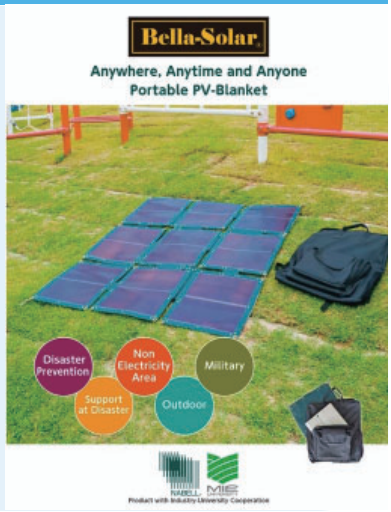
NABELL Corporation

RENEWABLE ENERGY

Portable Solar Power Charge and Storage System

The nanoGrid is a portable solar power system that can generate and store electric power from sunlight and AC power supplies. It features superior weather resistance and is ideal for areas without an electric power source.

A solar power system consisting of nanoGrid_2 (solar panel) and FSP type 1000 (lithium-ion battery) has been used by the Japanese Red Cross Society.



www.bellows.co.jp/en/

Mr. Toru WAKAMATSU nabell@bellows.co.jp

Nakayama Iron Works, LTD.

RENEWABLE ENERGY

Pico and Micro Hydropower Systems

The micro turbine is a mature technology. This system features advantages such as low manufacturing cost, a reliable and stable electric control panel system, and reduced power generation cost in comparison to conventional power generation systems.

Nakayama Iron Works implemented small community development projects in Japan in 2012 and 2014. A more affordable technology was established and successfully implemented in collaboration with the Indonesian Small Hydropower Association. The company has also been proceeding with a small hydropower project in India since 2012 with JAG Seabell Co., Ltd. through OEM to provide turbines for hydropower generation.

www.ncjpn.com/en/

Mr. Yoshinobu WATANABE overseas@nakayamairon.co.jp

Panasonic Corporation

RENEWABLE ENERGY

Rechargeable Solar LED Lantern

This rechargeable solar LED lantern is a multifunctional portable lantern that can be used as lighting, a battery charger, and as a solar panel. It comes with a 3.5W solar photovoltaic panel which can fully recharge the waterproof lantern in 6 hours in fine weather. The batteries can be recharged more than 1,500 times. The LED lifespan is more than 10 years.

Recharging of the lantern is performed by Panasonic's Ni-MH battery, which has grown in sales and distribution in Japan since 1990.

https://panasonic.net/sustainability/en/lantern/

Mr. Junichi NAKAMURA Nakamura.jyunici@jp.panasonic.com

SHINKO TECNO CO., LTD.

Plastic to Oil Converter (BP-2000N/5000N)

RENEWABLE ENERGY (Environmental technologies: circular economy)

This thermal decomposition plant, dubbed the “plastic to oil machine”, can manufacture liquid fuel, combustible gas, and carbonized products from plastic waste, E-waste, waste tires, waste toners, medical waste, and crude-oil derived products. The machine has the advantages of easy operation, low fuel consumption, and production of high quality heavy and light oils.

This technology has been adopted by more than 15 plants in Japan and was introduced to Vietnam in 2013, Saudi Arabia and Indonesia in 2014, and China in 2015.

https://shinko-eng1.webnode.jp/

Mr. Kentaro NAGASAWA info@shinko-mfg.co.jp

Sumino Co., LTD

RENEWABLE ENERGY

Micro Hydraulic Power Unit (Spiral Type Pico-Hydro Unit: PicoPica10, PicoPica500)

Spiral PicoPica Hydraulic Power Units are pico-hydro power generation devices with potential for use in non-electrified areas, featuring characteristics including low-head generation and dust resistance. PicoPica10 is a small 10W unit, and PicoPica500 is a 500W unit which generates enough energy for an average Japanese household.

Some 500 PicoPica10 units have been sold in Japan since 2011. PicoPica500 was launched in December 2017 and has already been installed in Nikko City, Tochigi Prefecture, Japan.

https://suminoseisakusho.jp/index.html

Mr. Masaya SUMINO s_info@suminoseisakusho.jp

Sumitomo Electric Industries, Ltd.

RENEWABLE ENERGY

Concentrator Photovoltaic (CPV) Power Generation System

The conversion efficiency of the Concentrator Photovoltaic (CPV) system developed by Sumitomo Electric Industries is twice that of a standard silicon solar module. This is achieved through tracking of the sun and the use of special lenses that direct sunlight into a high intensity.

The CPV system has been installed in Japan, Mexico, and Morocco.

https://sumitomoelectric.com/

Energy System Division cpv-contact@info.sei.co.jp

TBM Co., Ltd.

FOG-green Power Generation System

RENEWABLE ENERGY (Environmental technologies: waste treatment and management)

Wastewater derived from the daily preparation and consumption of foods contains a lot of fats, oils, and grease (FOG). TBM has two innovative techniques to reuse FOG: 1) Technique for the perfect separation and collection of FOG from wastewater, 2) Reforming of collected FOG to produce a new biofuel for electricity generators.

Since its opening in April 2017, the FOG-green power generation system power plant in Saitama prefecture generates 100KW x 24 hours x 365 days. Installation of the company's green power plants is also proceeding in various municipalities: Yokohama City, Tokorozawa City and Toshima-ku in Tokyo.

https://kankichikun.com/
Mr. Seigo HIGASHI info@kankichikun.com

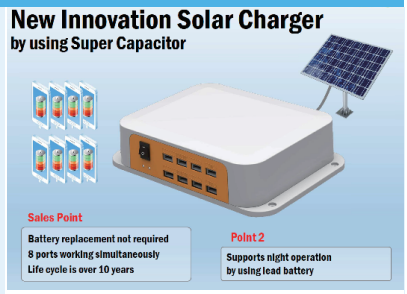
Tsujiplastics Co., Ltd.

Battery-free Innovative Solar Charger

RENEWABLE ENERGY (Environmental technologies: circular economy)

This device uses no batteries. It has a 10-year life expectancy and 8 USB ports for charging. Once the device is connected to a solar panel, it can equalize and optimize the electricity supply to charge mobiles, lights, etc. There are almost no maintenance costs since there is no cost for battery replacement.

This solar charger is a new product launched in August 2019. Thus, it has only been tested and introduced in Uganda up to now. However, other products which have a similar structure have been sold for more than 20 years in Japan.



https://www.tsuji-pla.co.jp/en/home-2/
Mr. Yoshikatsu TSUJI y.tsuji@tsuji-g.com

3ms Inc.

Energy-Saving Ceramic Sheets for Air Conditioners

ENERGY SAVING AND ENERGY STORAGE

Reidan-kun is a ceramic sheet to be placed in air conditioners. By improving heat exchange efficiency, it can reduce energy consumption by up to 26%.

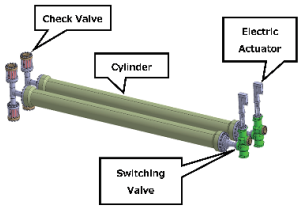
More than 13,000 sheets were installed in the first year of use from August 2016 in Japan.

https://3ms-inc.com/
Mr. Shinya WATABE s-watabe@3ms-inc.com

DMW CORPORATION
DeROs®: Energy Recovery System for RO (Reverse Osmosis) Desalination Plant

ENERGY SAVING AND ENERGY STORAGE

DMW Corporation provides an effective solution with an advanced mechanical device to recover the fluid pressure of brine and reuse it for the suction pressure of a high-pressure pump. As **DeROs®** has an efficiency as high as 98%, high-pressure brine can be reused, and the power consumption of the high-pressure pump can be cut by about 50%. The product is also environmentally friendly, with low pulsation and noise. **DeROs®** is operating in India, Singapore, and the UAE, mainly exported to areas suffering from freshwater shortages. It has contributed to long-term continuous use and reduction of life cycle costs.



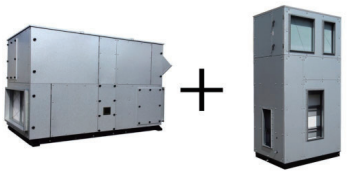
https://www.dmw.co.jp/en/company/
Mr. NAGASAWA nagasawa4048@dmw.co.jp

Earth-Clean Tohoku Co., Ltd.
DESICCANT • MEGACOOL®: Energy-Saving Air Conditioning Without Freon

ENERGY SAVING AND ENERGY STORAGE (Agribusiness technologies: food value chain)

DESICCANT·MEGACOOL® is a new air conditioning system with the basic functions of cooling, heating, dehumidifying, ventilation, humidifying, bacteria removal, deodorization, and air purification. It is an energy-saving and environmentally friendly product since it efficiently utilizes the phenomenon of water vaporization as well as heat exchange and does not use freon gas.

Both the DESICCANT unit and MEGACOOL® have been delivered to various places across Japan such as supermarkets, food production factories, and hospitals.



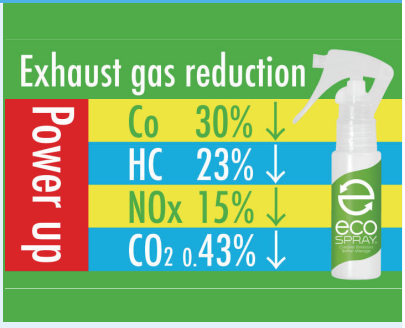
www.earthclean.co.jp/
Mr. Kenichi KONNO hyeasis@earthclean.co.jp

EiShin Co., Ltd.
Energy Efficient & Eco-Friendly Automobile Filter Spray

ENERGY SAVING AND ENERGY STORAGE (Environmental technologies: waste treatment and management)

“eco-SPRAY” [nanoEFX] enables cleaner combustion in the car engine, which translates into improved power and fuel efficiency as well as reduced emissions. The spray is applied to car air filters every 5,000-6,000 km to reduce harmful emissions and increase gas mileage, typically by 8-20%, while decreasing air pollution.

Distributed in 15 countries since 2012: China, Thailand, Canada, US, UAE, Romania, Korea, Cambodia, Vietnam, Iran, Philippines, Bangladesh, Nepal, Taiwan, and Japan.



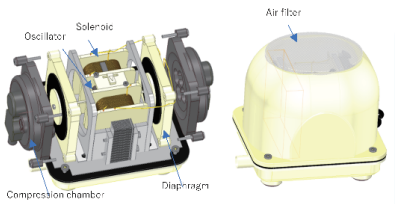
http://eishin-e.jp/en/
Ms. Lemi OSANAI lemio@eishin-e.jp

FujiClean Co., Ltd.
Magnetic Diaphragm Air Pump

ENERGY SAVING AND ENERGY STORAGE (Agribusiness technologies: production enhancements)

FujiClean Air Pump generates air flow by pushing a diaphragm (rubber membrane) through the reciprocating motion of an oscillator (magnet) caused by the magnetic field created when an electric current flows through a coil in the device.

More than 1,000 units/year have been shipped in both Australia and the US as accessory equipment for FujiClean's on-site Sewage Treatment Plant (STP). Air pumps are also sold for aquaculture, ornamental fish breeding, and wastewater treatment other than by the company's STP, with approximately 15,000 units/year shipped in North America and approximately 7,000 units/year in China, Indonesia, Vietnam, and other Asian countries.



https://fujicleanglobal.com/about/index.html
Mr. Masayuki TSUGE kaigai@fujiclean.co.jp

FUMIN Co., Ltd.
Coating for Ultraviolet and Infrared Ray Shielding

ENERGY SAVING AND ENERGY STORAGE

The ultimate in solar control coating technology — FUMIN COATINGTM — forms a 1.5 micron ultra-thin transparent film that cuts out about 90% of ultraviolet rays and 70% of infrared rays. It can be applied on glass and polycarbonate with any type of curved or uneven surface. As 85% of visible light is transmitted, the exterior appearance and interior brightness are not affected.

Some 5,000 construction projects have been completed during the past 10 years. This coating was also selected for The National Art Center, Tokyo covering 4,700 square meters of glass. In Singapore, it was verified that this technology reduced the temperature inside an elevator by 2°C (20% energy saving).

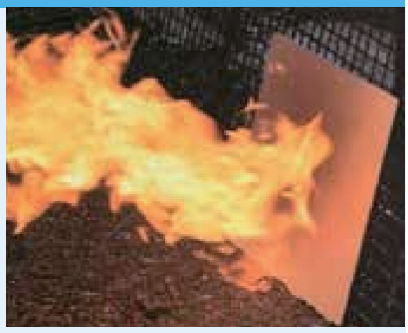
https://www.fumin.jp/index_en.html
Mr. Katsuo YAGISAWA k-yagisawa@fumin.jp

GAINA Pro Co., Ltd / NISSIN-SANGYO CO., LTD.
Multi-functional Ceramic Coating Material

ENERGY SAVING AND ENERGY STORAGE

GAINA is a unique paint that can provide a strong insulation effect just by applying it. By providing insulation, it helps to reduce energy costs. The product originated from the technology developed at the Japan Aerospace Exploration Agency (JAXA) for the H-IIB type rocket.

GAINA was launched in 1999, with 627,390 cans supplied by 2018.



www.gaina.com/
NISSIN-SANGYO CO., LTD. Inquiry@gaina.co.jp

Hikariyane Corporation

Energy-efficient Lighting Fixture by the Application of Sunlight Diffusion and Solar Panel

ENERGY SAVING AND ENERGY STORAGE

This is an eco-friendly skylight system with a solar panel acting as a light adjustment sensor. Light diffusion panels beneath the skylight windows convert direct sunlight into uniform light indoors. The solar panels work as a unique sensor giving a trigger signal to LED light devices to compensate insufficient illumination in the evening or when the weather is cloudy or rainy. Utilizing diffused sunlight through skylight windows and switching off lighting fixtures (LED lights etc.) can save 60-80% of energy. If the Hikariyane system is adopted in large factories and warehouses, it can offer a better solution than PV electricity consumed by lighting devices.

Since this technology is new (patented in April 2019), just two systems have been adopted at customers' facilities so far. Various QC tests carried out prior to the start of production ensure that the system works with stable and reliable quality.

https://hikariyane.com/

Mr. Susumu YAMAKAWA yamakawa.susumu@hikariyane.com

HORIBA, Ltd.

IT Series: Accurate and Fast Non-contact Infrared Thermometers

ENERGY SAVING AND ENERGY STORAGE (Agribusiness technologies: food value chain)

This series of thermometers allows accurate, fast, and efficient temperature measurement from a distance. Rotating and moving objects can also be measured. Non-contact means that temperature can be measured safely and hygienically. This series is suitable for household to industrial use and can be used to measure the temperature of items such as automobiles, asphalt pavements, and food manufacturing processes.

The series is sold in Japan and international markets such as the US, UK, India, Singapore, Malaysia, China, and Indonesia.

www.horiba.com/en_en/

Mr. Takeshi KOBAYASHI takeshi.kobayashi@horiba.com
Mr. Wataru HAGA wataru.haga@horiba.com

JAPAN INSULATION CO., LTD.

Thermal Insulation Materials Using Biomass

ENERGY SAVING AND ENERGY STORAGE (Environmental technologies: circular economy)

Japan Insulation has created a technology that uses biomass (rice husks) as a raw material and fuel to produce thermal insulation materials. The thermal insulator can cover the pipes and equipment installed in industrial plants, such as power stations, refineries, and chemical production sites. It prevents heat from escaping, improving the energy efficiency of the plant and helping the environment. The material is not only non-combustible but also lightweight and environmentally friendly.

