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***Medio Ambiente:
Tecnologías Ambientales***

Technology Offer

Low-cost, miniaturised, multi-parameter sensor arrays for online condition monitoring of water and soil

Summary

A Cypriot SME active in the area of condition monitoring is in the process of developing a low-cost, multi-parameter sensor array, featuring several advantages which provide the opportunity for use in harsh environments where high density is important, like soil but can also operate in lakes, rivers or water networks. The company is looking for research cooperation agreements for development of a prototype or financial agreement partners to enable it to continue its research.

Creation Date 07 April 2015
Expiration Date 16 July 2016
Reference TOCY20150302001

Details

Description

The sensor array is based on Thick-Film Technology using screen-printing techniques. The electrochemical sensor's operation is based on specialised material selection which is selective and responsive to the specific parameter interested while conductivity sensor is based on the AC 4 electrodes method.

This sensor array has been lab tested in aqueous solutions and various soil types with results proving the theory and the operation.

Due to the simplicity of the electronics required for this array, everything can be incorporated into a single handheld probe for low cost in field water or soil quality measurements. Being of low cost the array can be used in dense sensor networks without significantly increasing the cost.

The Cypriot SME which is active in the area of condition monitoring prototyping, is a newly established company with links in several EU countries as well as global connections. The company is looking for funding from investors as strategic partners to finalize the array into a working prototype via financial agreements or partners to collaborate with and share research activities via research cooperation agreements.

Advantages and Innovations

Multisensor array can monitor pH, dissolved oxygen, temperature and conductivity. pH measurements are in the range of 2-12, dissolved oxygen sensor's electronics can be adjusted to the range required but typically 0-15 ppm, temperature sensor is also adjustable to the required range. As the range decreases the resolution increases up to a limit of about 0.1 oC. Conductivity range can also be adjusted depending on the requirements with a minimum limit of about 10 µS/cm.

The sensor array incorporates all sensors on a single substrate and can be miniaturised.

This was designed as a low cost, robust and rugged multisensor array that can be used with

very simple and inexpensive electronics.

Stage of Development

Under development/lab tested

IPR Status

Secret Know-how

Keywords

Technology

01003023	Environmental and Biometrics Sensors, Actuators
07001007	Precision agriculture
09001009	Sensor Technology related to measurements
10002010	Remote sensing technology
10002011	Soil and Groundwater Pollution

Market

03007002	Other measuring devices
03007003	Other analytical and scientific instrumentation
08002002	Industrial measurement and sensing equipment
08004001	Air filters and air purification and monitoring equipment
08004003	Water treatment equipment and waste disposal systems

NACE

M.72.1.9	Other research and experimental development on natural sciences and engineering
M.74.9.0	Other professional, scientific and technical activities n.e.c.

Partner Sought

Type and Role of Partner Sought

Strategic partner to assist with the development of the technology through investments and financial agreements or partners to collaborate with and share research activities via research cooperation agreements.

Type and Size of Partner Sought

SME 11-50, University, Inventor, R&D Institution, SME <10,>500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

- Financial agreement
- Research cooperation agreement

Technology Offer

Highly active and self-cleaning photocatalytic coating to improve air quality

Summary

A Czech company has developed a highly active photocatalytic and self-cleaning coating based on a photocatalytic activity of titanium dioxide (TiO₂) nanoparticles and inorganic binders. The photocatalytic coating eliminates harmful molecules such as carcinogens, viral and bacterial molecules. Moreover, it helps to improve air quality. Paint manufacturers interested in license agreement are sought.

Creation Date 08 April 2015
Expiration Date 07 July 2016
Reference TOCZ20150407001

Details

Description

Titanium dioxide (TiO₂) is widely used compound in many products such as paper, paints, plastics, etc. It does not represent any health risk. Nanoparticles of TiO₂ have emerged as a perspective photocatalytic material for environmental purification.

The Czech company has developed highly active photocatalytic coating based on the photocatalytic activity of titanium dioxide nanoparticles. It is self-cleaning photocatalytic coating and high efficiency air cleaner. After the application of photocatalytic suspension on treated surface (walls, building materials, facades, roofs or wood), thin film is created. This film eliminates harmful molecules (carcinogens, viral and bacterial molecules) and cleans the air. The cleaning process is activated by UV light which is a natural component of daylight. In areas with a lack of daylight (e.g specific indoor space) artificial UV-A lighting is necessary.

Efficiency of the photocatalytic coating is not time-dependent. In case of the mechanical damage, the coating can be repaired by the suspension re-application.

Highly active photocatalytic coating can be applied indoors (households, hospitals, biolabs, animal farms, industrial halls) or outdoors (roofs and facades in urban agglomeration).

The Czech company is looking for paint manufacturers interested in buying a license to produce highly active photocatalytic coating.

Advantages and Innovations

In comparison with first generation of photocatalytic coatings currently on the market, highly active photocatalytic coating has 100 times higher efficiency for elimination of harmful molecules. Moreover, its composition is organics, silicate and silicon free.

Stage of Development

Already on the market

IPR Status

Patents granted, Copyright

Keywords

Technology

02007002	Building materials
10002001	Indoor Air Pollution/Treatment
10002002	Outdoor Air Pollution/Treatment

Market

08001023	Other chemicals and materials (not elsewhere classified)
08004004	Other pollution and recycling related

NACE

F.43.3.4	Painting and glazing
M.72.1.9	Other research and experimental development on natural sciences and engineering

Partner Sought

Type and Role of Partner Sought

Type of partner sought: Paint manufacturers.

Role of partner sought: Production of highly active photocatalytic coating under license agreement.

Type and Size of Partner Sought

SME 11-50, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

License agreement

Technology Offer

The future roadway to grow the grass, permeability road to discharge rainwater, eco-friendly road to reduce the use of de-icer

Summary

A Korean SME whose business is in the field of protecting and preserving natural environment has invented an innovative technology of making eco-friendly porous pavement for restoration of eco-environmental space. It is much firmer and more stable than concrete. It also can effectively protect natural environment with customized size and price. The firm is seeking a partner in civil engineering for a licensing agreement, joint venture, or a commercial agreement with technical assistance.

Creation Date 22 April 2015
Expiration Date 02 August 2016
Reference TOKR20140320001

Details

Description

Because of frantic land development and the lack of consideration on protecting the environment, nature has been being destroyed. This has caused global warming, and the world is facing severe damage from natural disasters resulted from abnormal changes of weather.

A Korean SME has been trying to restore eco-friendly grassy spaces from the roads made of cement, asphalts or pebbles. And it is planning to make the world greener in the near future. The idea of this technology came from a hive. It is known that hexagon patterns in the honeycomb structure have high space efficiency and are structurally sound.

The technology is to make hexagonal nets. Six sides of hive hexagonal plate are comprised of two different shapes of frames. Convex and concave shapes are formed by turns on every side, so they fit firmly when assembling the plates. Its formation process is similar to Lego parts consisting of studs and sockets.

The technology is to make hexagonal nets. Six sides of hive hexagonal plate are comprised of two different shapes of frames. Convex and concave shapes are formed by turns on every side, so they fit firmly when assembling the plates. Its formation process is similar to Lego parts consisting of studs and sockets.

The technique was invented for easy construction and preventing separation of the structure. The material for this is engineering plastic named HDPE (High Poly Ethylene). It is strong against shock, abrasion, temperature changes and chemical reactions. It also has great elasticity. It encourages more permeable surfaces, reduces surface water runoff and allows grass to grow. Therefore, it is a reasonable substitute for asphalts and concrete roads. It can be

used in fire land, parking lots, parks & gardens, golf course or trails.

The company is seeking a partner to develop a new line in overseas market by signing a licensing agreement or creating a joint venture with a foreign company. It also would like to introduce their core technology to foreign companies by teaching them how to assemble the product and how to provide after-sale service under the commercial agreement with technical assistance such as technical consultancy.

Advantages and Innovations

- Encourages plants (grass) growth and preservation
- Purifying air quality by capturing pollutant
- Versatile use for architecture, landscapes and civil construction
- Mitigating "the urban heat island effect" in summer
- Preventing snow damage in winter
- Residential environment improvement.
- Bioremediation of polluted soils

Stage of Development

Already on the market

IPR Status

Patents granted

Keywords

Technology

02006001	Materials, components and systems for construction
02007014	Plastics, Polymers
03004008	Plastics and Rubber related to Chemical Technology
10002007	Environmental Engineering / Technology

Market

07004006	Garden and horticultural products
08004004	Other pollution and recycling related
09007002	Manufacture of construction materials, components and systems
09009001	Conglomerates and holding companies

NACE

C.22.2.3	Manufacture of builders' ware of plastic
F.42.1.1	Construction of roads and motorways

Partner Sought

Type and Role of Partner Sought

- Type of partner sought : Companies
- Specific area of activity of the partner: civil engineering, landscaping or businesses related to the environmental issues
- Task to be performed:
 - 1) A licensing agreement
 - 2) Joint venture
 - 3) A commercial agreement with technical assistance such as technical consultancy

Type of Partnership Considered

- License agreement
- Commercial agreement with technical assistance
- Joint venture agreement

Technology Offer

Automatic indoor air purifying windows

Summary

A Korean SME specializing in water treatment and air purification technology is offering an automatic indoor air purifying window. The technology makes it possible to purify air indoors without opening windows. The air indoors keeps fresh because this window system lets discharge polluted air inside and purify the air coming from the outside. It perfectly acts as a natural ventilation. The company is looking for a partner for a commercial agreement with technical assistance.

Creation Date 02 July 2015
Expiration Date 02 August 2016
Reference TOKR20140610004

Details

Description

As time passes, the air pollution is getting worse. Since both air pollution caused by industrial development and indoor air pollution is very harmful to our health, there should be a way to resolve this problem. The problem cannot be solved just by opening the windows.

This SME has developed an automatic air purifying window which automatically purifies polluted air indoors while having the original functions of general windows. The automatic air-purifying window consists of two parts; a window glass and a window frame.

The window frame consists of three parts; a discharge part, an induction part, and an indoor air circulation passageway.

When indoor air first comes into the frame, it goes through the filter. And as the air is moving along the passageway, it passes through purification cartridge and light transmission part. In the end, the purified air comes back into indoors and bad part of the air is discharged to outside the window. Indoor air purification is mostly done at the top of the window frame; whereas, the air coming from outside goes through the same process in the lower part of the frame.

With such a structure, polluted air inside the room can be not only automatically purified, but also discharged to the outside without opening the window while purifying the inflown air from the outside. Therefore, the air indoors maintains fresh.

The company is looking for a partner for a commercial agreement with technical assistance such as assembly, engineering, technical consultancy, quality control or maintenance.

Advantages and Innovations

- Indoor air can keep fresh without opening the windows
- Get rid of Volatile Organic Compounds (VOC) and Formaldehyde (HCHO) in the house
- Maintain the original functions of general windows (daylight, ventilation, and insulation requirements)

Stage of Development

Already on the market

IPR Status

Patents granted

Keywords

Technology

10002001	Indoor Air Pollution/Treatment
10002002	Outdoor Air Pollution/Treatment
10002007	Environmental Engineering / Technology

Market

07004003	Home furnishing and housewares
08004001	Air filters and air purification and monitoring equipment
09007003	Distribution of building products and systems

NACE

C.25.1.2	Manufacture of doors and windows of metal
F.41.2.0	Construction of residential and non-residential buildings
M.71.1.1	Architectural activities

Partner Sought

Type and Role of Partner Sought

- Type of partner sought : Companies
- Specific area of activity of the partner : Architects, interior designers or window makers
- Task to be performed : Commercial agreement with technical assistance such as assembly, engineering, technical consultancy, quality control or maintenance

Type of Partnership Considered

Commercial agreement with technical assistance

Technology Offer

Respirometry instrument for measuring waste biodegradability and monitoring food fermentation

Summary

A Slovenian SME has developed a solid and/or liquid state respirometry instrument for measuring biodegradability of different types of waste and monitoring of food fermentation. Main instrument advantages are: high temperature biodegradability and mass flow controllers for high precision measurements. The SME is looking for partners that would use and co-develop the respirometry instrument through commercial agreement with technical assistance, research cooperation or joint venture agreement.

Creation Date 10 June 2015
Expiration Date 18 August 2016
Reference TOSI20150610001

Details

Description

A Slovenian SME developed a solid and/or liquid state respirometry instrument used for measuring biodegradability of different types of waste (plastics, organic waste, soil, compost) and monitoring of food fermentation. The respirometry instrument can be used for aerobic and anaerobic research purposes of small and medium scale. Main advantage of the presented instrument in compared to other available on the market are: high temperature biodegradability (0 - 60°C), 12 or more measuring channels, mass flow controllers for precise setting and measurement of gas flow in each reactor.

The developed respirometry instrument system is used for conducting diagnostic tests, measuring and monitoring the following:

- Bio-reactions in aerobic and anaerobic processes
- Plastic degradation at high temperature
- Monitors the activity in biological wastewater treatment plants
- Analyses decomposition efficiency of different types of material in a wastewater treatment plant
- Decomposition of waste, biodegradation
- Microorganism activity (pharmacy, production of medicines)
- Biochemical oxygen demand (BOD) and toxicity
- Respirometry (activity) of small animals
- Biological activity of organisms (concentration of carbon dioxide in the expired air)
- Compost maturity
- For use in food production (fermentation activity in wine production and milk industry)

Technical features of the respirometry instrument:

- 6, 12 or 24 measuring reactor channels,
- temperature from 5 to 70°C \pm 0,5°C,
- infrared (IR) CO₂ sensor,
- electrochemical or paramagnetic O₂ sensor,
- automatic humidification,
- aerobic or anaerobic bio-process measurement,
- automatic leak detection.

The Slovenian SME is looking for partners that would use the respirometry instrument and use the Slovenian SMEs help in adapting the instrument to specific field needs through commercial agreement with technical assistance. The SME is also looking for partners that would cooperate at broadening the applicability of the respirometer instrument in the field of polymer biodegradability, bioplastic, waste waters, ecology, and other solid & liquid materials through research cooperation agreement and joint venture agreement.

Advantages and Innovations

Advantages:

- High temperature (0 - 60°C) biodegradability measurement
- Optical or paramagnetic oxygen sensors
- Micro mass flow controllers in all chambers for high precision measurements
- Biodegradability measurement of plastic materials
- Zero drift with an automatic calibration
- Automatic sample humidifying system with humidity control
- 6, 12 or more measuring channels
- Automatic leak detection

Stage of Development

Already on the market

IPR Status

Patents granted

Keywords

Technology

08002002	Food Microbiology / Toxicology / Quality Control
09001009	Sensor Technology related to measurements
10002007	Environmental Engineering / Technology
10002008	Measurement and Detection of Pollution
10003001	Biotreatment / Compost / Bioconversion

Market

03007001	Chromatographs and related laboratory equipment
03007002	Other measuring devices
08002002	Industrial measurement and sensing equipment
08002003	Process control equipment and systems

08004002

Chemical and solid material recycling

NACE

M.72.1.9

Other research and experimental development on natural sciences and engineering

Partner Sought

Type and Role of Partner Sought

- Type of partner sought: Industry and research partners in the field of biotechnology, biology, medicine, industry and environmental research.
- Specific area of activity of the partner: partners with a biotechnological laboratory and excellent bioprocess engineering leadership or accredited laboratory.
- Type of Partnership Considered: The Slovenian SME is looking for partners that would use the respirometry instrument and use the Slovenian SMEs help in adapting the instrument to specific field needs through commercial agreement with technical assistance. The SME is also looking for partners that would cooperate at broadening the applicability of the respirometer instrument in the field of polymer biodegradability, bioplastic, waste waters, ecology, and other solid & liquid materials through research cooperation agreement and joint venture agreement.

Type of Partnership Considered

Commercial agreement with technical assistance
Joint venture agreement
Research cooperation agreement

Technology Offer

Biotechnological method of remediation of oil-contaminated acidic/alkaline soils with a high degree of mineralization.

Summary

University of Ukraine offers a biotechnological method for remediation of oil-contaminated acidic/alkaline soils with a high degree of mineralization. The method combines microbiological, biotechnological, agrochemical actions to increase the degree of purification of polluted soil to background concentrations. Advantages: simplicity, non-volatility, ecological safety, economic benefits. University is looking for investors and partners from the sectors of agriculture, forestry, oil/gas industry.

Creation Date	30 June 2015
Expiration Date	29 July 2016
Reference	TOUA20150630001

Details

Description

Production, transportation, processing and storage of hydrocarbons led to entering of significant quantities of toxic pollutants into the environment and their accumulation in the soil. The proposed biotechnological method allows to solve this problem. An introduction to soil of the surface-active biological product on the basis of the association of non-pathogenic multifunctional microorganisms with the use of biochemically-active bacteria-destructors of hydrocarbons and an activation of destructive abilities of the indigenous microorganisms leads to an effective and environmentally safe treatment of acid/alkaline or saline soil at different degrees of pollution by oil and products of its processing.

The method does not require the use of special equipment, works with minimum staff and monetary costs for creation of nutrient medium for pathogenic microorganisms-destructors of oil and chemical ameliorants.

The University has the necessary experience, scientific researchers and modern equipment for allocation of the pure cultures of microorganisms from natural sources and for their identification, studying the biochemical properties of different cultures of microorganisms; the creating on their basis of effective synergy of an active biological product and in developing a process procedure of the production of biological preparations in powder and liquid forms.

The application of biotechnological methods allows to get from 85 to 97% degree of purification from oil products up to their allowable residual concentrations in the soil.

The method does not require expensive equipment in the processing of oil-contaminated soils with different degree of mineralization on the technology 'in situ', does not require scarce reagents through the use of cheap and readily available natural oil adsorbents, is non-volatile and is characterized by low staff costs and quickly pays for itself.