A factory in Vietnam to produce and supply insulation materials using this technology was launched in May 2016. Materials have also been supplied in Malaysia, Singapore, Indonesia, Philippines, and elsewhere.

https://www.jic-bestork.co.jp/modules/smartsection/item.php?itemid=269

Mr. Koji ANDO k-andou@jic-bestork.co.jp
Mr. Takashi KAWAMOTO t-kawamoto@jic-bestork.co.jp

JIN PRODUCTLINE INC. & Sensing Techno Co., Ltd

Battery Lifespan Extension Device “JIN-PRO BR”

ENERGY SAVING AND ENERGY STORAGE

“JIN-PRO BR” is a palm-sized device, named from Batter Rescue. By attaching it to lead-acid batteries, the service life of batteries can be extended by more than double. By extending the service life of these batteries, “JIN-PRO BR” significantly reduces waste and the associated environmental impact. The “JIN-PRO BR” generates micro pulses on the electrode plates by continuously applying a small amount of electric current to the lead-acid battery during charging and discharging. By doing so, it decomposes and removes lead sulfate crystals attached by sulfation, which is a major cause of lead-acid battery’s chemical deterioration. This process restores the battery to a state close to that of a new battery. Additionally, “JIN-PRO BR” also inhibits the deactivation of the electrolyte, a cause of gas emission of lead batteries, thereby significantly reducing the risk of accidents.

https://jin-productline.com/

Mr. Yuji YASUTOMI info@jin-product-line.com

Kokusaikan Corporation Japan / Japan Nano Coat Co., Ltd. Miyako Roller Industrial Co., Ltd. / ef-initials Co., Ltd. Nano-Science Laboratory Corporation

Nanotechnology & Industrial Coatings

ENERGY SAVING AND ENERGY STORAGE (Human health technologies: public health)

The product reduces excessive temperature stress on people in buildings, households, and factories, and protects crops in warehouses, goods in containers, and passengers in buses. Heat-cutting paint can bring down temperatures by over 10°C on roofs and gas/oil tanks. The dust repelling function present on painted surfaces will protect the heat-cutting function from deterioration and prevent the accumulation of dust or dirt.

The product has been in the market for 5 years and used by Japan Railways for 3 years.

N/A

Ms. Setsuko TIMUR aladdintimur@gmail.com

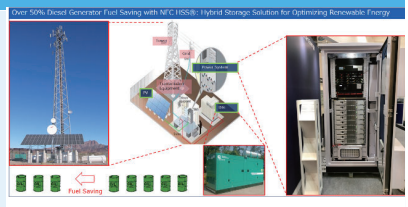
NEC Corporation

NEC HSS®: Hybrid Storage Solution for Optimizing Renewable Energy

ENERGY SAVING AND ENERGY STORAGE

NEC HSS® Hybrid Storage Solution is a flexible, configurable, and fully integrated turnkey solution with a modular and scalable design that can be rapidly deployed to enable telecommunications operators and tower companies to reduce costs and increase plant efficiency. It has multiple energy storage technology options and can be easily configured to meet customers’ exact power and energy requirements.

The product has been deployed in various countries such as South Africa, Nigeria, Kenya, and Tanzania with government agencies, vehicle dealers, mobile networks, tower operators, and media companies.



https://www.nec.africa/

Mr. Yosuke KOIDE ykoide@nec.com

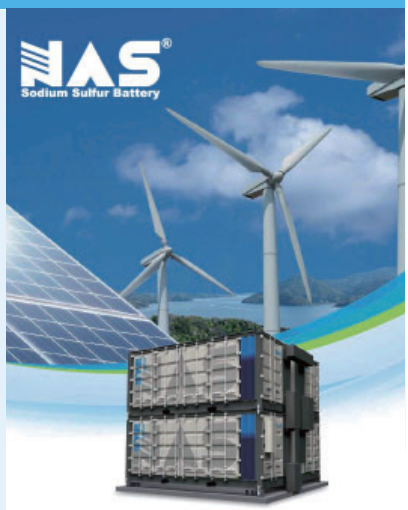
NGK INSULATORS, LTD.

Sodium Sulfur Battery System

RENEWABLE ENERGY
(Energy technologies: energy saving and energy storage)

Sodium Sulfur Battery System technology — NAS® battery — is currently the only commercially mature, large-scale energy storage technology that can be installed anywhere. It can be used for peak shaving, load leveling, and emissions reductions. From large capacity and high-energy density to its long life and compact size, there are many advantages to this technology.

As of March 2018, the total worldwide installed capacity (including that under construction) of NGK's NAS battery systems was approx. 525 MW (3,560MWh), including 360MW in Japan, 37MW in Europe, 20MW in North America, and 108MW in the UAE.



https://www.ngk-insulators.com/en/product/nas.html
Mr. Kodai OKANO okano-k@ngk.co.jp

PROTERIAL, Ltd. (Former: Hitachi Metals, Ltd.)

Amorphous Energy Efficiency Distribution Transformer

ENERGY SAVING AND ENERGY STORAGE

Metglas® amorphous metal distribution transformers (AMDTs), with up to 80% lower core loss than conventional ones, increase the efficiency of energy transmission and distribution. They contribute to energy saving in distribution grids and reduction of CO2 emissions.

This technology was developed in the 1970s, and AMDTs started use in the 1980s. They have been used in many countries, such as Japan (410,000 units), the US (420,000), China (385,000), India (800,000), Mexico (65,000), Brazil (60,000), and the Republic of Korea (80,000).

https://www.proterial.com/e/products/soft_magnetism/metglas.html
Mr. Kai MIMOTO kai.mimoto.jm@proterial.com

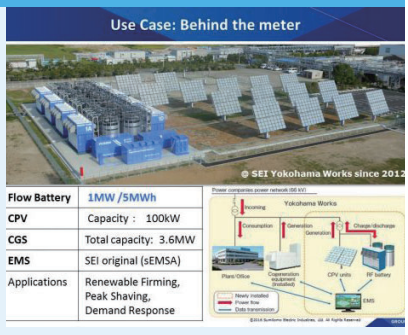
Sumitomo Electric Industries, Ltd.

Vanadium Flow Battery System for Energy Efficiency

ENERGY SAVING AND ENERGY STORAGE

The vanadium flow battery (redox flow battery) can absorb and stabilize the fluctuations in output associated with renewable energy sources. It is essentially a large scale energy storage system featuring a vanadium flow battery that charges and discharges via oxidation and reduction of vanadium ions in an electrolyte.

One of the world's biggest flow batteries of 60,000 kWh (15MW*4h) is installed in Hokkaido. An 8,000kWh (2MW*4h) flow battery demonstration project started in California in 2017.



https://sumitomoelectric.com/
Energy System Division cpv-contact@info.sei.co.jp

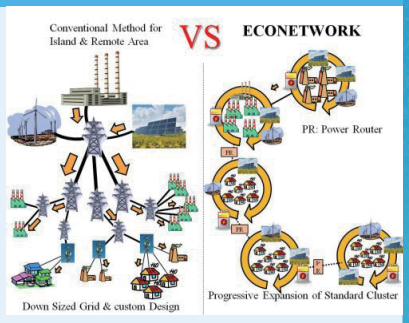
VPEC Inc.

ENERGY SAVING AND ENERGY STORAGE

Power Router for ECONETWORK

A power Router (PR) controls the electricity flow from one cluster to another cluster autonomously. ECONETWORK, which stands for Electricity Cluster Oriented Network, is a new architecture for electric distribution that enables the massive deployment of renewable energy sources. A PR consists of two inverters and a battery and accommodates the excess and shortfall of electricity transfer among clusters without expensive telecommunication lines, thus contributing to the reduction of cost and complexity of electrification.

Computer simulation with Waseda University showed that the concept worked as designed. Laboratory testing of the twin inverters function conducted with Osaka Gas and Waseda University proved the concept and simulation.



www.vpec.co.jp/index_e.html

Mr. Satoshi NAGATA s-nagata@vpec.co.jp

UTILIZATION OF UNSED RESOURCES

ENVIRONMENTAL TECHNOLOGIES

AGC Inc.

Electrolyzed Water Generator Equipped with Ion Exchange Membrane

POLLUTION PREVENTION AND CONTROL
(Agribusiness technologies: water resource management)

The ion exchange membrane SELEMION™ is a technology designed to address global water issues, including droughts and rising salt content in groundwater. Electrodialysis efficiently separates organic materials from salt, offering a reliable method for desalination and nitrate removal from groundwater to generate safe drinking water.

Boasting a high water reuse ratio of nearly 90%, low energy consumption, and cost-effectiveness, this innovation provides a lifeline for regions reliant on limited groundwater resources. Its versatility extends to applications in food industries, industrial wastewater reclamation, and more. This pioneering approach contributes significantly to water quality and accessibility, particularly in areas lacking robust power infrastructure.

www.agc.com/en/
Dr. Masaaki OKABE masaaki.okabe@agc.com

COMOTEC Corporation

Cassette-type Black Smoke Removal Device

POLLUTION PREVENTION AND CONTROL

Cassette type Diesel Particular Filter (DPF) “MoCobee CT” is the retrofit device for black smoke removal attached on diesel engine, which can easily remove 99.9% of black smoke, regardless of use condition and engine type. “MoCobee CT” can be semi permanently recycled by detaching from scrapped vehicles, versatile to use on various conditions and can be installed on various machineries.

3,500 units have bee sold for passenger vehicles, 3,000 units for forklifts, 50 units for construction machines, and 30 units for railway vehicles since 1999. In terms of export, 30 units of DPF for busses have been exported to Mongolia and China, and 30 units of DPF for forklifts have been exported to China, Taiwan and Thailand.

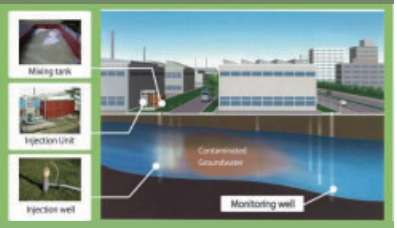
可搬式ディーゼル黒煙除去装置
「モコキャリーCTC1」

https://www.comotec.co.jp/
Mr. Soichiro HOSHINO info@comotec.co.jp

EcoCycle Corporation

EcoClean and GreenClean Series for Bioremediation

POLLUTION PREVENTION AND CONTROL



The bioremediation products EcoClean and GreenClean perform in-situ bioremediation or purification of soil and groundwater contaminated with chlorinated hydrocarbons, heavy metals, petroleum hydrocarbons, or cyanide compounds. Both products are diluted in water and injected into sub-surfaces to stimulate native microorganisms in a contaminated site. Most contaminated sites can be cleaned in a few months, which requires low energy and mediation costs.

Bioremediation products have been applied for cleaning over 170 sites contaminated with chlorinated aliphatic hydrocarbons, chromium (VI), petroleum hydrocarbons, and cyanide in Japan, the US, Taiwan, and other Asian countries.

www.ecocycle.co.jp/e_index.html
Mr. P. S. REDDY reddy@ecocycle.co.jp

Excelsior, Inc.

Mt. Fuji Toilet: Portable and Eco-friendly Hygiene Facility

POLLUTION PREVENTION AND CONTROL (Human health technologies: public health)

The technology sterilizes excrement and removes foul odors with a special treatment agent. Chemical materials to sterilize and deodorize the excrement (slaked lime, zeolite, etc.) and promote physical solidification (such as a water-absorbing polymer) can be combined and provided depending on different situations and purposes.

This technology has been introduced in many countries. In Bolivia, in cooperation with JICA's local office, Excelsior conducted mobile toilet demonstration tests for tourists in mountainous areas and at Uyuni Salt Lake.

https://excelsior-inc.com/english/

Mr. Kanichi ADACHI kan-ichi@excelsior-inc.com

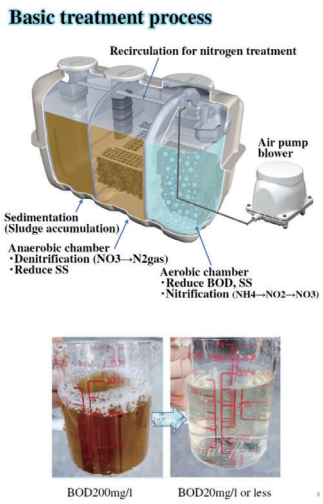
FujiClean Co., Ltd.

Factory-made On-site Wastewater Treatment System

POLLUTION PREVENTION AND CONTROL (Human health technologies: public health)

FujiClean wastewater treatment system is an on-site wastewater treatment infrastructure. The product can be installed in a prioritized area quickly and cost-effectively. Compared to large-scale on-site construction type wastewater treatment systems, lower shipping and installation costs and shorter construction schedules can be expected with the FujiClean system. The effluent from this system can also be used for irrigation since the treated water is as clean as that from a centralized wastewater treatment plant.

More than 600,000 units have been installed for 13 years in countries such as Japan, Australia, the US, Germany, Vietnam, Philippines, and Myanmar.



https://fujicleanglobal.com/about/index.html

Mr. Masayuki TSUGE kaigai@fujiclean.co.jp

HINODE SANGYO CO., LTD.

Elbic Series: Solutions for Wastewater Treatment

POLLUTION PREVENTION AND CONTROL (Environment technologies: circular economy)

The Elbic series is an environmentally friendly microbial product for treating wastewater, especially in the food processing industry. Using microorganisms, the Elbic series can consistently reduce BOD to acceptable levels set forth by law, assure stabilized and efficient wastewater treatment, and make the operation of wastewater treatment plants easier by lowering running costs.

Hinode Sangyo has previously supplied 7 ElbicNEO System™ (microorganisms with incubator) units.

www.hinodesangyo.com/english/

Ms. Kaori FUJITA k-fujita@hinodesangyo.com

HINODE SANGYO CO., LTD.

Hinode Microbubble Generator (HMB)

POLLUTION PREVENTION AND CONTROL (Environment technologies: circular economy)

The dispersed microbes process invented by Hinode Sangyo is a revolutionary technology that prevents sludge bulking during wastewater treatment. This process employs a device called a Hinode Microbubble Generator (HMB), which generates microbubbles and efficiently dissolves oxygen in the water to enhance the activity of aerobic microorganisms.

HMBs have been installed in a food-processing plant and several wastewater treatment plants.

www.hinodesangyo.com/english/

Ms. Kaori FUJITA k-fujita@hinodesangyo.com

IGADEN CO., LTD.

MICRO WATER SYSTEM®: Electrolysis Type Wastewater Treatment Unit

POLLUTION PREVENTION AND CONTROL

MICRO WATER SYSTEM® is a water quality improvement treatment system that uses electro-physical chemical reactions with no additional agents. Using a self-developed electrode material, a small amount of electrolytes with salt/industrial salt/seawater are used to flocculate pollutants using electric charges, and solid-liquid separation is performed. Another usage is to decompose and decolorize water that contains organic and nitrogenous compounds through an electrochemical oxidative decomposition process.

It can be used to mitigate pollution in lakes, rivers, and drain water discharged from factories. Wastewater treatment tests are conducted to meet the regulation of discharge standards for rivers, oceans, lakes, marshes, and other specified discharge destinations. The product can also be customized to meet the needs of customers.

www.igaden.com/indexEnglish.htm

Mr. Satoru IGARASHI idj@igaden.com

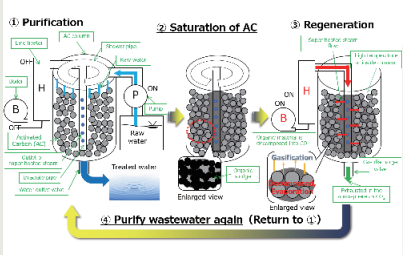
JTOP Co., Ltd.

On-site Regeneration of Activated Carbon Filtration Unit

POLLUTION PREVENTION AND CONTROL

JTOP has developed an activated carbon filtration system with an automatic regeneration device. During the operation, it regenerates the filtration material (activated carbon) by injecting superheated steam without removing the filtration material from inside the tank. Even if the filtration material is not replaced, wastewater treatment (refractory organic matter treatment, COD treatment, decolorization treatment, etc.) and exhaust gas treatment can be steadily performed without deterioration in operation efficiency.

This system has been sold and delivered in Indonesia as wastewater recycling equipment that purifies dyed wastewater discharged from textile factories into colorless and odorless water.



www.jtops.com/en/

Mr. Jiichi NAKAKI nakaki@jtops.com

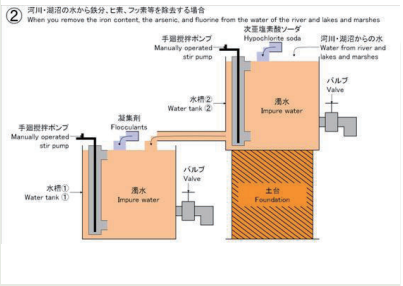
KAWATOKU CO., LTD.