The funds which are required for industrial implementation of the method depends on the area

of saline soils which need in bioremediation after oil pollution and oil products, estimated cost the remediation is \$18.0-20.0 per 1 m² of soil.

The University is interested in technical cooperation, technical assistance and commercial agreement with industry and business partners from European and other countries from the sectors of agriculture, forestry, oil and gas industry. Possible forms of cooperation are license agreement, technical cooperation agreement, research cooperation agreement.

Advantages and Innovations

The main advantages of the method are:

- environmental safety through the use of natural sorbents and new developed surface-active biological product;
- comprehensiveness – reducing the content of oil products in acid or alkaline soils with different degree of salinity is accompanied by salutary of soil environment;
- high efficiency of cleaning;
- non-volatility of process;
- the simplicity of its implementation;
- the speed of payback.

Stage of Development

Prototype available for demonstration

IPR Status

Secret Know-how, Patents granted

Keywords

Technology

06001005	Diagnostics, Diagnosis
06006010	Bio- Composites
10002006	Ecology
10002011	Soil and Groundwater Pollution
10002012	Remediation of Contaminated Sites

Market

04010	Microbiology
08004004	Other pollution and recycling related
08005	Other Industrial Products (not elsewhere classified)

NACE

E.39.0.0	Remediation activities and other waste management services
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Partner Sought

Type and Role of Partner Sought

Type of partner sought: investors, manufacturing companies from the sector of agriculture and forestry, profitable companies from industry sectors - chemical, petrochemical, oil production and refining.

The field of activity of the partner: environmental protection, biodiversity conservation, restoration oil polluted soil in situ (directly in the array), increasing of efficiency of cleaning of alkaline or acidic soils from oil pollution, testing of new biotechnologies and their introduction to the market of biotechnologies for ecological purpose.

The tasks for partner: technical cooperation (joint further development), collaboration in the promotion of developed biotechnology, marketing services.

Type and Size of Partner Sought

SME 11-50, University, R&D Institution

Type of Partnership Considered

License agreement

Technical cooperation agreement

Research cooperation agreement

Technology Offer

The biotechnological method of extraction of rare and heavy metals from the waste products of coal industry and energetics

Summary

University (Ukraine) offers a biotechnological method of extraction of rare, colored and heavy metals from the technogenic waste products by activation of biological process of microorganisms. This method provides the liquidation of waste products and receiving the rare-raw materials and is effective, ecological safe and economically profitable. The University is looking for partners among organizations of coal industry and energetics for research and technical cooperation.

Creation Date 06 July 2015
Expiration Date 29 July 2016
Reference TOUA20150706001

Details

Description

The biotechnological method of leaching of rare and heavy metals from technogenic wastes solves the ecological problems which connected with waste accumulation which is formed during of coal beneficiation and its combustion.

At the same time this method allows to get sources of raw materials for production of rare metals including germanium and gallium. The method is based on using and activation of microorganisms which are formed in wastes. This activation is accompanied with breaking down the crystalline grating of products and extraction of rare and heavy metals from them.

The University has the essential experience, the scientific staff and the new equipment for extracting, researching and activation of associations and pure cultures of microorganisms from wastes; creation the effective bacterial preparation on their bases; detecting and elaboration the optimal technological conditions of process for each type of waste according to type of coal deposits and way of coal combustion. As a result the valuable rare metal concentrate with 3-5% germanium and/or gallium is obtained and wastes are neutralized with below of the maximum allowable concentration (MAC) for content of heavy metals in soils.

The method does not require expensive equipment, scarce reagents and is characterized by low energy consumption and low staff costs. This method is highly profitable and rapidly pays off. The amount of money which is necessary for the implementation of industrial development depends on the volume of the planned output and is about \$ 18.0-20.0 per 1 ton of waste processing.

The university is interested in investors, organizations of coal industry and energetics from EU and other countries with the aim of research and technical cooperation for the method promotion, creating of production capacity, marketing services etc.

Advantages and Innovations

The main advantages of the method are:

- simplicity of the method - it does not require expensive equipment,
- the method is realized at normal temperature and pressure without using of strong acids and formation of toxic intermediate products that makes it environmentally friendly;
- this method is aimed on the obtaining of additional rare metals and ensures that waste lost their negative effect on the environment and humans;
- this method is highly profitable, quickly pays for itself and provides a growing demand on the market in combination with the lack of internal competitors.

Stage of Development

Prototype available for demonstration

IPR Status

Secret Know-how, Patents granted

Keywords

Technology

06002008	Microbiology
06002011	Bionics
06006010	Bio- Composites
10002007	Environmental Engineering / Technology

Market

04010	Microbiology
06005002	Coal related equipment
08004002	Chemical and solid material recycling

NACE

M.72.1.1	Research and experimental development on biotechnology
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Partner Sought

Type and Role of Partner Sought

Type of partner sought: investors, industrial organizations (coal industry and energetics)

Specific area of activity of the partner: protection of environment, increasing the comprehensiveness of using raw materials, placing on the market of new products.

Task to be performed by the partner sought: cooperation for technology promotion, creating of

production capacity, marketing services.

Type and Size of Partner Sought

SME 11-50, SME 51-250

Type of Partnership Considered

Technical cooperation agreement
Research cooperation agreement

Technology Offer

Production of novel eco-friendly automotive catalytic converters

Summary

A Greek based SME develops novel eco-friendly nano-structured automotive catalysts utilizing transition metal nanoparticles that can partially or completely replace the platinum group metals. The company manufactures novel eco-friendly catalysts for the new direct fit aftermarket and is looking for commercial agreement with technical assistance and/or joint venture agreement.

Creation Date 30 July 2015
Expiration Date 27 August 2016
Reference TOGR20150730001

Details

Description

The Greek based SME was established in 2000 and has more than ten-year experience in gathering and pre-processing of spent catalytic converters. The company manufactures autocats for the new direct aftermarket and imports and trades automotive exhaust systems. The new direct-fit autocats are for all vehicle makes and models for aftermarket. The direct-fit catalytic converters use either ceramic honeycomb or high flow metallic substrate and have 2 years warranty and EU homologation.

The company replaces partially precious metals (Pt, Pd, Rh) by transition metals nanoparticles in autocats washcoat and makes research in the development of ceramic monoliths utilizing catalysts in their structure.

The Greek company acquired a de-canning facility with capability of treating 40.000 converters per year and possesses a cost-effective logistics network with an optimized collection.

Advantages and Innovations

The company has the following advantages and innovations:

- Proven involvement in EU funded Projects (NextGenCat, Eco_Innovation 2013, CRM_Innonet network)
- Development of novel eco-friendly nano-structured automotive catalysts utilizing transition metal nanoparticles (Cu, Ni, Co, Zn, Fe etc) that can partially or completely replace the platinum group metals
- Ageing studies of catalytic converters
- Small scale and cost effective recycling facilities for precious metals (Pt, Pd, Rh) specialized solely for automotive catalysts
- Novel low cost catalytic converters including minimum quantity of platinum group metals

Stage of Development

Already on the market

IPR Status

Secret Know-how

Keywords

Technology

02002016	Microengineering and nanoengineering
02007003	Ceramic Materials and Powders
02008005	Road Transport
02009012	Automotive engineering
10002013	Clean Production / Green Technologies

Market

08003007	Other industrial equipment and machinery
08004004	Other pollution and recycling related
09001005	Motor vehicles, transportation equipment and parts
09001007	Other transportation
09004008	Other manufacturing (not elsewhere classified)

NACE

C.28.9.9	Manufacture of other special-purpose machinery n.e.c.
C.29.3.2	Manufacture of other parts and accessories for motor vehicles
C.30.9.9	Manufacture of other transport equipment n.e.c.

Partner Sought

Type and Role of Partner Sought

The company is interested in cooperation with the following potential partners:

1. SMEs that want to develop new products and are looking for technical assistance
2. A partner (research institute/ investment group/ consortium) that is looking for a partner with expertise in the development of novel automotive catalysts for a specific project or tender or reaserch project under commercial agreement

Type of Partnership Considered

Commercial agreement with technical assistance
Joint venture agreement

Technology Offer

Fast method for the detection of somatic coliphages, used as indicators of water fecal pollution

Summary

A Catalan university has developed a new approach for the detection of somatic coliphages, a group of phages from fecal origin infecting a specific strain of Escherichia Coli. The method is based on using a host strain genetically modified that allows detection of up to 10 somatic coliphages in only 2 hours. Since this method requires only an incubator it could be used in remote areas. They seek companies to integrate this technology in a commercial kit via licensing & technical cooperation.

Creation Date 29 April 2015
Expiration Date 20 January 2016
Reference TOES20150429001

Details

Description

Fecal pollution is one of the main causes of health problems around the world, and is associated with several thousand human mortalities per day by serving as a source of pathogen transmission. Classically bacterial indicators are used for determination of the levels of fecal pollution in waters and in other samples that can be affected by contaminated waters such as food or sludges.