Removing Heavy Metals from Water

POLLUTION PREVENTION AND CONTROL

Kawatoku's flocculating agents can purify turbid water into drinkable water at a low cost by removing heavy metals such as iron, arsenic, and fluorine. This technology does not require electric power and can be installed in existing tanks composed of any material. When processing small amounts, the turbid water can be agitated by hand. A manually operated stir pump can process up to 5 tons of water in one tank.

Kawatoku has been working to remove fluorine from well water in Tanzania. In Myanmar, the company's flocculating agents have been used in a medical treatment facility to secure safe water for washing hands.



www.unido.or.jp/en/technology_db/1664/

Mr. Hirofumi SUGANO kawatoku@ivy.ocn.ne.jp

KITA MACHINERY Co., Ltd.

Engineering Design and Construction of Sustainable Water Treatment Methods

POLLUTION PREVENTION AND CONTROL

KITA MACHINERY offers engineering services from the design to installation of water treatment systems for industrial and drinking use. The solution is not a packaged product but is custom designed for each site, which makes it possible to optimize piping structure and parameters on site, even in operation. The company also has design, installation, and operating know-how for temporary construction, which can reduce initial costs and be more suitable than conventional plants.

www.kitakikai.co.jp

Ms. Tomoko KANAMURA kanamura@kitakikai.co.jp

Ms. Haruka UENISHI haruka.uenishi@kitakikai.co.jp

MARUSYO SANGYO Co., Ltd.

Moldefeat: Formaldehyde Removal Coat

POLLUTION PREVENTION AND CONTROL (Human health technologies: public health)

Moldefeat was developed as the solution for indoor air pollution and sick building syndrome to protect against formaldehyde gas. Among several substances responsible for indoor air pollution, formaldehyde is the most severe and directly affects our daily lives. Formaldehyde is known to cause cancer; nevertheless it is found in various essential products such as plywood, particleboard, building materials, and insulation. S-3T absorbs and eliminates formaldehyde gas very quickly. Once applied, it provides a long-lasting effect over several years.

odor.marusyosangyo.com/en/

Mr. Takayuki YOSHIKAWA yoshikawa@marusyosangyo.jp

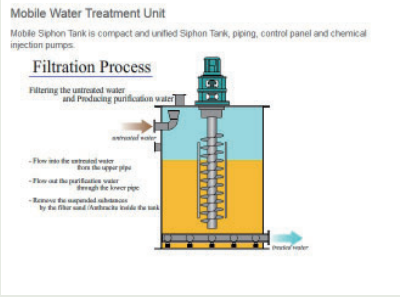
Nihon Genryo Co., Ltd.

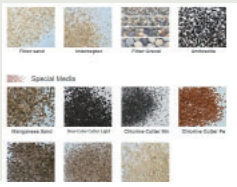
POLLUTION PREVENTION AND CONTROL

Eco-friendly Mobile Sand Filtration Device

The MOBILE SIPHON TANK (MST) is a mobile sand filtration device that filters raw water and produces high-quality water for drinking and industrial use or use in emergencies. The device needs no filter replacement, as the built-in filter media can be used semi-permanently. Nihon Genryo's patented technology — Siphon Washing Technology — embedded in the tank can create twin vertical and horizontal vortices, which cause sand particles to be kneaded with each other through a three-dimensional washing action, thus removing hard sludge layers on the surface of the particles.

Since its invention in 1997, Siphon Washing Technology has been displayed in major overseas exhibitions, such as IFAT in Germany, Aquatech in the Netherlands, WEFTEC in the US, and The Big 5 in the UAE. The company has also delivered and installed 3 MSTs in Vietnam, 6 truck-mounted MSTs in Laos, and 1 MST and 1 truck-mounted MST in the Philippines.





www.genryo.co.jp/en/

Mr. Hiroshi EJIMA info@genryo.co.jp

Nihon Genryo Co., Ltd.

POLLUTION PREVENTION AND CONTROL

Eco-friendly Non-Electric Sand Filtration Device

The Non-Electric SIPHON TANK (NEST) can be operated manually without electricity to filter raw water and produce high-quality water for drinking and industrial use or use in emergencies. The device needs no filter replacement, as the built-in filter media can be used semi-permanently. The Siphon Washing Technology embedded in the tank creates twin vertical and horizontal vortices that cause sand particles to be kneaded with each other to remove hard sludge layers on the surface of the particles.

Nihon Genryo conducted a feasibility and demonstration project for installing the NEST in Mozambique in 2013. This project conducted survey investigations in 3 provinces and pilot demonstrations in 4 locations. These demonstrations showed that the turbidity of lakes, rivers, springs, and shallow well waters are significantly improved after treatment by the SIPHON Tank.

www.genryo.co.jp/en/

Mr. Hiroshi EJIMA ejima@genryo.co.jp, info@genryo.co.jp

Nihon Genryo Co., Ltd.

POLLUTION PREVENTION AND CONTROL

Eco-friendly Sand Filtration Device

The MOBILE SIPHON TANK is a sand filtration device that filters raw water for drinking and industrial use or during emergencies. The device needs no filter replacement as the built-in filter media can be used semi-permanently. Nihon Genryo's patented technology — Siphon Washing Technology — embedded in the tank can create twin vertical and horizontal vortices that cause sand particles to be kneaded with each other through a three-dimensional washing action, thus removing hard sludge layers on the surface of the particles.

Over 100 devices with Siphon Washing Technology have been used worldwide, including in Japan, Germany, Korea, Laos, Mozambique, Philippines, and Vietnam.

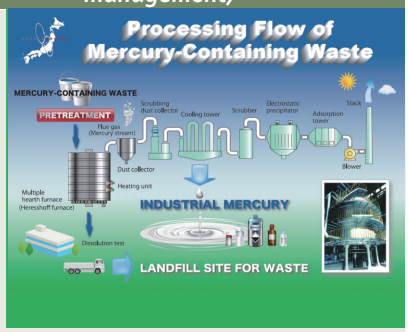
www.genryo.co.jp/en/

Mr. Hiroshi EJIMA info@genryo.co.jp

Nomura Kohsan Co., Ltd.

Mercury Waste Recycling

POLLUTION PREVENTION AND CONTROL (Environmenta technologies: waste treatment and management)



Nomura Kohsan has invented an all-inclusive facility that can recycle, treat, and process mercury wastes from fluorescent lamps, batteries, blood pressure devices, and thermometers. Through a roasting process, mercury is heated at 600°C to 800°C until it vaporizes. Afterwards, the mercury vapor flows through a cooling tower and scrubber, where it is recovered. Recovered materials (mercury, glass, metallic base, fluorescent powder, etc.) can be recycled into raw materials to be used again for other products.

Since its establishment in 1973, the company has specialized in treating, processing, and recycling mercury waste, and treated more than 25,000 tons of mercury waste annually in Japan between 2011 and 2013. It has also imported and treated uncrushed lamps from the Philippines from 2002 to 2014 and Taiwan from 2006 to 2014.

www.nkcl.jp/
Mr. Yasuyuki YAMAWAKE info@nkcl.jp

OSMO Co., Ltd.

Distributed Simple Water Purification Plant System

POLLUTION PREVENTION AND CONTROL (Human health technologies: public health)

The Distributed Simple Water Purification Plant System is a membrane water system that can purify raw water into safe drinking water. The system adopts a low-pressure, high-polymer membrane (reverse osmosis (RO) membrane), which can remove viruses, general bacteria, ions, arsenic, heavy metals, and other harmful substances. It can provide 3m³ - 48m³ of safe drinking water per hour, be easily installed in a small space, and requires only simple maintenance.

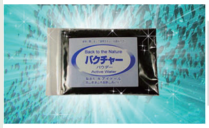
Osmo has installed the system in semiconductor factories, food factories, pharmaceutical factories, and hospitals.

www.osmo.co.jp/
Ms. Huayu LIN lin_huayu@osmo.co.jp

RBC consultant co., ltd.

Water Treatment with Bakture System

POLLUTION PREVENTION AND CONTROL (Agribusiness technologies: production enhancement)



The name "Bakture" Refers to "Back to the Nature."

Water treatment with an activator called Bakture Powder can be utilized for multiple applications, such as river purification and wastewater treatment for food industries and commercial facilities. Bakture Powder activates existing microbes, and the microscopic food chain can be revived in the water. Environmental pollutants are decomposed without any need for power.

The powder was developed in 1993 and commercialized in 1996. RBC has purified over 200 river and lake locations and about 10 industrial wastewater treatment plants in Japan. The product has also been supplied to countries such as Korea, China, Thailand, Laos, the US, Australia, Canada, and the UK.

www.rbc-kk.co.jp/
Ms. Chigusa SUGIYAMA infokankyo@rbc-kk.co.jp

Seiwa-Denko Co., Ltd.

Bio-Lux: A New Waterless Bio-Toilet System

POLLUTION PREVENTION AND CONTROL
(Human health technologies: public health)

With the slogan, “when one bio-toilet is installed, the water will be clean”, Seiwa-Denko develops and manufactures a bio-toilet that uses neither water nor special bacteria, and treats human waste with ordinary sawdust. The company is working both domestically and internationally on the promotion of toilets. The Bio-Lux bio-toilet eliminates human waste by evaporation and decomposition with sawdust filled in the toilet. What remains is sawdust containing inorganic components from the waste that neither evaporated nor decomposed, and this can be used as an organic fertilizer.

The company has sold more than 3,600 Bio-Lux units and achieved many intellectual property rights since starting its development in 1996 and keep improving it even now. Bio-toilets have been demonstrated in Vietnam with support from JICA and JETRO.

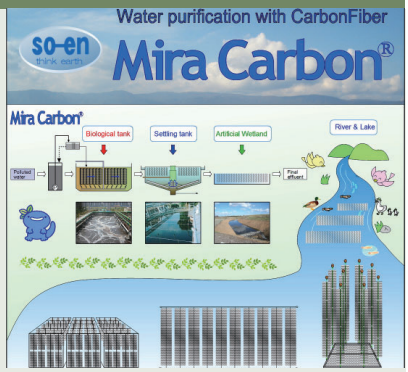
https://seiwa--denko-co-jp.translate.goog/index.html?_x_tr_sl=ja&_x_tr_tl=en&_x_tr_hl=ja

Ms. Noa YAMADA seiwa@seiwa-denko.co.jp

SO-EN CO., LTD.

Water Treatment with Carbon Fiber

POLLUTION PREVENTION AND CONTROL



MiraCarbon Water Purification is a method of purifying water in rivers and lakes using carbon fibers. Such fibers have a large surface on which microorganisms can live, resulting in the natural decomposition of contaminants and pollutants in the water. The carbon fiber purification method is cost efficient because of low installation costs, easy maintenance, and no running costs.

This technology was developed in 2000 and commercialized in 2008. MiraCarbon Water Purification has been used at over 300 locations in Japan and over 20 in other countries, such as China, the Republic of Korea, and Taiwan.

so-en.net/tansoseni-e.html

Mr. Yukio KOGURE soen.net@gmail.com

TECHNO TAKATSUKI CO., LTD.

Linear Diaphragm Air Pump

POLLUTION PREVENTION AND CONTROL
(Energy technologies: energy saving and energy storage)

Linear diaphragm air pumps are designed to aerate residential and small commercial wastewater treatment systems. The HIBLOW air pump technology provides air for households and compact wastewater treatment systems to activate aerobic bacteria, which in turn can reduce the organic matter contained in wastewater.

Since 1972, more than 15 million units have been sold worldwide, including 870,000 in North & Latin America, 380,000 in Europe & Near/Middle East, and 150,000 in Asia & Oceania.

www.hiblow-eu.com

Mr. Ryosuke KOMORI ryosuke-komori@next.takatsuki.co.jp

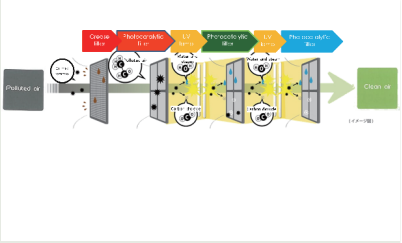
Toyo Kosho Co., Ltd.

POLLUTION PREVENTION AND CONTROL

PCF® Hybrid: Photocatalytic Deodorization System

PCF® Hybrid is a purification system for exhaust air with malodor or nasty smell. It has been proven to remove 92% of acetaldehyde (stimulating greenery smell), 93.5% of methyl mercaptan (rotten onion smell) and 94% of toluene (gasoline smell). As the deodorization effect occurs through UV irradiation using photocatalytic filters, costs of expendables are reduced. In contrast, refills must be purchased for filters utilizing activated carbon or other deodorants.

Some 440 sets have already been installed at 206 sites in Japan. Shopping malls, schools, laboratories, resort hotels, processing food plants, and school canteens use these products. The company also plans to export products to Vietnam, China, and Taiwan.



www.toyokosho.co.jp/english-2/

Mr. Hironori MIYAGAWA h-miyagawa@toyokosho.co.jp

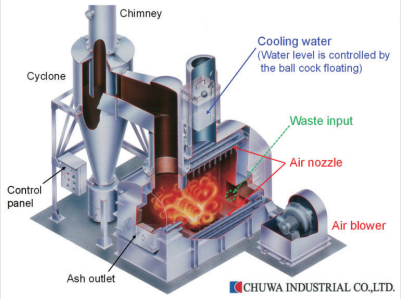
CHUWA INDUSTRIAL Co., Ltd. / M.K.D. Corporation

WASTE TREATMENT AND MANAGEMENT

CHUWASTAR: Environment-friendly and Smokeless Incinerator

CHUWASTAR is an incinerator with a water-cooled structure that ensures exceptional durability, even when incinerating high-calorific-value waste like plastics. This incinerator, designed for the safe disposal of medical waste, achieves smokeless combustion using a forced air supply method.

With a versatile and adjustable scale, CHUWASTAR is the perfect solution for complete sterilization, volume reduction, and quick medical waste processing. It significantly enhances working conditions, reduces risks, and contributes to the safe management of medical waste, making it an essential technology for developing countries facing medical waste challenges.



www.chuwastar.co.jp/en/

Mr. Kuniaki IMAO imao@chuwastar.co.jp

Donico Inter Co., Ltd.

WASTE TREATMENT AND MANAGEMENT (Environmenta technologies: circular economy)

Micro-Sizer: Glass Crushing and Recycling

The Micro-Sizer is an innovative glass-crushing machine that turns glass into a safe powdery glass cullet. It offers a competitive advantage over conventional hammer crushers and mills due to its efficient impurity separation process and lower long-term operating costs. The Micro-Sizer eliminates the need for separating other materials like caps and labels, and it can also remove liquid, alcohol, sugar, and salt content during the crushing process, making glass recycling easier.

Despite its compact size (4m x 6m), the Micro-Sizer is a powerful machine with 11 rotor blades that operate at 1800 rpm, producing up to 2 tons of glass cullet per hour. This edgeless glass cullet has versatile applications, including use in construction road development and as an alternative to natural sand for beach areas suffering from coastal erosion.

http://www.donico.co.jp/

Mr. Kaneyuki INOKO kaneyukiinoko@gmail.com

Donico Inter Co., Ltd.

Glass Interlayer Separation Equipment

WASTE TREATMENT AND MANAGEMENT

The glass recycling crushers, FDS1250 and FDS1250PV, are designed for laminated glass and photovoltaic panel glass, respectively. These machines can efficiently separate glass from interlayer materials, or metal parts in the case of photovoltaic panels, without damaging them, enabling the reuse of the glass in various products, reducing landfill waste, and contributing to a more sustainable recycling process.

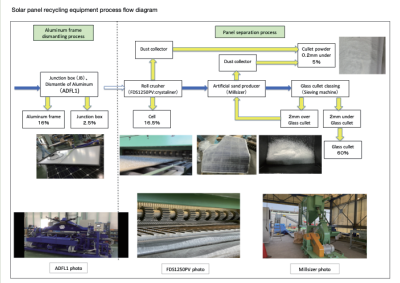
The technology has unique features, such as a roll-type crushing system. It has been in use since 2008, with plans for expansion into emerging markets due to the growing demand for automobile, architectural, and photovoltaic panel recycling.

www.donico.co.jp/
Mr. Kaneyuki INOKO kaneyukiinoko@gmail.com

Donico Inter Co., Ltd.

PV Ecoline: Low Cost and Efficient Recycling Technology for Discarded Sheet Glass in Photovoltaic Panels

WASTE TREATMENT AND MANAGEMENT (Environmental technologies: circular economy)



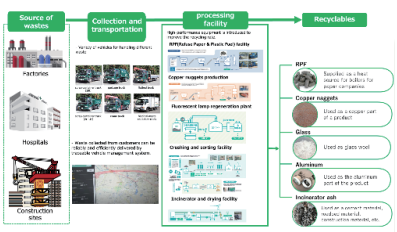
Photovoltaic panels (solar cells) have been widely applied all over the world as renewable energy resources. Since the average lifetime of PV panel is about 20 years, considerable amount of waste PV panels are accumulating every year. Therefore, there are increasing demand for the environmentally friendly process to treat used PV panels. Donico Inter provides ideal solutions for this: to dismantle panels and recycle cover glass and other parts as much as possible, with the simple and efficient process. By applying this technology “PV Ecoline”, waste glass in used PV panel can be turned into various forms: glass cullet as a raw material to be processed, or artificial silica sand without edges in corners which alternates natural sand.

www.donico.co.jp/
Mr. Kaneyuki INOKO kaneyukiinoko@gmail.com

Kayama Kogyo Co., Ltd.

Operational Technology for Treatment of Industrial and Hazardous Waste

WASTE TREATMENT AND MANAGEMENT (Environmental technologies: circular economy)



Kayama Kogyo has a sorting facility, incinerator/drying facility, solid fuel RPF facility, copper nugget manufacturing machine, and fluorescent lamp tube recycling plant to improve the recycling rate. It further provides a one-stop service for waste treatment by actively recycling high-mix, small-lot waste.

The technology has been used in various prefectures in Japan and Vientiane City to deal with industrial waste from manufacturing industry and offices, medical waste from hospitals, and waste from construction sites.

www.kayama-k.co.jp/english
Mr. Shinichi TABATA tabata@kayama-k.co.jp

KINSEI SANGYO CO., LTD.

WASTE TREATMENT AND MANAGEMENT

Waste Incinerator Gasification System

The KINSEI gasification system is an efficient and safe waste incinerator gasification system that can completely detoxify hazardous industrial and medical waste to prevent air pollution. The system also produces hot water, hot air, steam, and electricity that can be used for various purposes.

Kinsei has been selling this gasification system since 1980 and has sold over 200 units. Outside of Japan, the product has been delivered in Korea, China, Indonesia, Taiwan, Thailand, and elsewhere.

www.kinsei-s.co.jp/english/
Mr. Keiichi KANEKO kinsei@kinsei-s.co.jp

Mikuniya Corporation

WASTE TREATMENT AND MANAGEMENT

Mishimax Organic Waste Treatment System

Mishimax reduces the volume of wastewater sludge, food waste, and other organic waste by more than 90% in 24 hours, using high-temperature aerobic biodegradation and the heat from evaporation. The organic waste is biodegraded with wood chips in the Mishimax fermentation tank. After six months, the biodegradable organic waste turns into an organic fertilizer.

In Fukushima Prefecture, Mishimax was used for demonstration experiments to reduce the volume of polluted organic wastes.

www.mikuniya.jp/mikuniya_eng/index.html
Mr. Makoto TOKUOKA tokuoka@mikuniya.co.jp

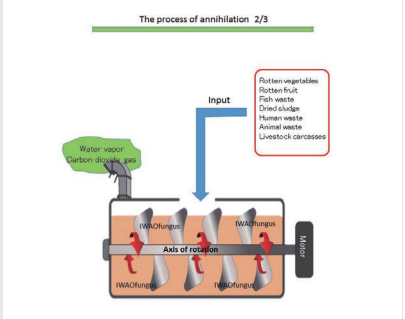
NIHONHAKKO Co., Ltd.

WASTE TREATMENT AND MANAGEMENT (Environmental technologies: circular economy)

KID System

Nihonhakko manufactures and sells garbage disposal machines, decomposition machines, microorganisms, and environmental improvement systems. Its latest advancement is the KID System, which eliminates garbage, food waste, manure/urine/sludge, and dried sludge.

Through the targeted use of microorganisms and stirrers, the system can decompose and remove more than 99% of the material. As no incineration is required, there is also no emission of dangerous pollutants like ash or contaminants that can pose a health and safety risk.



nihonhakko2020.wixsite.com/website-8
Mr. Junichiro TSUNEISHI k-tsuneishi@nihonhakko.co.jp

SHINKO TECNOS CO., LTD.

Hydrothermal Treatment Technology

WASTE TREATMENT AND MANAGEMENT (Environmental technologies: circular economy)

This technology causes an injected material to undergo a hydrolytic reaction with high-temperature and high-pressure steam (max 230°C / 3Mph) inside a reactor. Germ-free outputs generated after 30 minutes of treatment can be used as solid fuel, solid fertilizer, liquid fertilizer, or livestock feed. Various types of unused resources (waste) can be treated with this technology in a short process (2.5 – 3.5 hours for one process).

Shinko Tecnos has installed hydrothermal treatment machines in Japan in 2007, China in 2010, Thailand in 2013, Sri Lanka in 2014, and Indonesia in 2016.

shinko-eng1.webnode.jp

Mr. Kentaro NAGASAWA info@shinko-mfg.co.jp

SUGAWARA Industry Co., Ltd.

Asphalt Waste Recycling Technology Using Hot-Mix Recycled Asphalt Plants

WASTE TREATMENT AND MANAGEMENT (Environmental technologies: circular economy)

This technology can repair roads at a lower cost and with lower environmental impact than conventional methods. It can reduce the use of new pavement materials by recycling reclaimed asphalt pavement (RAP) generated when roads are repaired, synthesizing recycled asphalt mixtures, and reusing them to pave roads. Cost can be reduced by 5% compared to the conventional method and CO2 emission reduced by approximately 7kg-CO2/ton-asphalt, although the effect varies depending on the RAP transportation distance.

Sugawara Industry has constructed an asphalt recycling plant in Karawang, West Java Province, Indonesia. It has a track record of selling recycled asphalt mixtures mainly for paving roads to private premises such as industrial parks, with a recycling rate of 40% for surface layers and 50% for base layers.

sugawarakogyo.co.jp

Mr. Wataru SUGAWARA info@sugawarakogyo.co.jp

Tsukishima Kankyo Engineering Ltd.

Waste Liquid Incineration System

WASTE TREATMENT AND MANAGEMENT

Tsukishima Kankyo Engineering's Waste Liquid Incineration System, also known as the Submerged Combustion System, treats various liquid forms of waste through incineration. Without secondary pollution, the technology can treat liquid waste discharged from a broad spectrum of production processes used in the petrochemical, fine chemical, pharmaceutical, agrochemical, pulp, and other industries.

Approximately 400 units have been supplied in various countries since 1973.

www.tske.co.jp/en.html

Mr. Hidefumi TOYOTAKE toyotake@tske.co.jp

WEF Institute of Technology Inc.

Organic decomposition of waste using active oxygen: ZERO SONIC

WASTE TREATMENT AND MANAGEMENT
(Human health technology: public health)

This technology utilizes active oxygen to instantly decompose atomic-level bonds in organic substances, including animal and plant residues and petroleum-derived compounds. The technology boasts several key features, including its ability to decompose and process solid organic matter with active oxygen without the need for burning. By utilizing decomposition heat at around 200°C, it effectively conserves energy. Additionally, it stands out for significantly reducing CO2 emissions compared to conventional incineration methods. The technology adheres to strict emission standards, ensuring that the generation of toxic gases, such as dioxin, remains below acceptable levels. Moreover, the process leaves only a small amount of ceramic residue, making maintenance a breeze.

https://aoyama-wefit.com/en/
Mr. Takayuki Noto t.noto@aoyama-wefit.com

Well Create Co., Ltd.

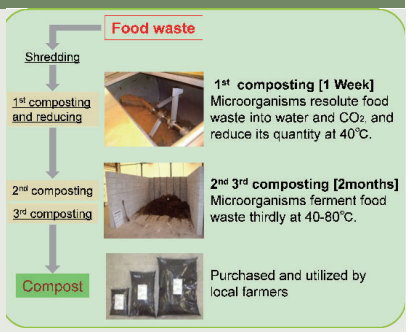
Community-based Food Waste Composting System

WASTE TREATMENT AND MANAGEMENT
(Agribusiness technologies: production enhancement)

Well Create provides an effective solution to food waste by constructing a community-based composting system. The composting center, equipped with a food waste recycling facility operated by the company, collects food waste and produces compost in a composting machine. Then, the compost is used to cultivate rice and vegetables in neighboring farmland.

Well Create has been operating the composting center in Kitakyushu City since 2015. It produces 80 tons of compost annually and supplies it to local farmers.

Other than the one used in Kitakyushu, 588 composting machines had been sold up to 2018.



www.well-c.co.jp/
Mr. Takaki MATSUO tm@fun-c.jp

Biomass Resin HOLDINGS Co., Ltd.

Neoryza & Rice Resin: Biodegradable and Non-biodegradable Biomass Plastic Compound Technology Using Rice

CIRCULAR ECONOMY
(Agrobusiness technologies: food value chain)

Biomass Resin Holdings provides two types of biomass plastics: biodegradable plastics that return to nature and non-biodegradable plastics that require strength and durability, using the main crops of the region or country as raw materials for biomass resins. The use of biomass plastic made from rice that is out of standard, omitted, or expired (i.e., discarded without being eaten) as the raw material for the resin contributes to solving issues such as microplastics and climate change decarbonization. In the late 1990s, the system was installed at more than 10 sites in the Middle East.

The products have been introduced in China and Vietnam. Local biomass can be utilized to produce biomass plastics for local consumption. Remote monitoring and operation systems are also being introduced, making it easy to expand the system to multiple regions.

www.biomass-resin.com/
Mr. Makihito DEGUCHI maki@biomass-mkt.com

FERMENSTATION Co., Ltd.

Integrated Ethanol Production System Utilizing Biomass

CIRCULAR ECONOMY
(Agrobusiness technologies: food value chain)

Fermenstration's integrated fermentation/distilling production system allows food scraps to be turned into ethanol, thus creating new value from what was once considered waste. This system allows for the manufacturing of ethanol utilizing a variety of biomass, not only high-sugar content materials such as corn and sugar cane. Besides, fermented materials obtained as byproducts can be used for animal feed and fertilizer. This technology can provide a sustainable resource recycling system that minimizes waste.

The company conducted fermentation experiments with more than ten biomass materials, such as rice for non-human consumption or vegetable and fruit waste, which were successfully converted into ethanol. The rice ethanol production facility is already commercially operating in Japan. Ethanol-derived products (aroma products and cosmetics) are sold in major department stores and cosmetic stores.

fermenstation.co.jp/en/
Ms. Lina (SAKAI) WATANABE lina@fermenstation.jp

Green Science Alliance Co., Ltd.

Nano Sakura: 100% Natural Biomass-based Biodegradable Resin

CIRCULAR ECONOMY
(Environmental technologies: pollution prevention and control)

Nano Sakura is a biodegradable resin manufactured from 100% natural raw materials and biomass. It consists mainly of biodegradable cellulose starch and PLA (polylactic acid). These biodegradable materials can effectively be compounded with nano-fibrillated cellulose and biomass waste. Combined with nitrocellulose, it can increase mechanical strength, biodegradability, foaming properties, molded properties, crystallinity, and heat durability.

Biodegradable resin products, mainly in pellet form, have been sold to over 70 customers in Japan and exported to ASEAN countries, Spain, the US, and other countries. Those products have consisted mainly of PLA and starch-based biodegradable resin composite with nano cellulose and biomass waste.

www.gsalliance.co.jp/en/
Mr. Ryohei MORI ryoheimori@gsalliance.co.jp

GUUN Co., Ltd.

CIRCULAR ECONOMY

Fluff Fuel Technologies Derived from Waste Plastics

Guun recycles raw plastic materials to produce Fluff fuels, which provide more eco-friendly, space-saving, and affordable options than other types of fossil fuels. Fluff fuels are often used as alternatives to coal or heavy oil by paper manufacturers in Japan and cement companies overseas.

A pilot project to establish a recycling enterprise in Cebu, Philippines, started in 2013. In 2015, the project was scaled up and a commercial-scale plant was completed in May 2017 in Cebu, with a capacity of 50-75 tons per day.

www.guun.co.jp/
Mr. Toshiki KITAI it_kitai@guun.co.jp

KAIHO INDUSTRY CO., LTD.

Eco-Friendly End-of-life Vehicle Recycling System

CIRCULAR ECONOMY (Environment technologies: waste treatment and management)

Kaiho Industry offers a package solution for waste treatment and management of end-of-life vehicles (ELV), which includes recycling equipment, a business management system, and training.

The system was introduced in 5 countries, including Thailand and Kenya. Over 70 foreign trainees were educated in the training center in 10 years.

www.kaihosangyo.jp/english
Mr. Taishi SUZUKI suzuki@kaiho.co.jp

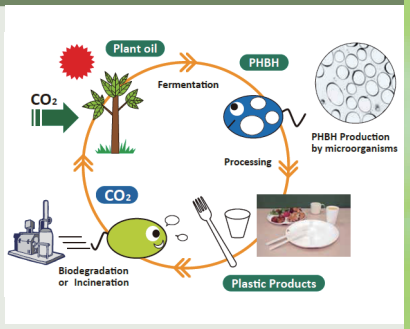
KANEKA CORPORATION

KANEKA Biodegradable Polymer PHBH™

CIRCULAR ECONOMY, (Environment technologies: pollution prevention and control)

PHBH™ is a novel biopolymer produced from sustainable raw materials. It is made through Kaneka's unique microbial fermentation process and can be used in various applications. Kaneka's recent research shows that PHBH™ has excellent biodegradable properties in marine environments, which contributes to reducing marine plastic waste.

PHBH™ was launched to the market in 2008 and is currently used mainly in France and Germany for fruit and vegetable bags and compostable bags. Yearly sales of PHBH™ reached 1,150 tons in 2018.



www.kaneka.co.jp/en/
Mr. Mitsutoshi MORO Mitsutoshi.Moro@kaneka.co.jp

Mitsubishi Chemical Aqua Solutions Co., Ltd.

CIRCULAR ECONOMY

DiaFellow™ DM: Oil Absorbent

This composite material is a high-performance oil adsorbent that separates water from oil-containing wastewater, which was previously difficult to treat with conventional treatment processes. The adsorbent filters water from the washing of vehicles at bus and taxi companies, train depots, or hydroelectric power plants. Then, the filtered water can be reused as washing water at the site. This method can help to reduce water consumption.

Wastewater treatment systems utilizing DiaFellow™ DM are installed at over 1,200 sites in Japan as of December 2020.

www.mcas.co.jp/en/
Overseas Business Support Dept MCJP-MBX-MCAS_OBD_INFO@mchcgr.com

SION Corporation

CircuLite: Venous Industrial Processing Technology, Functional Material from Biomass Ash Waste

CIRCULAR ECONOMY (Energy technologies: utilization of unused resources)

CircuLite is manufactured from ash components (mainly SiO_2 and Al_2O_3) derived from the combustion of biomass resources such as rice husks and bagasse. As CircuLite has a specific porous structure and ion exchange capacity, it has multiple potential applications such as environmental purification, as an adsorbent of pollutants for wastewater and exhaust gas treatment, or as a soil conditioner. The price of CircuLite is competitive with active carbon.

The first CircuLite production was implemented using fly ash in a Japanese thermal power plant for 10 years. Overseas, a power station treating rice hull as boiler fuel has produced ash and synthesized 1,000 tons/year of CircuLite for 6 years. The product is currently supplied in Taiwan, Japan, and China.

www.sion66v.com/

Mr. Shunsuke KUMAGAI sean@sion66v.com

TBM Co., Ltd. (Times Bridge Management)

CIRCULAR ECONOMY

LIMEX: Alternative for Plastic and Paper

LIMEX is a new material with potential as an alternative to plastic and paper. It mainly consists of limestone ($CaCO_3$), which can be procured worldwide. The manufacturing process of LIMEX requires less oil/water and reduces CO_2 emissions compared to paper or conventional petroleum-derived plastic. The chemical and physical properties of LIMEX are comparable or superior to general paper/plastic.