Many studies confirm that bacterial indicators do not provide enough information about the occurrence of non-bacterial pathogens such as viruses and protozoa in water. Therefore other indicators are advisable. Bacteriophages have been proposed as viral fecal indicators and particularly somatic coliphages are numerous, easy and cheap to detect. The current method for detection of somatic coliphages is standardized in an ISO protocol (ISO 10705-2) and allows enumeration of the phages by visualization of lytic plaques of lysis in 18 hours.

Somatic coliphages have been introduced in some water management policies (e.g. US, Canada or Australia) as indicators of water fecal pollution. However, the lack of an easy test for their determination limits the implementation of somatic coliphages in many laboratories, despite their good performance as fecal indicators.

The new developed method, that uses the same host strain and media than the ISO protocol, consists on a genetically modified Escherichia coli host strain. This strain is grown in the liquid medium containing a commercially available substrate.

When the strain grows in this medium without phages the color of the medium is yellow. When the strain grows in the medium in the presence of phages, the phages cause the lysis of the bacterial cells and the medium color changes to blue by degradation of the substrate (other readouts can be achieved only by selecting other commercially available substrates).

In the presence of somatic coliphages, the phages cause the lysis of the strain and the medium turns blue within 2-3 hours incubated at 37°C. Time for visible reaction is dependent on the phage concentration in the sample and could be shorter at high phage densities. The system allows detection of less than 5 phages/tube.

The strain has been constructed and tested using the standardized media with the substrate. Phages from a stock and phages from natural samples (waters, sludge, seafood) have been assayed in laboratory conditions.

The method can be used for presence/absence or adapted to quantification testing with a Most Probable Number approach

This new method for the detection of fecal pollution can be applied in the food, soil and water pollution sectors.

The Catalan research group is looking for partner able to integrate this technology in a commercial kit interested in a license agreement or technical cooperation.

Advantages and Innovations

- End-users can obtain a faster method for detection of faecal pollution and get objective results almost in real-time (2-3 hours).
- Only basic laboratory equipment (just a 37°C incubator) is required to use this method. That allows determination of fecal pollution in remote areas.
- The method can be used for presence/absence or adapted to quantification testing with a Most Probable Number approach.
- This method is more sensitive than the existing methods for determination of fecal pollution and it has been specially designed to avoid false positives.

Stage of Development

Available for demonstration

IPR Status

Patent(s) applied for but not yet granted

Keywords

Technology

06001018	Virus, Virology/Antibiotics/Bacteriology
08002002	Food Microbiology / Toxicology / Quality Control
10002008	Measurement and Detection of Pollution
10002011	Soil and Groundwater Pollution

Market

08004003	Water treatment equipment and waste disposal systems
09008002	Water, sewerage, chemical and solid waste treatment plants

NACE

M.72.1.1

Research and experimental development on biotechnology

Partner Sought

Type and Role of Partner Sought

Companies able to develop a commercial kit that integrate the developed method of detection interested in a license agreement or a technical cooperation.

Type and Size of Partner Sought

SME 11-50, R&D Institution, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

License agreement
Technical cooperation agreement

Technology Offer

Software for prediction of target and safety profile of pharmaceuticals, cosmeceuticals, agrochemicals, and environmental pollutants

Summary

A Spanish SME has developed platform-independent software for large scale off-target pharmacology and predictive safety of small molecule pharmaceuticals, cosmeceuticals, agrochemicals, and environmental pollutants. The platform includes an interactive graphical user interface to analyse the results in an intuitive and interactive manner. Partners sought from pharma, cosmetics and agrochemicals industries interested in license agreement and technical cooperation to adapt it to specific needs.

Creation Date	06 July 2015
Expiration Date	26 January 2016
Reference	TOES20150706007

Details

Description

The developed platform is a system modelling designed as a modular computational framework to ultimately link the various systemic entities, namely, molecules, proteins, pathways, side effects, organs, and diseases. The current version allows for linking molecules, proteins, and side effects.

It can be installed in a corporate multi-cpu server to which multiple users can submit their calculations using a command line, from a personal workstation, or the platform-independent graphical user interface provided. The input of the software is a set of chemical structures and the output is, on one hand, the list of targets and projected affinities to which each molecule is likely to interact and, on the other hand, the list of safety events that are likely to be associated with each molecule. In the last few years, the methodology has been applied to a variety of drug discovery scenarios, some of which have been presented and thoroughly discussed in the scientific literature.

Methodology for off-target pharmacology: three types of ligand-based methods are implemented in the current version of the platform that rely on descriptor-based similarities, fuzzy fragment-based mapping, and target cross-pharmacology. Descriptor-based similarities are calculated using three types of proprietary two-dimensional descriptors, each one of them characterizing chemical structures with a different degree of fuzziness and thus, complementing each other in terms of structural similarity and hopping abilities. The affinity of a compound for a given target can be estimated by inverse distance weighting interpolation from the affinity landscape defined by all neighboring molecules within an optimised applicability domain according to the descriptors and similarity/distance metrics used. Similarity-based models are currently available for over 5,000 protein targets. Beyond similarity, fuzzy fragment-based mapping exploits the presence of key interaction points within chemical series of analogous scaffolds. This approach

is not restricted to identical subgraphs. Instead, similar topologies can be identified, allowing a reasonable degree of scaffold hopping. Finally, the target cross-pharmacology index between two targets is defined as the fraction of compounds experimentally known to be active on both targets relative to all known ligands active on one of them.

Methodology for predictive safety: four methods are currently implemented to produce a safety profile likely to be associated with the small molecule being processed. One is the similarity-based method defined above applied to all drugs linked to specific side effects. Another one is a fragment-based method that identifies safety liability patterns in the structure of a molecule (traditionally referred to as “structure alerts”). A third one is a target-based method that relies on the predicted target profile for the molecule and the link of those targets to side effects. A final method is a pathway-based method that projects the predicted target profile to the biological pathways in which those targets are involved and links them to safety events (adverse outcome pathways).

The developed platform is implemented using a free, open source framework for building and maintaining highly interactive, expressive applications (Rich Internet Application, RIA) that deploy consistently on all major browsers. The new platform was developed following the Model-View-Controller design pattern to facilitate the reusability and maintainability of the application. It has been designed particularly for medicinal chemists, pharmacologists, and toxicologists with special emphasis in providing intuitive and interactive graphical tools for analyzing the results.

The Catalan SME is looking for partners from pharma, cosmetics and agrochemicals industry working in the prediction of target and safety profile of small molecules interested in license agreement and technical cooperation to adapt it to specific needs.

Advantages and Innovations

The new platform offers competitive advantages in a variety of fields and industries dealing with small molecule components.

- Pharmaceuticals: Having the ability to predict the complete profile of interactions between proteins and small molecules, even before being synthesised, allows for anticipating potential safety liabilities due to off-target pharmacology later on in the drug discovery process. In addition, with recent trends on phenotypic assays, this technology allows to the likely protein target of the different phenotypic hits and classify them in mechanisms of action. Finally, the identification of novel protein interactions for old drugs (both failed and marketed) offers opportunities for repurposing those into different therapeutic areas.

- Cosmeceuticals: The software fits well with recent trends towards using computational approaches to predict potential toxicological effects of cosmetic ingredients.

- Agrochemicals: Predicting the target profile of food ingredients may help anticipating potential perturbations of the metabolic network and understanding some of the effects of food in human health.

- Environmental pollutants: By predicting the target profile of waste molecules, one may be able to assess the likely effects that concentrations of those compounds in the environment may have in human health.

Stage of Development

Already on the market

IPR Status

Secret Know-how

Keywords

Technology

03004006	Organic Substances
05001002	Computational Chemistry and Modelling
06001015	Pharmaceutical Products / Drugs
06002009	Molecular design
10001002	Assessment of Environmental Risk and Impact

Market

05007002	Pharmaceuticals/fine chemicals
07003002	Health food
07004002	Health and beauty aids
08001022	Agricultural chemicals

NACE

C.21.1.0	Manufacture of basic pharmaceutical products
S.96.0.2	Hairdressing and other beauty treatment

Partner Sought

Type and Role of Partner Sought

The SME is looking for large companies or SMEs from the pharmaceuticals, cosmetics and agrochemicals industry. The partner sought should be active in the drug, cosmetic or agrochemical design, or in the prediction and risk assessment of toxic effects from waste compound in environment and human health.

The Catalan SME is open to several partnership types such as license agreement and technical cooperation to adapt it to specific needs.

Type and Size of Partner Sought

SME 11-50, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

License agreement
Technical cooperation agreement

Technology Offer

Fast & easy portable rescue device for locating avalanche victims

Summary

A Spanish research group has created a portable rescue device for locating avalanche victims based on measurements of electromagnetic signals emitted from a transmitter carried by a victim reducing the time taken for locating the victim. Technical cooperation agreement is envisaged with companies.

Creation Date	21 July 2015
Expiration Date	31 January 2016
Reference	TOES20150721004

Details

Description

A Spanish research group that focuses its activities in the field of signal processing for communications and navigation, has developed a portable rescue device for locating avalanche victims based on measurements of electromagnetic signals emitted from a transmitter.

A fundamental problem in the rescue of avalanche victims is the little time that an injured person may remain alive when buried by snow after being struck by an avalanche.

Therefore the search method implemented by the device is as efficient as possible in terms of speed of localization.

Currently these self-rescue devices such as Avalanche Victim Detector (AVD) or Avalanche Transceiver (AT) have two drawbacks which affect the conventional search method directly increasing the search time.

1. The followed path is not straight. This makes the ride a little longer, and it does not allow the user to get an idea of the area where the victim can be until it is very close, because the directions change, although slightly, unpredictably for the user. (Fig. 132)
2. Direction of $B(t)$ can vary greatly near the receiver, which can make the rescuer be easily confused, especially without proper training and a familiarization with the device. (Fig. 132)

The Spanish research group, with large experience in signal processing for communications and navigation, has developed a portable electromagnetic signal receiver, with an array of magnetic vector sensors arranged for receiving signal with spatial diversity being capable of performing a three-axes magnetic vector measurement. (Fig. 232)

Based on the measurement of the magnetic field determining the location of the portable electromagnetic transmitter by estimating the spatial position of the magnetic dipole provided by the magnetic sensors array exploring their spatial diversity through one or more array signal processing techniques.

The research group is interested in technical cooperation with companies in the field of alpinism for implementation and further development of the device.

Advantages and Innovations

Provides exact location (straight path). Signal search: The sensitivity is improved, and therefore the signal is detected earlier than in the conventional method

Signal earlier detection. Course search: This stage is applied until the rescue user is 10 meters far from the victim. In the conventional method, in contrast, this stage has to be applied until the rescue user is about 2 meters away of the victim.

Fine search: Rescuer follows a straight path to find it. It is faster than following a curve and there is no need of a probing stage (current method). The change between phase 2 and 3 (Fig. 132) of the proposed method is transparent to the user and is performed automatically by the portable rescue device.

Pinpointing not necessary (stage 4 search) (Fig. 132)

Stage of Development

Prototype available for demonstration

IPR Status

Patents granted

Keywords

Technology

01004002	Applications for Tourism
01006009	Signal Processing
10002009	Natural Disasters

Market

05004002	Rescue and emergency equipment
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NACE

R.93.1.9	Other sports activities
R.93.2.1	Activities of amusement parks and theme parks
R.93.2.9	Other amusement and recreation activities

Partner Sought

Type and Role of Partner Sought

- Type of partner sought: companies (SME, Multinationals) from the alpine sports sector.
- Specific area of activity of the partner: Companies (SME, Multinationals) active in the field of alpinism equipment.
- Task to be performed by the partner sought: implementation and development of the technology

Type and Size of Partner Sought

SME 11-50, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Technical cooperation agreement

Technology Offer

Barcelona homologated drone centre test site

Summary

Spanish SME has built a state of the art test facility to develop UAV/RPAS Technology (Unmanned Aerial Vehicle/Remotely Piloted Aircraft Systems). This facility counts with the essential UAV segregated airspace, rural premises&airfield, technical building, labs. and so on. Technical cooperation agreement and commercial agreement with technical assistance are sought

Creation Date 06 August 2015
Expiration Date 12 December 2015
Reference TOES20150806001

Details

Description

Within the last few years, the UAV/RPAS civil market & development, commonly known as drones, have experienced an enormous rise, with new applications, new research & applied projects and companies, most of them with direct impact and benefits in society (security), environment (remote sensing), forestry (forest health and firefighting), agriculture, etc.

This rise has been parallel to new rules and directives to ensure safe flights inside a dense airspace and populated countries. In this scenario, it is essential to perform extensive and accurate testing of UAV/RPAS to certificate and qualify their features and safety before successfully entering in commercial operations.

This Spanish SME has designed a facility in a more than desirable location to perform development & testing activities for UAV & sensors manufacturers as well as Research Centres. This site is located in a rural environment to ensure total flight privacy, and counts with build-in facilities to control and track flights (cab1), with labs & workshops and with office space & accommodations for the contractor. Which allows design changes and system modifications to be undertaken since flight testing enables fine tuning of your project.

The team running the facility also puts at the client's disposal, consortiums, airframe developers and sensor platform manufacturers to offer a complete set for success in test & qualify campaigns. At the end, the main objective of a test&qualify campaign is to demonstrate the maturity of the project and the effective TRL achieved.

UAV Airfield: The centre occupies an area of 14 ha. 4ha of which, are correspond to the airfield. The orientation of this field greatly facilitates the operations of UAVs, which can take off and land with the correct orientation with respect to the prevailing winds.

Building (ctc1): The bioclimatic building that houses the centre is revolutionary in concept and construction. This building has two goals in mind: maximum energy efficiency and minimum landscape impact.

The thermal envelope of the building has been studied in detail in order to ensure comfortable temperatures throughout the year. To achieve this, the building has been integrated into field to take advantage of the thermal inertia of the terrain. This also eliminates the obstacle that the building would impose for UAV operation.

The electricity is provided with solar panels and wind turbines while the heating is achieved thanks to the combination of a biomass heater and earth warming tubes. Rain water is collected and stored using a special system of pipes and tanks where it is conditioned for human use. This makes the building completely autonomous.

Airspace: the facility has its own segregated airspace (TSA), approved by the Spanish Airspace Authorities. Has an extension of 2.500 ha. and a maximum ceiling of 4.000 ft. It also has established safety regulations for the testing of aircrafts & helicopters under 150kg.

This centre has proven transnational projects cooperation, serving as test site for ICARUS project (FP7) and MapKITE project (H2020). The staff has a long and proven experience in UAV applications and scientific research projects. There are active agreements with R&D Technological Centres as well as Universities. These agreements put added value available to their contractors in order to improve their projects and surpass their requirements.

The centre can also be used to perform customer/partner events & workshops, with theory and practical demonstrations of products and systems. Also, the centre organises courses and seminars in advanced remote sensing applications, fixed wing operations, etc. with recognized worldwide key speakers and with a high rate of international participants.

The centre is seeking for a technical cooperation agreement and commercial agreement with technical assistance. It is looking for partners and universities to develop and test research projects at the facilities.

Advantages and Innovations

The main characteristics of the field are:

- Availability: 24x7x365
- Located in an elevated flat plateau.
- Two main grass runways orientated to dominant winds:
- Free of obstacles in all directions.
- Free of electro-magnetic interferences.
- Good atmospheric conditions all year long.
- Easy access from hangar facilities.
- 140.000 m² outdoor surface for installing remote sensing targets
- Terrain types: 20% mountainous, 10% hills, 70% farmland
- Geodetic markers
- Camera calibration targets (visual/IR)
- Static real ground targets (roads, bridges, residential, industrial, dams)
- Meteorological Station
- Offices
- Workshop
- Lab
- Hangar
- Meeting room
- Specialized library
- UAV consultant's office
- Warehouse

Flight control capabilities and features:

- Fixed Flight control center with UAV/ RPAS flight simulation & flight plan capabilities
- Mobile Flight control center trailer

- Flight Tracking System
- Surveillance Radar
- Telemetry
- Operational features:
 - Day/Night operations
 - On-site air traffic control (ATC) services
 - On-site NOTAM issuance
 - On-site Flight Test Engineer
 - On-site Flight Test Manager
 - On-site emergency services
- Contractor facilities:
 - Secure/Access controlled airfield facilities
 - Secure/Access controlled hangar facilities
 - On-site accommodation
 - Off-site accommodation
 - On-site food & beverage facilities
 - Courier delivery (1 day EU / 2-3 days worldwide)
 - Telephone landlines
 - GSM/3G/4G cellphone coverage
 - GPS EGNOS
 - Internet access available for contractor
 - Media coverage (local, national, international)

Stage of Development

Already on the market

IPR Status

Other

Keywords

Technology

01001001	Automation, Robotics Control Systems
02011001	Aeronautical technology / Avionics
02011007	Guidance and control
10002007	Environmental Engineering / Technology
10002010	Remote sensing technology

Market

05004002	Rescue and emergency equipment
08002007	Other industrial automation
08005	Other Industrial Products (not elsewhere classified)
09001006	Airfield and other transportation services
09005	Agriculture, Forestry, Fishing, Animal Husbandry & Related Products

NACE

C.26.5.1	Manufacture of instruments and appliances for measuring, testing and navigation
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M.72.1.9	Other research and experimental development on natural sciences and engineering
M.74.1.0	Specialised design activities
M.74.9.0	Other professional, scientific and technical activities n.e.c.