More than 5,300 companies/organizations have introduced LIMEX products in Japan, with the technology being applied to products such as bags, business cards, menu tables, and booklets. Manufacturing of LIMEX products is expanding not only in Japan but also in China, Vietnam, and elsewhere.

tb-m.com/en/limex/

Ms. Sae ISHIHARA s-ishihara@tb-m.com

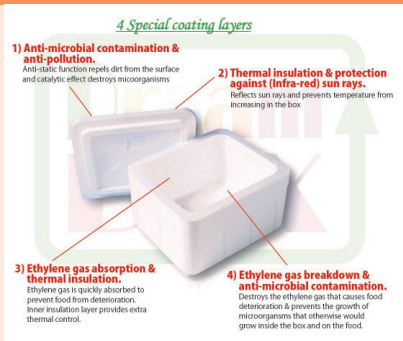
AGRIBUSINESS TECHNOLOGIES

ef-initials Co., Ltd.
Multilayer Nanotechnology Coatings

FOOD VALUE CHAIN
(Human health technologies: public health)

Ef-initials applied its technology in industrial coatings to create the Dream Box, a low-cost and environmentally-friendly transportation box with a multilayer nanotechnology coating inside to keep food or medicine cool, fresh, and contaminant-free.

One of the technologies featured in the Dream Box, the ethylene gas control system, was commercialized by a logistics company in Korea. A Japanese company has also applied Dream Box technology to develop a photocatalytic antimold film.



Mr. Katsuhisa Max SHIMIZU ef.initials.jp@gmail.com

Ele Mag Lab. Co.,Ltd
Wi-free: High Voltage Generator to Maintain Freshness

FOOD VALUE CHAIN

Wi-Free helps prevent rotting and maintain the freshness of products by applying an electrostatic field at a low-temperature range (10 °C to - 10 °C). It stabilizes the food supply, produces high-quality frozen food products, and allows extended storage. This technology can generally be used for 20ft or 40ft containers.

The product has been installed in containers owned by a marine transportation company in Vietnam. In 2018, 20 units were installed in railway containers of Japan Freight Railway South-Kanto Logistics Company by using subsidies from the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) for low-temperature transportation.

www.ostec.co.jp/

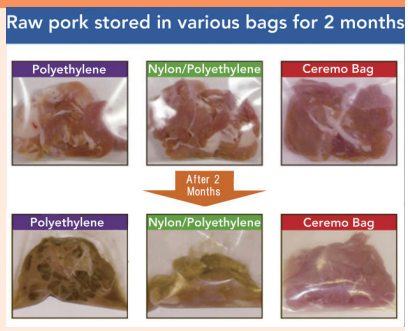
Mr. Kouichi OMURA k.omura@elemag-lab.co.jp
Mr. Ryu SHIOURA r.shioura@elemag-lab.co.jp

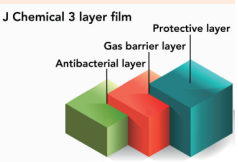
J-Chemical Corporation
Functional Plastic Film “Proguard”

FOOD VALUE CHAIN
(Environmental technologies: circular economy)

In sufficient access to essential resources, limited infrastructure, and inadequate storage in developing countries can result in significant post-harvest losses which threatens food security. “Proguard” offers a transformative solution to these challenges. Proguard is a plastic film for packaging with various functions to enhance the shelf life of food products and drinking. It is effective not only for local food security but also offers a reliable solution for export and transportation, addressing the challenges of preserving food during transit.

The properties of Proguard can help developing countries opens new business opportunities in agricultural, livestock, and fishery products. The film is composed of three laminated layers that possess different functions, with antimicrobial agents and antioxidants included in the innermost film at a certain ratio, which adds several benefits that cannot be achieved by a single film.





https://www.j-chemical.jp/

Mr. Hidemichi TAKANASHI h-takanashi@j-chemical.jp

KANRYU INDUSTRY CO.,LTD.

FOOD VALUE CHAIN

Compact Rice Husking & Milling Unit with Pre-cleaner, Destoner and Moisture Meter: Skeleton A-1, TS-05, ST102S/ST122 and TA-5

Rice is often contaminated with foreign substances such as soil lumps, straws, dead insects, rat droppings, and pebbles in developing countries. This contamination not only jeopardizes rice quality but also poses a threat to machinery, escalating maintenance costs and diminishing operational efficiency for small-scale farmers. This technology is engineered to address these issues and foster new business and trade opportunities by completely removing foreign substances and producing high-quality polished rice. This Rice Husking & Milling Unit comprises a set of machines designed to polish paddy into high-quality rice after threshing. The unit includes a pre-cleaner (TS-5), rice husking & milling machine (A-1), two types of destoners (ST102S or ST122), and a moisture meter (TA-5).

https://kanryu.com/en/

Mr. Shuichi KONDOH sk@yoa-africa.co.jp

Kett Electric Laboratory Co. Ltd.

FOOD VALUE CHAIN

Accurate Moisture Tester for Various Grains and Seeds

Kett provides compact and precise testers based on international standards to measure the moisture of grains such as rice, wheat, corn, soybeans, coffee beans, and cacao beans. These moisture testers enable quality control of grains (prevention of mold formation during storage, prevention of quality deterioration due to over-drying) for fair business transactions based on objective values following international standards. The company has developed two types of grain moisture testers: electrical resistance type and capacitance type. The mill equipped with the tester crushes the grain for analysis.

Both electrical-resistance and capacitance-type analyzers have been sold worldwide for the moisture measurement of various grains.

www.kett.co.jp/english/

Mr. Ryosuke TAKAHASHI ry-takahashi@kett.co.jp

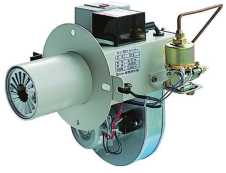
KIHARA WORKS Co., Ltd.

FOOD VALUE CHAIN

Food Dehydrator with DDS (Dual Drying System)

Kihara's Dual Drying System features double temperature control in the dry bulb and wet bulb to keep identical humidity inside the dehydrating unit. This product has been shown to reduce fuel consumption by 70% compared to conventional dehydrating technology when drying shiitake mushrooms. Simple button operation allows full automation to produce the best quality dried foods regardless of the operator's knowledge and experience.

Over 2,000 units of the SM / F / FS food dryer series have been sold in 10 years. Overseas markets in the last 10 years have included Russia, Thailand, Sri Lanka, Indonesia, Republic of Korea, China, Lao PDR, and Vietnam.



https://www.kiharaworks.com/en/

Mr. Toshimasa KIHARA toshimasa-kihara@kiharaworks.com

MARS Company Inc.

FOOD VALUE CHAIN

Sea Snow: Special Ice Maker from Salty Water for Fish Preservation

The sea snow produces snow-like ice from seawater or salty water. It keeps fishery products fresh by storing products refrigerated at -1°C with 1% salt concentration, which is almost identical to the fluid inside fish bodies. It also helps to prevent scratches and damage to the fish bodies during delivery. Moreover, it helps water conservation by using seawater instead of tap water, contributing to reduced running costs.

The sea snow has already been used in the Republic of Korea to maintain the freshness of common dolphinfish. It is challenging to retain freshness, especially on fishing boats and at fishing ports.

www.mars-company.jp/
Mr. Motohiko SATO motohiko.satoh@mars-company.jp

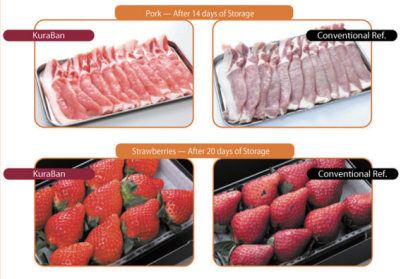
MARS Company Inc.

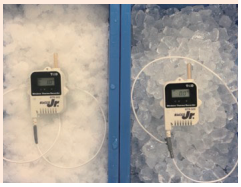
FOOD VALUE CHAIN

Kuraban: Unique Refrigerating Machines With Supercooling Technology for High-Quality Food Preservation

Kuraban provides a significant advantage in refrigeration technology, enabling fishery and agricultural products to be kept fresh for a long time. By applying a particular electric field in the refrigerator using the N-Te-Fe system, it is possible to carry out refrigerated storage for an extended period without freezing the food even when it is below its freezing point, as well as performing antibacterial and oxidation control.

The equipment is operating in various places such as hotels, restaurants, and butcher shops in Japan and four other countries.





www.mars-company.jp/
Mr. Motohiko SATO motohiko.satoh@mars-company.jp

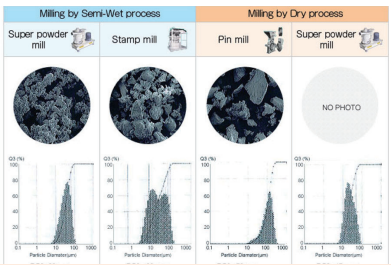
NISHIMURA MACHINE WORKS CO., LTD.

FOOD VALUE CHAIN

Rice Flour Making Machine and Semi-wet Process Technology

Nishimura's machine technology has a long history of making rice flour as a substitute for wheat flour, using a semi-wet and airflow method to convert rice into flour without compromising the quality of the rice. It aims to improve the income of local rice producers by effectively using their rice and promoting the use of rice flour as a substitute for wheat flour, which helps to revitalize local economies.

The product has been widely used in Japan and Asian markets such as Thailand, Vietnam, Myanmar, Taiwan, and the Republic of Korea.



www.econmw.co.jp
Mr. Motoki NISHIMURA nmoto@econmw.co.jp

TAIKI SANGYO CO., LTD.

FOOD VALUE CHAIN

Electric Food Dryer

Taiki Sangyo's electric dryer has many advantages compared to a dryer using kerosene or gas as a heat source: less CO2 emission, lower running cost, less regular maintenance, and many fewer failures than oil-powered dryers. The company can provide a dryer with throughputs exceeding 100 kg/batch. Even if a power outage occurs, the original control algorithm automatically restores the same program.

Electric dryers have been sold in ASEAN countries, Sri Lanka and the US. In Sudan, with the support of JICA, the company has supplied more than 20 units to preserve surplus harvested onion. As a result, local women's union members could produce and sell dried onion products.

www.taikisangyo.co.jp/english/

Mr. Soichiro YASUHARA yasuhara@taikisangyo.co.jp

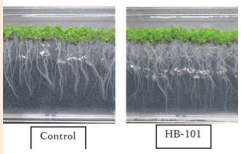
FLORA Co., Ltd.

PRODUCTION ENHANCEMENT

HB-101: Plant-activating Agent Made From Natural Organic Raw Materials

Natural Plant Vitalizer HB-101 is an aqueous solution that promotes the growth of plants by increasing their vitality. Its positive effects on improving crop yields and quality have been demonstrated in cultivation tests at many research institutes and agricultural sites worldwide. HB-101 is made from natural cedar, Japanese cypress, pine, and plantain plants. The product is suitable not only for conventional farming but also for organic farming. With the intention of improving crop productivity it is expected to ensure a stable food supply and increase farmers' income.

HB-101 is registered with the Organic Materials Review Institute (OMRI) in the US and is widely recognized in Japan as a vitalizing solution suitable for organic farming.



https://hb-101.com

Mr. Tomoaki KATO / Mr. Yoshiyasu KAWASE t-kato@hb-101.co.jp

FUMIN Co., Ltd.

PRODUCTION ENHANCEMENT

MR-X: Agricultural Materials for Environmental Protection

MR-X is a pH 2.7 solution extracted from minerals. As an activator of phosphoric acid it enables plants to increase their absorption of the acid while reducing crop disease. Consequently, less agricultural chemicals and phosphate fertilisers need to be used, improving quality and yields. It can also prevent the widespread groundwater contamination caused by excessive usage of less-effective phosphate fertilizers, nitrogen fertilizers, herbicides, and agricultural chemicals.

Some 4,000 litres of MR-X were sold to ZEN-NOH Niigata, 150 litres to ZEN-NOH Yamagata, and 1,000 litres to ZEN-NOH Fukushima in 2018.

www.fumin.jp/index_en.html

Mr. Katsuo YAGISAWA k-yagisawa@fumin.jp

JAPAN CONSERVATION ENGINEERS & CO., LTD.

Fujimin: Fulvic Acid Extract as Biostimulant for Plant Growth

PRODUCTION ENHANCEMENT (Agribusiness technologies: adaptation to climate change)

Fujimin is an enriched fulvic acid extract made from organic substances. Japan Conservation Engineers has developed a mass-production method since fulvic acid exists only in trace amounts in nature. Fujimin can promote the activation of photosynthesis, soil agglomeration, buffering of soil pH, desalination of soil, and other functions derived from its chelating effect. As the product is a concentrated solution, it should generally be diluted with water 500 times.

Some 2,000L of Fujimin was used on farmland in China. For greening purposes, 100L was used both in Bhutan and Taiwan. Since 2019, the company has participated in JICA's disseminating survey in Paraguay, where 2,300L of Fujimin has been applied on farmland.

www.jce.co.jp/en/
Ms. Kazuyo YOSHIDA green@jce.co.jp

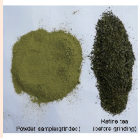
KAWASAKI KIKO CO., LTD.

Tea Ingredients Analyzer

PRODUCTION ENHANCEMENT

The Tea Ingredients Analyzer utilizes near-infrared spectroscopy, simultaneously measuring the main tea components in one minute. Anyone can easily measure tea ingredients by using a dedicated grinder and setting a powdered sample in the analyzer. The overseas sales price is 5.0-5.5 million JPY. To maintain the measurement accuracy, periodic accuracy adjustment (calibration) is required once every several years.

More than 10 units of model GTN-C7 for roasting green tea have been successfully introduced in China and Taiwan. The equipment has also been introduced in Sri Lanka, where Kawasaki Kiko was adopted for the JICA Verification Survey project.



www.kawasaki-kiko.co.jp/eng/
Mr. Hiroya SHIMURA h-shimu@kawasaki-kiko.co.jp

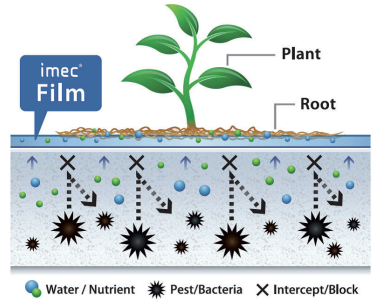
Mebiol Inc.

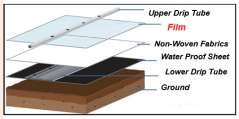
Sustainable Agriculture through Film Farming

PRODUCTION ENHANCEMENT (Agribusiness technologies: adaptation to climate change)

Imec is a film made of hydrogel for growing vegetables using less water. Using this method, agriculture can be carried out virtually anywhere — even on desert land or concrete. The film eliminates soil contamination that can negatively impact crop productivity and quality.

Imec was introduced in Japan in 2008. Over 330,000 of Imec is being used and the amount is still expanding. The film enables the production of high-quality tomatoes in challenging environments such as areas devastated by the 2011 tsunami in Japan, the suburbs of Shanghai where soil contamination concerns exist, and the desert areas of Dubai.





www.mebiol.co.jp/en/
Dr. Hiroshi YOSHIOKA yoshioka@mebiol.co.jp

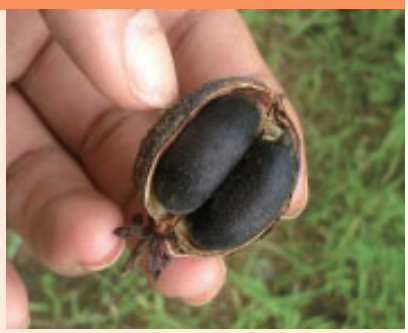
Nippon Biodiesel Fuel Co., Ltd. (NBF)

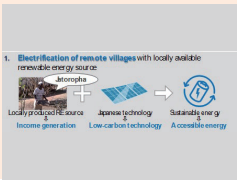
Rural Energy Supply With Jatropha

PRODUCTION ENHANCEMENT (Energy technologies: renewable energy)

The offered technology package includes cultivating energy crops (Jatropha) and fuel production. Jatropha fuel can substitute fossil fuels across multiple applications, such as agricultural machinery and maize mills. The model provides residents with improved access to affordable energy and an opportunity to become energy producers.