Partner Sought

Type and Role of Partner Sought

- Type of partner sought: Research Centers, Universities, UAV/RPAS manufacturers, payload and sensors manufacturers, guidance&control system manufacturers, UAV/RPAS integrators, UAV/RPAS operators, H2020/FP7 Consortiums on Secure Societies, Forestry&Sea and Agricultural projects
- Specific area of activity of the partner: Development and integration of UAV/RPAS airframes, sensor platforms, remote sensing technology, etc. that must be validated and tested in order to access safely and characterized to commercial operations. In the H2020/FP7 case, the projects must be validated and tested to show the real TRL status
- Task to be performed by the partner sought: Partners must be project leaders, with own technology or UAV/RPAS applications. All of them must be involved in UAV/RPAS projects. In Research Centers case, must have a research project with well defined specifications and requirements. The project plan must include a test roadmap that can be checked and validated by their center staff, in order to put available for the project all testing schedule, segregated airspace, materials & labs, tracking systems, control room, etc.

Type of Partnership Considered

- Commercial agreement with technical assistance
- Technical cooperation agreement

Technology Offer

Support system for decision for infrastructure vegetation projects

Summary

A French company has developed a support system for decision for infrastructure vegetation projects. In this context, they are interested in a partnership with infrastructure managers to perform pilot sites and engineering offices to license their technology. Technical or research cooperation agreements are also considered.

Creation Date 11 June 2015
Expiration Date 02 August 2016
Reference TOFR20150611003

Details

Description

A French SME has a strong expertise on providing solutions to monitoring and enhancing soil functions and associated vegetation. They also have a strong expertise in land reclamation based on disturbed soils vegetation; in this context they propose all-inclusive solutions to their clients (quarries, industries ...). On the other hand, their R&D team work on innovative tools to support decision in soil functioning and vegetation contexts.

One of their support system for decision deals with infrastructure vegetation. It resulted of 4 years of R&D work in collaboration with academics and end users and emerged from an initial need identified by their end user partner.

Indeed, managing infrastructures and industrial sites (terrestrial transport, quarries, cities, mines ...) often implies to deal with desirable and unwanted vegetation (aesthetic value, safety, soil stability ...). Just for France, this market worth five billions of Euros yearly and this market is growing with the increasing public, private and legal concerns on biodiversity, climate change and ecosystems services. Their technology increase the reliability of the vegetation project by enhancing its success rate, increasing infrastructure lifespan and reducing the maintenance costs by delaying woody species installation. They aim at offering comprehensive services adapted to most of the needs of each market sectors involved in infrastructure vegetation, with gradual levels of support according to the project scale and implementation stage.

Currently, they aim at performing several pilot sites in contrasted contexts in Europe (railways and highways embankments, quarries, mines, industrial wasteland ...). They already did a pilot site and two others sites are identified for 2015. Pilot sites will be used as "show-room" for easing market adoption of their technology.

They are looking for collaboration to deploy their technology: pilot site building in France, Spain, Italy, Switzerland, Germany, Belgium and United-Kingdom. These new pilot sites will provide new features to their support system for decision and supply databases of this system (flora,

microflora, soil types, etc) to maintain their cutting edge position.

They are looking for engineering offices to license their technology.

As a SME company involved in eco-friendly technologies, they are applying on EU-H2020 fundings and are open to partnerships with other SME in this specific context.

Advantages and Innovations

- This is the only existing support system for decision for infrastructure vegetation projects
- Using their solution will reduce vegetation maintenance costs and increase infrastructure life span.
- Their solution can also be used to enhance biodiversity and environmental services such as soil erosion reduction, water filtration and limiting invasive species installation.

Stage of Development

Available for demonstration

IPR Status

Secret Know-how, Patents granted, Copyright

Keywords

Technology

01004006	Environment Management Systems
06002008	Microbiology
10002005	Biodiversity / Natural Heritage
10002007	Environmental Engineering / Technology
10002012	Remediation of Contaminated Sites

Market

02006007	Databases and on-line information services
04010	Microbiology
08004002	Chemical and solid material recycling
09005	Agriculture, Forestry, Fishing, Animal Husbandry & Related Products
09006	Mining (non-energy related)

NACE

M.72.1.1	Research and experimental development on biotechnology
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Partner Sought

Type and Role of Partner Sought

- Infrastructure managers to provide potential pilot sites
- Engineering offices to license our technology
- Research labs to develop new R&D projects in the context of infrastructure vegetation

Type and Size of Partner Sought

SME 11-50, University, R&D Institution, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

License agreement
Technical cooperation agreement
Research cooperation agreement

Technology Offer

Platform dedicated to green logistics, messenger fleets and urban deliveries

Summary

A Belgian software editor has developed a tool dedicated to sustainable transportation of goods for enterprises and e-commerce. Thanks to their platform, technology and expertise, they provide an all-in-one solution for customers: the logistics, the messengers' fleet, the cloud mobile app. The SME is involved in circular economy; they look for partners willing to use a software solution dedicated to ecommerce deliveries. Commercial agreements with technical assistance are sought.

Creation Date 20 July 2015
Expiration Date 04 August 2016
Reference TOBE20150428001

Details

Description

The Belgian company is a software editor based in Brussels and wants to replace motorised urban freight transport by sustainable urban freight.

Cars and vans provide most of the freight transportation and pollution inside the cities. This pollution can be suppressed by using intensively all the possibilities offered by sustainable transportation (bikes, cargobikes, tricycle, electric vehicles...). And actually, enterprises are looking for means to put green logistics in place like with bike deliveries. In a context of traffic jams, pollution and undertakers, bike delivery is more efficient and creates short chains that the consumers and the citizens appreciate.

This allows cities being much cleaner, breathable, and human, making then green transportation a requirement and a way to upscale sales. First mile and last mile logistics and even same hour deliveries can easily go green.

Therefore and with such a purpose, this software editor has developed a tool dedicated and supporting a sustainable economy.

Technical aspects and advantages:

The software solution is natively cloud and mobile first. This platform is entirely coded by the company, using open source programming languages and databases. They are the only owners of their solution and can develop any type of application on top of it, like specialised mobile apps for your projects. The environment is secured and highly available; online backup is also provided.

Open data exchange is facilitated by their next generation architecture. Geo visualisation and

tracking are integrated. The connection of external software is easy via the API (Application Programming Interface).

They can even provide with real time pricing and automatic invoicing within the system.

They have expertise in the green logistics field and possess unique building blocks to put green logistics in place. Nowadays sustainable delivery is a must everywhere it is applicable because commerces sell more

They address the e-commerce, the urban freight and urban logistics market. They also have market applications in smart cities projects and waste collections. Food delivery and logistics projects are concerned as well. They actually provide mobile apps using GIS (Geographic Information System) and have their own servers. They are working on the version 2 of the software and are preparing solutions involving IoT (Internet of Things) products. There are a lot of market applications inside the first mile and last mile green logistics regarding the next generation transportation products.

Type of cooperation expected :

The main cooperation type would be commercial agreements with technical assistance. Indeed the company can provide commercial service of bike delivery.

The SME already has partners in several European countries and would like to grow its international network. The solution can be tailored to the needs of the clients and integrated in wider policies.

Advantages and Innovations

The solution is highly innovative because it combines:

- Functional innovation providing green logistics to enterprises
- A complete offer of services on the new markets of reverse logistics and sustainable transportation
- Next generation technical environment from cloud servers to mobile app
- they entirely own their technical environment, and they can customise it to the user needs and integrate well with information systems : the company provides open data and real time feed.

Stage of Development

Already on the market

IPR Status

Design Rights, Trade Marks, Exclusive Rights, Copyright

Keywords

Technology

01004003	Applications for Transport and Logistics
02008003	Logistics
02010003	System and transportation
10002006	Ecology
11001	Socio-economic models, economic aspects

Market

02007007	Applications software
07002005	Other retailing
09001007	Other transportation

NACE

J.62.0.1	Computer programming activities
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Partner Sought

Type and Role of Partner Sought

- Type : SMEs
- Activity : ecommerce
- Role : the company gives new opportunity to commerce and e-commerce to grow in cities relying on new transportation models. Through the software, the company provides bike delivery solutions with technical assistance.

Circular economy actors:

Circular economy associations, the company offers tools and expertise to connect to all other actors, manage the fleets and the people

Thanks to these solutions, Enterprises will enhance their customer experience and be more efficient. All sectors are benefitting from having less pollution and better services. There are no geographical barriers to their markets: the company is already present in Italy, Germany and soon in Norway.

Type and Size of Partner Sought

SME 11-50, Inventor, R&D Institution, SME <10, 251-500, SME 51-250

Type of Partnership Considered

Commercial agreement with technical assistance

Technology Offer

Non-chemical (physical) water treatment devices for hard water treatment

Summary

A Slovakian company has designed non-chemical devices for treating hard water anywhere where boiler scale and sediments are created as a result of water temperature or pressure changes e.g. in boiler rooms, heat exchangers, compressor plants, etc. They operate by alternating current induction to change the supermolecular structure of treated water. The company is looking for partners for further technical development and testing.