Through the sales of Jatropha seeds and saplings to a major Japanese petroleum company and machinery manufacturers, Nippon Biodiesel has achieved revenues of about US$0.8 million. The company has been supplying fuel in Japan for 2 diesel generators at local shops in rural villages and 20 maize mills. A Mozambican mobile phone network operator has also been supplied with fuel for combustion tests.





https://nbf-web.com/en/top/

Mr. Makoto GODA makoto_goda@nbf-web.com

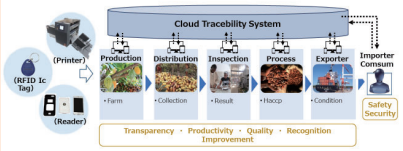
Shinmei Co., Ltd.

Food Traceability Technology Utilizing QR Code, RFID IC Tag, and Printer

PRODUCTION ENHANCEMENT (Agribusiness technologies: food value chain)

Shinmei's direct thermal printer provides automation and labor savings for printing, labeling, and package work. In addition to printers, the company can provide traceability systems by printing IDs on items such as QR codes and IC tags, which enable the tracking of an item's production sequence, quantity of stock, purchase destination, and customers. This helps improve the safety, quality, and reliability of food/raw materials and reduces costs and waste.

Shinmei has delivered its printers to 4,000 users, and the traceability system has been introduced in several Japanese businesses.



www.co-shinmei.com/en/

Mr. Manabu KAYAMA manabu.kayama@co-shinmei.com

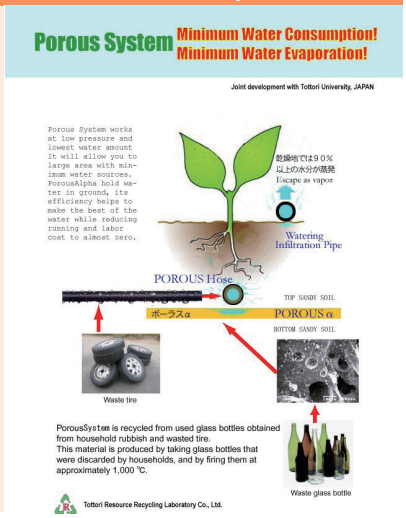
Tottori Resource Recycling Inc.

Porous Alpha

PRODUCTION ENHANCEMENT (Environmental technologies: circular economy)

Porous Alpha is a sustainable, economical product made from waste glass bottles and used rubber tires. This system has many pores through which water seeps out directly and very slowly, supplying water to plants and rendering water control precise and effective. Porous Alpha results in the retention of a significant water content in the soil.

The Tottori University Arid Research Center in Japan has evaluated the effect of porous layers on water preservation in soil. This system has already been implemented successfully by the Institut Supérieur de l'Enseignement Technologique (ISET) in Mauritania. In 2017, the company established a local subsidiary to promote Porous Alpha and completed several projects.



www.t-rrl.jp/en/overview/

Ms. Mai NAKAI nakai@t-rrl.jp

AGC Inc.

F-CLEAN™: High Durability Film for Greenhouses

ADAPTATION TO CLIMATE CHANGE
(Energy technologies: energy saving and energy storage)

F-CLEAN™ is a highly durable film for greenhouses that allows users to grow high-quality and high-value-added crops within various applications. The film has a low surface tension, allowing dirt to be washed away more readily by rain and snow. There are different types of F-CLEAN™ films for various applications.

Since 1985, 4,000 ha of F-CLEAN™ has been sold. Projects have varied widely in size, from 300 m2 to 200,000 m2. The film has been installed in over 20 countries, including Guatemala, Russia, and Egypt.

www.agc.com/en/
Mr. Masaaki OKABE masaaki.okabe@agc.com

SPEC Company Limited

Soil Hardening Agent STEIN: Paving the Way for Improved Connectivity and Resilience in Developing Countries

ADAPTATION TO CLIMATE CHANGE
(Disaster technologies: disaster prevention and preparedness)

STEIN, a construction material developed in Japan in 1975, provides a valuable solution for building roads and irrigation facilities by compacting soil. Since its introduction, it has been used to construct unpaved roads in Japan, benefiting 1,500 sites. STEIN is made from a mixture of 5% STEIN elements, consisting of 27 types of inorganic substances and ordinary Portland cement. Notably, STEIN elements contain no harmful substances and are environmentally friendly. Utilizing STEIN for surface layer construction with local soil in underdeveloped areas offers advantages such as reduced material inputs and initial costs, resulting in all-weather passable roads. It enhances the lives of people in areas with heavy rainy seasons. Furthermore, STEIN enables the construction of reservoirs and waterways that can hold rainwater and other water sources for irrigation.

http://spec-env.jp/en.html
Ms. Shiyo KAMIBAYASHI kamibayashi@spec-env.jp

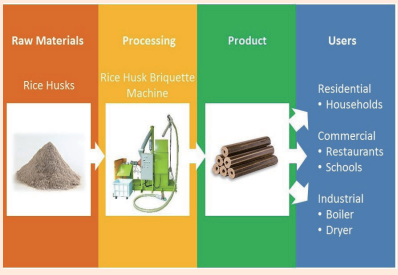
Tromso Co., Ltd.

Rice Husk Briquette Machine

ADAPTATION TO CLIMATE CHANGE
(Environmental technologies: circular economy)

Tromso's rice husk briquette machine can produce fuels by using often-underutilized rice husks. The machine grinds and compresses rice husks with heat, producing solid briquette fuels without using binders or adhesives. These briquettes can be used as firewood or charcoal substitutes, contributing to forest preservation.

The machine can produce 120kg of solid briquette per hour (approximately 1 ton in 8 hours). Tromso has manufactured rice husk briquette machines since 2007 and already sold more than 70 machines. Some 15 machines have also been exported to Tanzania, Nigeria, China, and Vietnam.



https://tromso.co.jp/en/
Mr. Masaaki UESUGI info@tromso.co.jp

EBARA CORPORATION

Model GS Single-Stage End Suction Pump

WATER RESOURCE MANAGEMENT (Human health technologies: public health)

The model GS is a suction pump used in various applications that can address water distribution and access issues in developing countries, including transporting liquids used in construction equipment, factories, and agriculture. The model GS achieves world-class high efficiency and complies with international standards, making it possible to solve water problems that vary by country and region and minimize energy usage.

Model GS series is the global standard model that combines the knowledge and technology which Ebara Corporation has brushed up for many years as a comprehensive pump manufacturer. Pumps produced by Ebara Corporation cover a wide range of usages, from freshwater to chemical liquid. They also ensure both reasonable and economical quality.

* Sales not available in Japan

https://www.ebara.co.jp/en/

Mr. Yoichi KAWANISHI kawanishi.yoichi@ebara.com

FREE & CO.

POTORI: Air-to-Water Technology

WATER RESOURCE MANAGEMENT (Human health technologies: public health)

POTORI is a solution to water scarcity and contamination challenges in developing countries. This innovative system extracts moisture from the air, bypassing the need for traditional water sources like rivers or groundwater. Through a unique process, POTORI converts air moisture into clean, drinkable water, offering a sustainable and efficient alternative for communities facing water shortages.

The POTORI machine can remove dirt and dust from the air through a cartridge filter and create water by forcibly condensing the moisture in the air using a heat exchanger. Clean drinking water can be obtained through three water filtration filters and repeat the cycle using their unique technology. The machine is available in 3 sizes and can provide 50L, 200L, or 1,000L of water per day, depending on the machine installed.

https://freerf.biz/business/

Mr. Soichiro TABO info@freerf.biz

Nippon Basic Co., Ltd.

Desalination of Seawater for Drinking

WATER RESOURCE MANAGEMENT (Human health technologies: public health)

Using a gasoline engine, the Desaliclean D9000 can produce 500 litres of clean water per hour from seawater or brackish water. An electrical motor-driven Desaliclean is also available. It has a dry weight of 120 kg, measures W 550 x D 1,500 x H 780 mm, and can be carried by 2 persons or moved by rolling on its casters.

The Desaliclean has been used in Japan and Bangladesh. New business is underway in Nigeria.

nipponbasic.ecnet.jp/en/

Mr. Yuichi KATSUURA nipponbasic@ceres.ocn.ne.jp

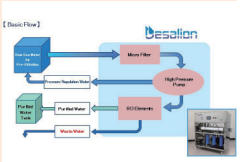
Sanso Electric Co., Ltd.

Desalion: Water Treatment Facility

WATER RESOURCE MANAGEMENT (Human health technologies: public health)

Desalion is desalination apparatus based on the reverse osmosis (RO) method, which treats seawater to produce clean and drinkable water. The Desalion concept meets WHO guidelines for small water supply systems. The equipment is portable and highly durable and can supply highly reliable drinking water.

Sanso Electric has already sold the equipment to Hyogo Prefecture in 2019, and expects to sell one unit each in Vietnam and the Philippines.



www.sanso-elec.co.jp/en/

Ms. Kumiko HORIBE k-horibe@sanso-elec.co.jp

TERAL INC.

DC Solar Pump System

WATER RESOURCE MANAGEMENT (Energy technologies: renewable energy)

TERAL has developed a solar pump that directly utilizes direct current (DC) power generated by solar panels without any intermediate conversion into alternating current (AC). The pump offers a built-in automatic control function and protection device. Its features include low cost, high durability, and simplicity of construction work owing to the direct utilization of DC power. The technology can be used in rural areas at low cost.

TERAL installed two solar pump units in Senegal and conducted an operation test. From 2019, this system will be installed at 16 sites in Senegal for a further verification survey.

www.kawasaki-kiko.co.jp/eng/

Mr. Shigemi MINAGOME minagome00@teral.co.jp

Tohatsu Corporation

Electronically Controlled 4-Stroke Fuel Injection Systems

WATER RESOURCE MANAGEMENT (Disaster management technologies: disaster emergency response)

Tohatsu's portable fire pump has been developed as a quick and first response for building and brush fires. The superior portability & lightweight properties can maximise the working efficiency. Compared to standard pumps, CO emission is lowered by 43%, and HC and NOx emissions by 90%.

Production started in 2006, and several thousand units have been delivered to national fire agencies globally, including Japan, China, Russia, Thailand, Singapore, Indonesia, Pakistan, and Turkey.

www.tohatsu.co.jp/en/

Mr. Genki TAMURA bousaiex@tohatsu.co.jp

TOTETSU MFG. CO., LTD.

WATER RESOURCE MANAGEMENT

Rainwater Harvesting and Underground Storage

Totetsu's system, equipped with a waterproof underground tank made of plastic units and waterproof sheets, removes 99.5% of contaminants and is resistant to earth pressure and earthquakes.

The company has installed 100 underground tank units in the last 3 years and 30 purification system units in the last 2 years. This system is valued as a reliable technology in Japan.

www.totetu.com/

Mr. Seiichiro TAKAI seiichiro.takai@totetu.com

Waqua Inc. (Former: Y's Global Vision, Inc.)

WATER RESOURCE MANAGEMENT (Human health technologies: public health)

Compact Desalination Device

Waqua Inc. (formerly Y's Global Vision Inc.) created a compact-sized desalination device called MYZ Series™ that is lightweight, small and portable for use on construction sites and cramped remote areas. It's also ideal for emergencies where clean drinking water is imperative. Waqua Inc. specializes in manufacturing and selling water purification machines.

The company's latest offering is the MYZ Series - portable desalination machines that can purify seawater and other contaminants such as Metal, Arsenic, and harmful chemicals and remove 99.99% of viruses and bacteria. This desalination machine is in accordance with Japan's Ministry of Health, Labour, and Welfare tests for safe drinking water. There are many different sizes, depending on the needs of the user. The typical installation type is the E-60 (capable of producing 60 litres of safe and good-tasting fresh water per hour), with larger versions available at 250 litres.

https://waqua.com/

Mr. Yoshifumi YANASE y.yanase@waqua.com

HUMAN HEALTH TECHNOLOGIES

Be-A & ITOCHU CORPORATION

PUBLIC HEALTH (Environment technologies: circular economy)

Air Light Shorts (Female Absorbent Underwear)

In developing countries, especially landlocked ones, the cost of transportation poses a significant challenge, making it difficult for women to access menstrual products during their period. There are women who are unable to attend school during menstruation, leading some to drop out and give up on their dreams. This absorbent underwear is an underwear designed to be worn during menstruation, capable of absorbing menstrual blood. Since it can be used repeatedly, it offers a solution to the challenges faced by menstruating women. By constructing the absorbent layer using a 7-layer structure with the following materials, it quickly absorbs and disperses liquids, preventing leaks. The sewing specifications are also designed innovatively to prevent leaked fluids from escaping by encasing them in waterproof fabric.

http://www.unido.or.jp/en/technology_db/12008/

Mr. Shohei YAMASHITA yamashita-sh@itochu.co.jp

CHARMANT INC.

PUBLIC HEALTH

Ophthalmic Medical Equipment Made by Metal Processing Technologies

Charmant's products, developed by applying metal processing technology and ergonomic design technology, are made of safe, low-allergy materials and strong titanium metal, to ensure long-term use. This means they can make a long-term contribution to developing countries. A face shield equipped with a high-performance film reduces the risk of infections at medical sites such as operating rooms in general hospitals and dental clinics where visual clarity is essential. The products have spread globally from China to the US, UK, France, and Germany. The company also expects to supply public procurement and private business products under contracts with local importers/distributors in emerging and developing countries.

https://www.charmant.com/e/home

Ms. Natsuko SATO HQ_Inventory@charmant.com

Hakuzo Medical Corporation

PUBLIC HEALTH

Push Swab: Medical Grade Swab with Instant Soaking of Disinfectant

The Push Swab addresses critical challenges in developing countries' healthcare facilities, including inadequate infrastructure, limited resources, and poor infection control practices. The Push Swab is an innovative packaging solution comprising single-use disinfectant and swab sticks. Its unique design allows users to soak the swab with disinfectant conveniently by pushing it forward before use. This eliminates the need to prepare disinfectant soaking swabs and saves time and space in hospital rooms before treatments. By mitigating the risk of contamination from improperly prepared or misplaced solutions, the Push Swab helps to reduce the spread of epidemics.

https://www.hakuzo.co.jp/

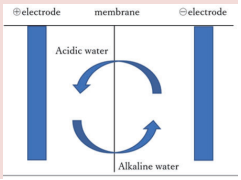
Mr. Seiji NISHINOME nishinome@hakuzo.jp

IGADEN CO., LTD.

PUBLIC HEALTH

CLEVER SYSTEM®: Chemical-free Alkaline Water Production Equipment

CLEVER SYSTEM® generates 90% alkaline water (pH 12) and 10% hypochlorite water by electrolysis of tap water. This unit can also produce water with the exact opposite properties (pH 2). The alkaline water is used for cleaning and sterilization, and the hypochlorite water is used for sterilization. Igaden is currently focusing on technology development in Japan and only travels overseas for technical research. However, through cooperation from trading companies and sales agency agreements in Japan, it has conducted overseas exhibitions in Vietnam, Thailand, the Philippines, Malaysia, and elsewhere.



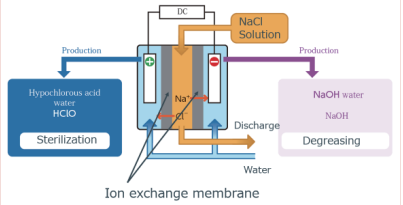
http://www.igaden.com/sp/index%20English.htm
Mr. Satoru IGARASHI idj@igaden.com

KANAZAWA INDUSTRY CO., LTD / AGC Inc.

PUBLIC HEALTH (Agribusiness technologies: food value chain)

Electrolyzed Water Generator Equipped with Ion Exchange Membrane

Kanazawa Industry and AGC have collaborated to introduce an electrolyzed water generator equipped with an ion exchange membrane. The special membrane produces acidic electrolyzed water with bactericidal hypochlorous acid through the electrolysis of aqueous salt solutions. The membrane, developed by AGC, is effective during electrolysis with its cation-filtering permeability and is composed of highly durable, chemical-resistant fluorinated resins. Kanazawa Industry's water generator produces both salt-free acid and alkaline electrolyzed water, removing unwanted substances through emulsification and making it suitable for implementation in food processing factories. Sales of the equipment in the Japanese domestic and international markets are 1.4 billion JPY and 100 million JPY, respectively. The number of units sold in 2016 was 2,300 and 600, respectively.



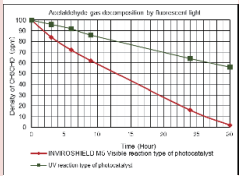
www.agc.com/en/
Dr. Masaaki OKABE masaaki.okabe@agc.com

MARUSYO SANGYO CO.,LTD.

PUBLIC HEALTH (Environmental technologies: pollution prevention and control)

Sustainable Inviroshield M5: Antimicrobial Coating

Inviroshield M5 is a photocatalyst coating that eliminates pathogenic microorganisms and helps reduce hospital infections. This facilitates a decrease in ALOS (average length of stay), which reduces medical expenditure and increases the availability of treatment to deprived patients in developing countries, ensures healthy lives, and promotes wellness for all. The coating agents can be systematically coated using conventional spray guns and air compressors. Central government and municipal hospitals in India adopted this bio-decontamination technology for 5 years. The results were significant in terms of reducing the infant mortality rate at Safdarjung Hospital (Central Government Hospital). AIIMS (All India Institute of Medical Sciences) is also adopting this technology.



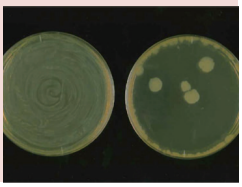
https://marusyosangyo.jp/en/
Mr. Takayuki YOSHIKAWA yoshikawa@marusyosangyo.jp

Nanatsubaki Inc. (Matsuzawa kawaraten Group)

PUBLIC HEALTH

SVI (Super Virus Inactivity) Light: Electrodeless Germicidal Lamp

The SVI Light can instantly sterilize air, water, and the surface of objects by irradiating various bacteria and viruses with ultraviolet C (UV-C) light derived from the electrodeless discharge. When disinfecting water, a small amount of ozone is generated and dissolved into the water, and this also has a bactericidal/anti-viral effect. The lamp can easily be attached to equipment such as pipes or air conditioners. UV-C electrodeless lamps have been installed in Brunei and the Philippines, and sales have been increasing.



https://en.7tsubaki.com/

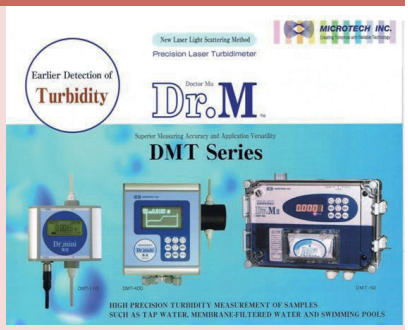
Mr. Takahiro MATSUZAWA info@yane119.net

MICROTECH INC.

PUBLIC HEALTH

Drinking Water Quality Analysis Technology

Microtech's technology monitors water quality to make sure that drinking water treatment systems work properly. It measures and analyzes turbidity, color, and residual chlorine in potable water. The technology is primarily used to monitor fiber membrane technologies as it can detect fiber break leakages overlooked by conventional detection and can find pathogens such as Cryptosporidium. Digitally displaying the processed liquid state in membrane filtration processes can contribute to better utility yields and cost savings. The technology has proven to be effective since 2004. Over 1,000 units are operational at public drinking water treatment plants all over Japan.



www.microtech.st/english/

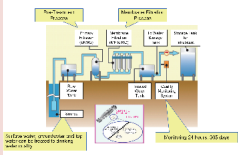
Mr. Yu KOSHIZUKA y-koshizuka@microtech.st

Mitsubishi Chemical Aqua Solutions Co., ltd.

PUBLIC HEALTH (Environmental technologies: pollution prevention and control)

On-Site Water Treatment System

Mitsubishi's small-scale, on-site water treatment and supply system utilizes existing water resources and treats the water to meet drinking water quality standards. This system combines a pre-treatment process and membrane separation technology to remove contaminants such as viruses, bacteria, anti-chlorine protozoa, iron, manganese, and arsenic. As of April 2019, more than 1,250 water treatment systems have been installed in Japan, and a few pilot systems in Kenya and Vietnam have also been operated.



www.mcas.co.jp/en/

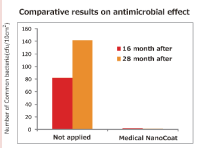
Overseas Business Support Dept. MCJP-MBX-MCAS_OBD_INFO@mchcgr.com

NascNano Technology Ltd.

Multifunctional Nano-coating Technology

PUBLIC HEALTH (Environmental technologies: pollution prevention and control)

NASC's nano-coating technology, MEDICAL NANO COAT, provides round-the-clock antimicrobial coverage without requiring daily maintenance. MEDICAL NANO COAT provides a preventive solution to combat hospital-acquired infections (HAI) and the transmission of infectious diseases in public areas. The product consists of two coating solutions. Anti-bacterial protection can be provided by simply applying the solutions to target surfaces with a clean cloth and then with a spray gun. Since 2010, this technology has been introduced at various locations in Japan, such as Tokyo and Kansai International Airports, municipal emergency medical treatment centers, city halls, subway transit systems, and food processing plants.



https://nasc-nano.com/service/medicalnanocoat/english.html

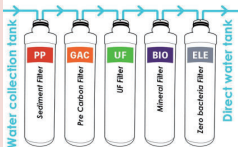
Ms. Ihoko TADA tada@nasc-group.com

NEW STANDARD'S Co., Ltd.

Sarastear®: AWG (Atmospheric Water Generator) with Ultra-efficient Condensation System

PUBLIC HEALTH (Agribusiness technologies: water resource management)

Sarastear® offers a practical solution in areas with insufficient water purification facilities, with its water-producing server that revolutionarily condenses and filters moisture in the surrounding air to produce clean drinking water. Moisture is collected via a strict filtration process, then condensed, stored, and transformed into drinkable water using a virus-removing five-filter system and deep ultraviolet LED. This water server filters the stored water every three hours to ensure a constant supply of fresh and clean water. Sales of Sarastear® officially began in Japan in 2018. Since then, over 300 units of Sarastear-neo20 (Home & Office Series) have been installed globally in countries including Nigeria, Kenya, Cote d'Ivoire, Malaysia, Singapore, Thailand, India, and China.



www.sarastear.com/en/

Mr. Kenichi TAKAHASHI info@newstandards.jp

Old Faithful Japan Co., Ltd.

Clean Move

PUBLIC HEALTH (Environmental technologies: pollution prevention and control)

Clean Move is an all-natural and multiple-purpose detergent for washing and cleaning objects such as tableware, clothing, buildings, cars, baby diapers, and bottles. It is cost-effective and easy to manufacture. The technical transfer costs 150,000 dollars, which includes a 3-day hands-on training session conducted in Japan, one manufacturing machine, and a complete set of equipment necessary for production.

of-j.com/index.html

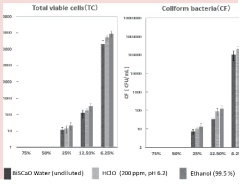
Mr. Kazuaki IMAMURA imamura@of-j.com

Plus Lab Co., Ltd.

BiSCaO® Sterilizing Agent Synthesized from Calcium Oxide: Calcined Scallop-shell with Advanced Manufacturing

PUBLIC HEALTH (Environmental technologies : circular economy)

Disinfectant BiSCaO Water is produced by automatically adding BiSCaO to chilled clean water and decanting the supernatant into a separate container with reduced air contact. It has superior disinfection and deodorization performance compared to other commercial heated scallop-shell products (HSSPs). Furthermore, BiSCaO Water is a potent reagent that overcomes the obstacles of being strongly alkaline, making it a material appropriate for disinfection against pathogenic microbes. The product has been used in various places in Japan and can also be used in other countries where water quality is low. Plus Lab can partner with manufacturers to develop a system to use BiSCaO or BiSCaO Water to purify water. The company will also work with importers in emerging countries to ensure efficient and correct handling.



https://pluslab-mi.co.jp/en/

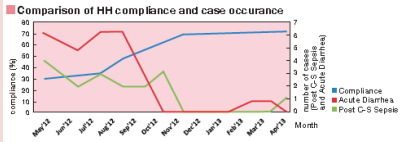
Mr. Shinichi SAWADA s.sawada@pluslab-mi.co.jp

Saraya Co., Ltd.

Alsoft V: Anti-Viral Alcohol-Based Hand Rub

PUBLIC HEALTH

Alsoft V is an alcohol-based hand sanitizer that is highly effective against a wide range of microorganisms, such as general bacteria, fungi, and non-enveloped viruses that are generally deemed alcohol-resistant. The product has proven effective against Ebola and the coronavirus and also meets the requirements of WHO's recommended prescription, making it well-suited for developing countries. To maximize awareness of hand hygiene in medical fields, hygiene instructors will be available to provide local consulting services. The high efficacy (>99.99%) of Alsoft V against enveloped and non-elevated viruses was proven in Germany. Alsoft V was the flagship product of Saraya's 2010 sales, and the company has been training hygiene instructors since 1989.



https://saraya.world/

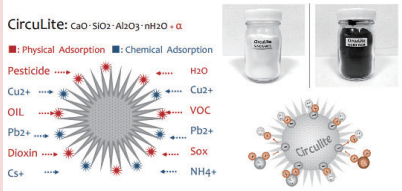
Ms. Tamaro Stephanie NAKAMURA nakamuratamaro@global.saraya.com

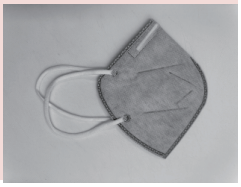
Sion Corporation

Anti-Virus/Microbe Porous Material and Applied Equipment

PUBLIC HEALTH (Environmental technologies: circular economy)

Sion has developed Circulite, an inorganic composite utilizing biomass ash waste. CircuLite is a powdered material with two main functions: a broad range of pore size distribution and ion exchange capacity. Its chemical characteristics can be changed by replacing exchangeable ionic charges by alkali metals. For example, CircuLite-Zn is synthesized by introducing zinc ions that have anti-bacterial and antivirus effects. CircuLite-Zn has been applied for hygiene improvement by kneading it in filter materials such as non-woven fabric. Masks made from non-woven fabrics with CircuLite-Zn have been produced and sold in Taiwan. Sion is planning to utilize this technology for air purification devices.





www.sion66v.com

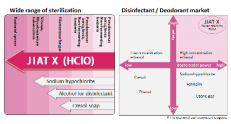
Mr. Shunsuke KUMAGAI sean@sion66v.com

Solar Wind Technology inc., KANKYO BUNKA KENKYUSHO Co., Ltd., and Aga Material Co., Ltd.

PUBLIC HEALTH

JIAT X: Long-lasting Disinfectant Manufactured from Hypochlorous Acid

JIAT X is an anti-bacterial and deodorant solution that supersedes alcohol and is perfectly harmless to humans and animals. The product uses a special method that enables its manufacture just by utilizing sodium hypochlorite (NaClO). It offers excellent functionality at a reasonable price compared to competitive products. Also available is a concentrate (around 600ppm of available chlorine), to be diluted before using. Monthly sales have exceeded 10,000 spray bottles. The potential market for JIAT X is also expanding to places where an unspecified number of people gather, such as public transportation, hospitals, and schools.



https://product.solarwindtech.jp/

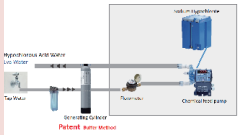
Mr. Tatsuhiko NAKAZAWA hikari@solarwindtech.jp

Terios-Tec Co., Ltd., and Parks Co., Ltd

PUBLIC HEALTH

Hypochlorous Acid Solution Manufacturing Equipment (Patented Technology: Buffer Method)

In response to the increasing demand for safe disinfectants, Eva Water, a hypochlorous acid (HOCL)-based sanitizer, was developed to provide a harmless, user-friendly, and cost-efficient solution for the improvement of global hygiene management. To generate the hypochlorous acid water, Eva Water is equipped with a pH buffer which facilitates ion-exchange reactions. To increase practicality, users can choose Eva Pot, a smaller version equipped with identical functionality. When water is available as a raw material, Eva Water can be generated without limits in terms of quantity or location. Eva Water has been used in nursing homes, schools, banks, and many other facilities within Japan, and its five manufacturing plants, including subcontract factories, are all located domestically.



www.teriostec.jp/en/

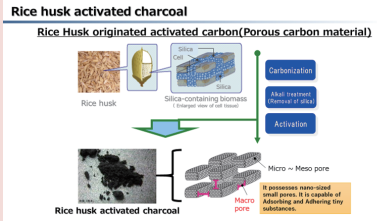
Mr. Yasuo OGATA y-ogata@teriostec.jp

Tromso Co., Ltd.

PUBLIC HEALTH (Human health technologies: circular economy

Welvina Series: Water Purifiers

Welvina is a water purifying device, equipped with a charcoal filter composed of rice husks, instead of the conventional coconut shell, to maximize its performance in removing water impurities. In comparison to its coconut shell counterparts, Welvina has higher porosity, resulting in a higher rate of impurity removal. Most notably, the device produces more silica components in the filtrated water, which are proven to enhance the support and self-recovery of the immune system, as well as provide minerals to the skin, hair, and body when consumed. As of July 2020, it is planned to introduce 30,000 Welvina units in Vietnam's Soc Trang province between 2020 and 2024. In Japan, approximately 2,500 units have been sold as of the same date.



https://tromso.co.jp/en/

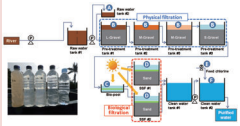
Mr. Yuichi YANAKA y_yanaka@tromso.co.jp

Yamaha Motor Co., Ltd.

Clean Water Supply System for Rural Areas

PUBLIC HEALTH (Environmental technologies: pollution prevention and control)

Yamaha's Clean Water Supply System is a water purification facility using slow sand filtration intended to provide rural residents with clean drinking water. As most rural areas are not yet connected to an electrical grid, a solar photovoltaic system is available within the same package to provide the power source. This system significantly contributes to improved sanitation and health conditions. The system has been operated since 2003. To date, 16 units have been installed in Indonesia and other ASEAN nations, and 27 units in Senegal, Madagascar, and other African countries. In Ethiopia, the company installed 1 facility in a project organized by UNIDO.



https://global.yamaha-motor.com/business/cw/

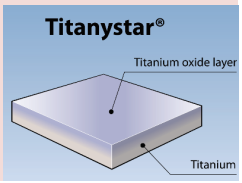
Mr. Masashi KANEMARU kanemarum@yamaha-motor.co.jp

Yield Co., Ltd.