Creation Date 25 October 2013
Expiration Date 27 July 2016
Reference BICBA019

Details

Description

An East-Slovakian Company designed non-chemical water treatment devices. These devices are used for hard water treatment anywhere where boiler scale and sediment is created as a result of water temperature or pressure changes e.g. in boiler rooms, heat exchangers, compressor plants, etc. This results in hard water obtaining soft water properties, but it does not create scale and it is able to dissolve and remove its old deposits.

The units operate on the principle of changing the supermolecular structure of treated water by alternating current induction. The system includes an electronic unit and a winding (coil). The units are designed according to flow rate, velocity of flowing water and piping diameter. 50 standard models are available for home and industrial applications capacity from 0,1 m³/h up to 5 500 m³/h.

Current and Potential Domain of Application: Service water supplies, heat exchangers, boiler rooms, compressor plants, bakeries, laundries, hotels, motels etc.

Advantages and Innovations

- No chemicals needed for water treatment to protect various appliances against scaling
- Environment protection
- Constant chemical composition of the treated water
- Simple and fast installation without interrupting a pipeline
- Water treatment for piping with diameter from 10 mm - 1000 mm
- Much lower investment, operation and maintenance costs compared with other methods of water treatment
- Very competitive prices compared with world's famous producers

- Very high quality - ISO 9001 certification
- Three years guarantee, one-year money back guarantee

Stage of Development

Already on the market

IPR Status

Copyright

Keywords

Technology

002006006	Pipeline Technology
005006005	Physics of Fluids
010002009	Water Pollution / Treatment
03001001	Cleaning Technology
05004	Separation Technologies
10002006	Ecology
10002007	Environmental Engineering / Technology

Market

08004	Pollution and Recycling Related
08004003	Water treatment equipment and waste disposal systems
09008002	Water, sewerage, chemical and solid waste treatment plants
09008004	Other utilities and related firms

NACE

E.36.0.0	Water collection, treatment and supply
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Partner Sought

Type and Role of Partner Sought

The company is looking for partners for further technical development and testing.

Type of Partnership Considered

Commercial agreement with technical assistance
Technical cooperation agreement

Technology Offer

Slovak research institute is offering pressure-sensitive adhesives with permanent stickiness which can be used for protection of trees from crawling insects by direct application on the tree trunk

Summary

Slovak institute has developed new non-solvent pressure-sensitive adhesives with permanent stickiness. The adhesives are neither toxic nor phytotoxic. The adhesives can be used for protection of trees from crawling insects by direct application on the tree trunk. The institute is looking for partners from the agriculture sector interested in the testing of new applications. Preferred cooperation is via commercial agreement with technical assistance or via technical cooperation agreement.

Creation Date 29 July 2015
Expiration Date 30 July 2016
Reference TOSK20150729001

Details

Description

Established Slovak research institute with long history situated in western Slovakia has developed and produced new non-solvent pressure-sensitive adhesives with permanent stickiness and excellent adhesive properties. The adhesives are toxic neither for people nor for plants. They are available in the form of an open film and keep a high stickiness in various climatic conditions during long periods of time. Their application on vertical surfaces is very easy due to the thixotropic properties of the adhesive. These adhesives can be used for protection of trees from crawling insects by direct application on the tree trunk.

Domain of the technology application: The adhesives can be used for protection of trees from crawling insects by direct application on the tree trunk.

The institute is looking for partners to cooperate with via commercial agreement with technical assistance (the research institute is offering the technology for acquisition) or via technical cooperation agreement (the research institute is looking for partners from agriculture sector to help him continue the technical development).

Advantages and Innovations

The adhesives are toxic neither for people nor for plants. They are available in the form of an open film and keep a very high stickiness in various climatic conditions during very long periods of time. Application on vertical surfaces is very easy due to the thixotropic properties of the

adhesive. These adhesives can be used for protection of trees from crawling insects by direct application on the tree trunk.

The producer guarantees very long duration time and very strong stickiness, both superior to those of the adhesives usually available on the market.

Stage of Development

Already on the market

IPR Status

Secret Know-how

Keywords

Technology

02007001	Adhesives
02007016	Rubber
07002004	Silviculture, Forestry
10002006	Ecology

Market

08001007	Coatings and adhesives manufactures
08001018	Polymer (plastics) materials
08001022	Agricultural chemicals
09005	Agriculture, Forestry, Fishing, Animal Husbandry & Related Products

NACE

C.20.5.2	Manufacture of glues
C.20.5.9	Manufacture of other chemical products n.e.c.

Partner Sought

Type and Role of Partner Sought

The research institute is in preference looking for partners from the agriculture sector interested in the testing of new applications.

Type of partner sought: industry - company

Activity of partner: agriculture sector

Role of partner: testing of new application. The preferred cooperation could be conducted via commercial agreement with technical assistance or via technical cooperation agreement.

Type and Size of Partner Sought

SME 11-50, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Commercial agreement with technical assistance

Technical cooperation agreement

Technology Offer

Technology and know-how of manufacturing of small wastewater treatment plants and proprietary wastewater treatment technology for decentralised solutions on offer

Summary

A Slovak SME specialised in development, production and installation of individual and small wastewater treatment plants with a special patented technology is looking for business partners from Israel and India to conclude a licence, manufacturing and commercial agreement with technical assistance. The technology of treatment has all the necessary European certificates, has been tested in Germany and has the local approvals from Germany and France.

Creation Date	24 June 2015
Expiration Date	14 July 2016
Reference	TOSK20150507001

Details

Description

A Slovak company established in 2004 deals with manufacture of small wastewater treatment plants, rotomoulding products and proprietary wastewater treatment technology for decentralized solutions and operates in more than 20 countries worldwide. The company is looking for foreign partners from India and Israel who could be interested in a special tank manufacturing technology as well as a wastewater treatment technology.

The technology uses a continuous-flow activated sludge process with biological nitrogen and phosphorus removal, which combines the following processes in a single tank: mechanical pre-treatment, excess sludge collection, biological treatment using a low-loaded activated sludge process, separation of the treated water from activated sludge in the final clarification chamber, flow balancing of fluctuating inflow of wastewater in the retention chamber. The treatment process consists of several technological processes. Raw wastewater flows into the non-aerated activated sludge chamber with anaerobic and anoxic zones creating and admixture with the recirculated activated sludge, the mechanical pre-treatment of inflowing raw wastewater and the decomposition of coarse impurities, denitrification and accumulation of readily degradable organic contamination is taking place in the non-aerated activated sludge chamber, which is divided by inner partition walls to create a vertical flow labyrinth, where internal circulation is established.

A patented technology of wastewater treatment but also a complete transfer of know-how, technology and expertise of manufacturing, selling, installation and long-term maintenance of the wastewater treatment systems is offered from the side of a Slovak SME. It means a long-term cooperation with the partner from target countries.

The company offers also a common development of the product adaptation to local

requirements in the target countries. Tanks of treatment plants are produced by welding from polypropylene sheets. Production is very flexible in comparison with a more common rotomoulding tank production or glass reinforced polyester tank production. Which enables the change of dimensions and volumes of the tanks.

The technology used in the purification process ensures the high quality of treated water including nitrogen and phosphorus removal along with low investment and operating costs. The desired outcome of an international cooperation with a partner from India or Israel is a commercial agreement with technical assistance on the transfer of know-how, technology and expertise on manufacturing of wastewater treatment plants in a form of a manufacturing agreement and a license agreement on transfer of rights to our proprietary wastewater treatment technology with nitrogen and phosphorus removal.

Advantages and Innovations

The tank of the wastewater treatment plant made from polypropylene sheets is lightweight in comparison with similar plastic products made by rotomoulding technology or glass reinforced polyester tanks. Due to the applied patented technology of wastewater treatment it has smaller dimensions, thus can be easily handled and transported while the transportation costs are minimized. The treatment technology has a high treatment efficiency and due to the patented technology of vertical flow labyrinth it has a low waste production and very low energy consumption. The wastewater treatment plants produced according to the company's know-how are distributed to most of the European countries with different conditions, legislative requirements and specifications.

Stage of Development

Already on the market

IPR Status

Secret Know-how, Patents granted, Granted patent or patent application essential, Copyright

Keywords

Technology

10002007	Environmental Engineering / Technology
10002013	Clean Production / Green Technologies
10004001	Industrial Water Treatment
10004003	Wastewater Recycling

Market

08004003	Water treatment equipment and waste disposal systems
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NACE

C.27.9.0	Manufacture of other electrical equipment
E.36.0.0	Water collection, treatment and supply

Partner Sought

Type and Role of Partner Sought

SMEs or other company types of different sizes. The Slovak company requires an expertise of partner sought in the field of wastewater treatment.