Photocatalyst Titanystar: Utility TiO2 Catalyst

PUBLIC HEALTH (Environmental technologies: pollution prevention and control)

Yield Co. has developed a technology to clean undrinkable water into safe drinking water through the use of a photocatalyst. The photocatalyst provides excellent purification by decomposing and removing most harmful substances simply by receiving ultraviolet rays. Disinfectants for water, such as chlorine and ozone, become unnecessary, and chemical-free, clean drinking water can be provided. Sales in Japan since 2000 have reached a cumulative total of about 30,000. Overseas, a cumulative total of about 2,000 has been sold in France, UK, Russia, New Zealand, Singapore, Malaysia, India, and Taiwan since 2004.



www.yield-kyoto.com/en/

Mr. Yoshihisa ITOH itoh@yield-kyoto.com

AffordSENS Corporation

Vitalgram®: Patch Type Wearable Multi-Vital Sensing Technology for Health Monitoring

MONITORING AND DIAGNOSTIC EQUIPMENT

Vitalgram® is a microsensor to measure vital parameters concurrently. Once tied to the chest, it will continue sensing electrocardiogram (ECG/EKG), heart rate, respiration rate, core body temperature, inner temperature, and the body's motion and posture. It can also monitor ambient temperature, humidity, and atmospheric pressure. The product can be efficiently applied to health monitoring and emergency prevention for the elderly and operators engaged in high workloads. About 400 sets of Vitalgram® have been sold for 5 years. For monitoring purposes, automobile manufacturers used the product to evaluate the fatigue and drowsiness of drivers. Home appliance manufacturers evaluated the comfort of subjects by utilizing the product.

https://www.affordsens.com/

Dr. Kohei HIGUCHI k-higuchi@affordsens.com

ARKRAY Japan

The Lab 004: Blood Biochemical Analyzer

MONITORING AND DIAGNOSTIC EQUIPMENT

The Lab 004 is a blood testing device that screens kidney and liver functions of HIV and diabetes patients to monitor potential side effects from treatment drugs. Notably, its operational simplicity enables remote usage at mobile clinics, especially in areas where electricity supply is unstable, as the device is powered by a mobile battery or AC adaptor. Moreover, its dry biochemistry technology is well suited for environments with water shortages and the absence of drainage systems, making the device highly versatile and portable. The device was launched in February 2020, and its performance evaluation is planned in primary healthcare facilities in several sub-Saharan African countries.

www.arkray.co.jp/english/index.html

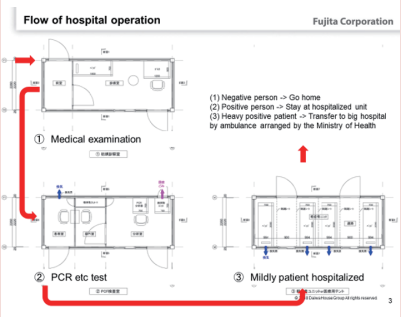
Mr. Hironobu YOSHINAGA afinquiry@arkray.co.jp, AGB-inquiry@arkray.co.jp

Fujita Corporation

Quick & Easy Hospital: Container Unit with Remote Supervision IT System

MONITORING AND DIAGNOSTIC EQUIPMENT (Human health technologies: public health)

With the rapid increase in demand for hospitalization units, Fujita has introduced a One-package Service medical unit built of 20ft containers, providing a highly accessible and mobile alternative to conventional isolation wards. The unit comes with a high-quality Japanese design prioritizing durability, simplicity, and availability; thus it is well suited for usage in developing countries. A remote supervising IT system (CONNET) is also installed to manage construction and is accessible from any WiFi-equipped environment through smartphones and tablets. The medical unit has been introduced in Mombasa, Kenya, and will be expanded to several other areas. The CONNET IT system has been introduced to countless construction sites with over 1,000 users.



www.fujita.com/

Mr. Eiji HIROTA eiji.hirota@fujita.co.jp

FURUNO ELECTRIC CO., LTD.

CA Series: Clinical Chemistry Analyzer

MONITORING AND DIAGNOSTIC EQUIPMENT

CA Series is a series of clinical chemistry analyzers that perform tests on whole blood, serum, plasma, or urine samples to determine concentrations of analytes to provide specific values which help diagnose and treat numerous diseases. The products realize a smaller minimum reaction volume than equivalent products, leading to reduced patient burden with a smaller amount of blood collection, lower water consumption and infectious wastewater generation due to lower usage of water for washing, and a more reasonable test cost by using a smaller reagent volume. The series also includes benchtop-type analyzers which can be installed anywhere, including at small facilities.

Furuno Electric manufactures the product series in various countries, such as Thailand, Vietnam, Indonesia, Malaysia, and Costa Rica.

https://www.furuno.co.jp/en/

Mr. Kenji KITAGAWA support.medical01@furuno.co.jp

Lequio Power Technology Corp. and Okinawa Medical Device Co., Ltd.

MONITORING AND DIAGNOSTIC EQUIPMENT

Portable Ultrasound Scanners

The two companies provide portable ultrasound scanners with high resolution, simple functions, and affordable prices. These devices and planned cloud learning services can directly contribute to promoting universal health coverage. The SyncView synchronized movie of probe handwork and ultrasound tomography makes it easier to check if scanning is being carried out at the correct position with the proper angle. About 500 devices have been sold both in Japan and overseas. During JICA's demonstration project in Sudan from 2015 to 2018, it was confirmed that midwives can adequately carry out ultrasound screening during antenatal care after simple training.

www.lequiopower.com
Ms. Naomi TAKARA takara@lequiopower.com

Techno Medica Co., Ltd.

MONITORING AND DIAGNOSTIC EQUIPMENT (Agribusiness technologies: production enhancement)

STAX-5 inspire: Portable Electrolyte Analyzer

STAX-5 inspire is a Point-of-Care Testing analyzer for in vitro diagnostic use by health care professionals. It enables the easy and rapid examination of cNa+, cK+, cCl-, cCa2+, cMg2+, pH, pCO2 (partial pressure of CO2), Hct (hematocrit) by using a disposable sensor card with only 10 microliters of blood. Besides medical use, it can be used for the measurement and quality control of fertilizer concentration in hydroponics in the agricultural sector. STAX-5 is the 4th generation of the company's electrolyte analyzers, marketed in 2014. Among developing nations, the product is exported to Afghanistan, Bangladesh, Egypt, India, Nepal, and Pakistan through sales agents.

www.technomedica.co.jp/t01/EnglishPage/index.html
Mr. SEO Overseas@technomedica.co.jp

Tokyo Boeki Medysis Inc.

MONITORING AND DIAGNOSTIC EQUIPMENT

BIOLIS 30i: Fully Automated Clinical Analyzer

BIOLIS 30i is an open system, compact benchtop design, fully automated analyzer for Clinical-Chemistry (e.g.: HbA1c), Immuno-Assay (e.g.: CRP), Drugs (TDM and DOA) and Coagulation (e.g.: D Dimer). The reaction cuvettes are semi-disposable (reusable). The Ion Selective Electrode (ISE) for Na+, Ca+ and Cl- is available as an option. The throughput is 270 tests/hour (with ISE, 450 tests/hour). It is suitable for routine operation in small hospital labs and back-up operation in mid-size hospital labs. As of December 2020, more than 800 units have been sold to hospitals mainly in Russia, the US, and ASEAN countries. The company is interested in expanding sales to sub-Saharan countries.

www.tb-medisys.co.jp/english/
Mr. Kazutaka NAKAMURA nakamura-k@tokyo-boeki.co.jp

DISASTER MANAGEMENT TECHNOLOGIES

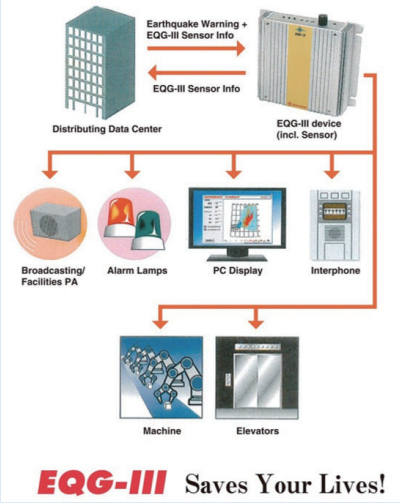
Challenge Co., Ltd.

DISASTER ALERT SYSTEMS

EQguard: Earthquake Sensor Alarm Device

EQguard has specialized software to distinguish between earthquakes and background noise generated close to the device, which prevents the issuing of erroneous alarms. The earthquake sensor alarm device issues an alarm in one of 11 selected languages: Japanese, English, Chinese, Korean, Indonesian, Persian, Turkish, Spanish, Portuguese, Russian, and Arabic. This device can display the seismic intensity of each observation point on the map in real-time. Control signals from the device can be issued to shut down chemical plants and nuclear facilities beforehand. EQguard can save people's lives and infrastructure.

Some 1,000 sets have been installed in Japan in locations such as schools, kindergartens, and hospitals. Overseas markets are Indonesia, Republic of Korea, Turkey, Romania, Ghana, and Kazakhstan.



http://challengego.co.jp/english.html

Mr. Kazuo SASAKI ksasaki@challlengego.co.jp

Matsushima Measure Tech Co., Ltd.

DISASTER ALERT SYSTEMS

Radar Type River Water Level Transmitter

The Radar Type River Water Level Transmitter is a non-contact type measuring instrument to be mounted above a river (no need to be submerged in the river water and therefore no risk of damage by the river conditions). Furthermore, it provides stable measurement without any influence from the weather conditions due to its electromagnetic wave principle. The MWLM series, with its high efficiency Microwave Integrated Circuit and signal conditioning system, realizes such stable continuous river water level monitoring even during typhoons, storms, or heavy rain.

In Japan, 50 transmitters have been successfully installed at domestic rivers. All have been working (measuring real time river water level) continuously 24 hours, 365 days a year without any fault.

https://www.matsushima-m-tech.com/english/

Mr. Kazuhito MAEDA info@matsushima-m-tech.com

TOKYO KEIKI INC.

DISASTER ALERT SYSTEMS (Agribusiness technologies: water resource management)

Non-Contacting Radar Level Gauge for Flood Disaster Management: KRG-10 / Hybrid Level Gauge HC-10

Floods pose a significant threat in many developing countries, often resulting in loss of life and property. Early warnings are essential for disaster preparedness, allowing people to evacuate flood-prone areas and implement appropriate countermeasures. Tokyo Keiki Inc.'s Non-Contacting Radar Level Gauge KRG-10 plays a crucial role in flood monitoring when integrated with warning systems or alarm triggers. Furthermore, urban areas in developing countries increasingly face the risk of inland flooding, including overflow from maintenance holes. The Hybrid Level Gauge HC-10 provides a practical solution by detecting water accumulation beneath maintenance holes and transmitting data to integrated systems. These systems can then initiate alerts and control measures, such as gate and pump management, to mitigate flood-related risks.

https://www.tokyokeiki.jp/e/products/measurement/

Mr. Shuntaro SAKAI overseas-sales03@tokyo-keiki.co.jp

GIKEN LTD.
Press-in Method (Piling Technology) With SILENT PILERTM

DISASTER PREVENTION AND PREPAREDNESS (Agribusiness technologies: adaptation to climate change)

SILENT PILERTM offers the advantage of low noise/vibration and compactness, so it can be used in constrained areas, such as over water, areas with restricted headroom, and construction sites alongside existing buildings. It allows the installation of piles without a temporary stage, and hence reduces the construction cost and period. The Press-in Method has been adopted in more than 40 countries worldwide including Senegal, Egypt, Bangladesh, Sri Lanka, Philippines, China, Singapore, Vietnam, Cambodia, Myanmar, Taiwan, Indonesia, Mexico, and Russia.

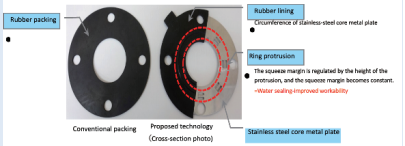
https://www.giken.com/en/
Mr. Takuya FUNAHARA project@giken.com

KYOWA INDUSTRIAL CO., LTD.
LSP: Reinforcing Joint Packing for Flanges

DISASTER PREVENTION AND PREPAREDNESS (Agribusiness technologies: water resource management)

LSP technology provides packing for connecting piping flanges. It combines packing with a specially structured stainless steel core metal plate covered with rubber and nuts and bolts to prevent loosening. It constructs water pipes that do not leak even if there is a bolt fastening failure (insufficient fastening torque) due to differences in workers' skills. It also has excellent workability and water leakage resistance and can improve earthquake resistance.

The product has been adopted by about 450 out of about 1400 companies nationwide.



https://www.kyowa-ind.co.jp/en/
Mr. Katsuya SHIMIZU katsuya@kyowakk.com

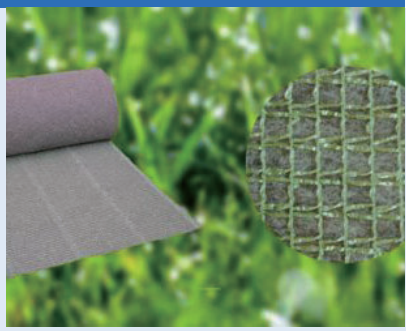
Takino Filter Inc.
Production Enhancement: Takino Filter Growing Mats

DISASTER PREVENTION AND PREPAREDNESS (Agribusiness technologies: adaptation to climate change)

Takino Filter greening mats prevent soil erosion for civil engineering projects aiming to repair and green the bare slopes generated during public works projects handling natural disasters, resource development, and infrastructure maintenance.

The mats improve the soil environment which is highly correlated with plant growth while simultaneously preventing soil erosion. This protects the soil and achieves lasting greening.

Takino Filter was sold in the Philippines (6,600m2), Honduras (2,600m2), and Taiwan (1,250m2). It has also been applied at the foot of mountains in Indonesia for environmental remediation.



https://www.takinofilter.com/index.html
Mr. Kenji FUJII fujii@takino.co.jp

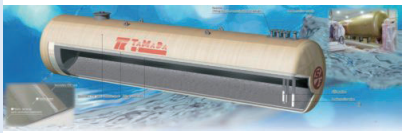
TAMADA CORPORATION

SF Double-Wall Tank

DISASTER PREVENTION AND PREPAREDNESS
(Environmental technologies: pollution prevention and control)

Tamada manufactures SF (steel and fiber reinforced plastic) double-wall tanks, which are underground tanks for storing liquid fuel and chemical products. These are designed for installation at gas stations and other facilities that store hazardous materials. Utilizing proprietary technology, the double-wall structure is comprised of a primary steel tank and a secondary FRP tank.

A number of countries, including Japan, require SF double-wall tanks as a part of their environmental conservation regulations. The technology has been shared in China, Thailand, Malaysia, and Vietnam.



www.tamada.co.jp/english/

Mr. Takamitsu AKAIKE takamitsu_akaike@tamada.co.jp, info-overseas@tamada.co.jp

Cold Storage Japan Inc.

Movable Freezer Warehouse For Establishment of Cold Chain

DISASTER EMERGENCY RESPONSE
(Agribusiness technologies: food value chain)

The movable freezer warehouse not only operates on utility power supply (100V to 260 V), but can also be used off-grid with its solar panels and batteries. The on-board battery can be used for purposes other than cooling (e.g., charging microwave ovens and cell phones). This means we could use cold storage anywhere you want, such as rural area, remote island or disaster area.

A cold chain system can be introduced quickly and at low cost to areas that did not have a well-developed cold chain to effectively reduce food loss, improve the hygiene of stored food, enable the preservation and transportation of some distinct local ingredients and introduce them to the global market. The low-temperature warehousing can also store vaccines and medicines, which will ultimately enrich the life and improve the living conditions of the people.

https://www.cold-storage.jp/

Mr. Zimeng Zhang lucas@cold-storage.jp

OOHASHI Co., Ltd.

Durable Construction Temporary Road Mats

DISASTER EMERGENCY RESPONSE
(Environmental technologies: circular economy)

Oohashi collects low-density polyethylene covering from discarded electric cables and reproduces it as high-density polyethylene plates called Repy Board®, which have excellent mechanical properties. Repy Board® offers ideal solutions for the construction of temporary roads to support vehicle traffic and farmers' access to markets in rural areas. A temporary helipad, HELIBOARD® can be organized by the combination of Repy Boards® in a couple of hours.

Some 4,000 of Repy Board® has been installed in Thailand and Vietnam. In Japan, 5 units of HELIBOARD® have been supplied to the Ministry of Land, Infrastructure, Transportation and Tourism (MLIT).

www.oohasi.co.jp/en/index.html

Dr. Takeo SHIONO shiono@oohasi.co.jp

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United Nations Industrial Development Organization (UNIDO)
Investment and Technology Promotion Office (ITPO), Tokyo

UNU HQs Bldg. 8F, 5-53-70, Jingumae,
Shibuya-Ku, Tokyo 150-0001 Japan

Tel: +81-3-6433-5520 Fax: +81-3-6433-5530

www.unido.org

itpo.tokyo@unido.org

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