Type and Size of Partner Sought

SME 11-50, SME <10, SME 51-250

Type of Partnership Considered

License agreement
Manufacturing agreement
Commercial agreement with technical assistance

Technology Offer

Thick (>1 μm) boron layers on semiconductors with good adhesion

Summary

Spanish researchers have found a way of employing Electron Beam Physical Vapor Deposition (EBPVD) to obtain boron coatings up to 3 μm thick, highly uniform, thermomechanically stable, and with good adhesion to the substrate. This represents a landmark in the fabrication of efficient neutron detectors. The method uses extra adhesion layers and controlled cooling to reduce surface peeling & thermal or mechanical stress. Manufacturers of radiation detectors are sought for patent licence are sought.

Creation Date 25 March 2015
Expiration Date 14 July 2016
Reference TOES20150311001

Details

Description

The goal: not to miss neutrons.

Boron coatings have become widely popular since the use of the isotope ^{10}B for active neutron detection was discovered. Helium (^3He) detectors have been traditionally employed for this task, but since helium stocks are planned to last only a few decades, alternative detection methods are needed. The best substitute candidates so far are semiconductor detectors, which employ coated substrates.

However, their optimal use as neutron detectors demands thick coatings (of the order of 3 μm), a laborious, difficult and dangerous task for boron, since it is flammable and highly reactive under environmental conditions not far from those employed in the layer growth. Boron deposition suffers from bad adhesion and thermal or mechanical stress, which also contribute to the difficulty of the problem.

The technique used by the Spanish research group active in Radiation detection employs the ultra high vacuum chamber of an Electron Beam Physical Vapor Deposition (EBPVD) system, where substrates, free from impurities and defects, are placed and heated, once pressure has been lowered to 10^{-7} mbar. After the electron current is stabilized, the opening of a shutter initiates the deposition. Boron deposition velocity is of the order of 1 $\mu\text{m}/\text{h}$. Finally, the substrate is cooled under controlled conditions before it is extracted from the vacuum chamber, so that thermal stress can be completely released.

Manufacturers of radiation detectors interested in a patent licence are sought for.

Advantages and Innovations

- The main application is the fabrication of thermal neutron detectors based either on semiconductors or gaseous chambers, widely used in security, health, quality control,

aerospace, etc.

- The special control of the process conditions allows the deposition of up to 3 µm of pure 10B, overcoming the tens of nanometer restriction of previous methods.
- The layers have very good adhesion and excellent uniformity over different materials, and are stable with time. These characteristics ensure proper operation of the neutron detectors.
- The foam obtained is able to capture more air, hence it has a texture more uniform, light, smooth and elastic than that obtained with normal egg white.
- Deposition can be made on individual devices or wafers using hard mask or optical photolithography.

Stage of Development

Prototype available for demonstration

IPR Status

Patent(s) applied for but not yet granted

Keywords

Technology

01001002	Digital Systems, Digital Representation
05005	Micro- and Nanotechnology
10002007	Environmental Engineering / Technology
10002010	Remote sensing technology

Market

05004004	Medical instruments
06007001	Other energy production

NACE

M.71.2.0	Technical testing and analysis
M.72.1.1	Research and experimental development on biotechnology
M.72.1.9	Other research and experimental development on natural sciences and engineering

Partner Sought

Type and Role of Partner Sought

Industrial partner is sought for license agreement.

Type and Size of Partner Sought

SME 11-50, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

License agreement

Technology Offer

Novel technology for noble metals concentration from raw waste

Summary

Lithuanian SME specialized in electronic waste recycling developed a new technology for concentration of noble metals in the e-waste in the economic and ecological way. By applying ecologically safe chemicals and electro-deposition offered technology enables to reach 2-10% concentrate of Au, Ag, Pd. The company is offering a technical collaboration, licensing and commercial agreement with technical assistance.

Creation Date 27 August 2015
Expiration Date 26 August 2016
Reference TOLT20150827001

Details

Description

Electronic waste (printing circuit boards (PCBs), catalyzers used in automotive and chemical industry) is characterized by significant heterogeneity and relatively high complexity. The composition of such waste is very diverse with relatively low levels of precious metals being present as deposited coatings of various thicknesses in conjunction with copper, solders, various alloy composition, non-ferrous and ferrous metals.

Today, large scale companies use “acidic” method for separation non-targeting metals (Pb, Sn, Cu and etc.) and for recovery of noble metals. These technologies are expensive and requires additional equipment for utilization of toxic compounds. By using conventional technologies environmental damages are caused, during the recycling processes:

- Cyanide leaching has been in use since several decades for economic gold extraction although it is environmentally unfriendly.
 - For recovery of platinum or palladium all the e-waste is treated by a mixture of hydrochloric and nitric acids that results in big amount of poisonous NO₂ gas emissions.
- Lithuanian SME in cooperation with university developed new technology that is based on highly promising and innovative research and that has following new properties:
- Noble and accompanying metals are leached in controlled corrosion route into relatively small volume of solution using environmentally friendly compositions of oxidants and ligands (dissolved oxygen, compounds of Fe⁺³).
 - Lead, tin and other accompanying metals are easily separated.
 - Mixture of metals is concentrated by electrodeposit (instead of “wet chemical path”) using electrochemical methods
 - The concentrate produced by the offered technology might be treated in the convenient way in order to separate individual noble metals having purity ~99 %.

Advantages and Innovations

- High selectivity and ease of control is offered by applying electrodeposit (instead of “wet chemical path”).
- High efficiency of noble metals concentration. The results are highly encouraging because the concentration of noble metals are more than hundred times higher than in the raw e-waste (concentration of Pt, Pd, Ag, and Au is ~ 0,01%), i.e. from 1000 kg of waste is possible to accumulate 14 kg of concentrate using offered technology.
- Ecological – no cyanide or hydrochloric and nitric acids are needed for the process.

Stage of Development

Available for demonstration

IPR Status

Secret Know-how

Keywords

Technology

02002012	Mixing (powder, etc.), separation (sorting, filtering)
05004001	Filtration and Membrane Processes
05004002	Extraction
10002007	Environmental Engineering / Technology
10003004	Recycling, Recovery

Market

03	OTHER ELECTRONICS RELATED
08004	Pollution and Recycling Related
08004002	Chemical and solid material recycling
09003001	Engineering services
09007004	Engineering and consulting services related to construction

NACE

E.38	Waste collection, treatment and disposal activities; materials recovery
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Partner Sought

Type and Role of Partner Sought

- Type of partner sought:
Academia or industry

- Specific area of activity of the partner:
Electronic waste treatment and metal recovery.

- Task to be performed:
Further joint development and commercialization of the technology

Type and Size of Partner Sought

SME 11-50, University, Inventor, R&D Institution, SME <10,>500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

License agreement
Commercial agreement with technical assistance
Technical cooperation agreement

Technology Offer

Maritime engineering in the largest wave flume of the world

Summary

A German institute with vast know-how in coastal and maritime engineering has one of the largest laboratory facilities worldwide, the large wave flume. The computer-controlled, hydraulically driven wave maker allows the accurate simulation of natural waves, storm surges, tsunamis and rogue waves under laboratory conditions. The institute is looking for partners from maritime industry interested in cooperative research and development agreements, in-house research and technical cooperation.

Creation Date 27 July 2015
Expiration Date 11 August 2016
Reference TODE20150724001

Details

Description

A German institute working on coastal and maritime engineering has one of the largest laboratory facilities worldwide. The large wave flume has 300 m length, 5 m width, 7 m depth and wave heights up to more than 2 m. The computer-controlled, hydraulically driven wave maker with a maximum power of 900 kW allows the accurate simulation of natural waves, storm surges, tsunamis and rogue waves under laboratory conditions.

Several experiments on dikes and breakwaters, on coastal erosion and protection as well as on the offshore wind and wave energy devices conducted by the institute have had significant impact on basic as well as applied research in coastal and maritime engineering and were crucial for the design and dimensioning of structures and devices.

The research of the institute is mainly application-oriented. Co-operations with companies from the maritime industry are sought through a variety of contractual mechanisms, including cooperative research and development agreements, in-house research at university laboratories and other forms of technical cooperation.

Advantages and Innovations

- One of the largest laboratory for coastal and maritime engineering facilities worldwide;
- Vast know-how in coastal and maritime engineering with significant impact on basic and applied research;
- Equipment for large-scale experiments;
- Fulfillment of international standards.

Stage of Development

Already on the market

IPR Status

Other

Keywords

Technology

04005002	Hydropower
04005008	Wind energy
07003003	Marine Science
10001002	Assessment of Environmental Risk and Impact
10002007	Environmental Engineering / Technology

Market

06003003	Wind energy
06003004	Marine energy
09005	Agriculture, Forestry, Fishing, Animal Husbandry & Related Products

NACE

M.72.1.9	Other research and experimental development on natural sciences and engineering
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Partner Sought

Type and Role of Partner Sought

- Type of partner sought: industrial partners for bilateral research and technical cooperation.
- Specific area of activity of the partner: maritime industry; coastal protection; offshore wind and wave energy.
- Possible tasks to be performed by the partner sought: (1) jointly develop and participate in research and development projects on coastal and maritime engineering or related topics; (2) assign in-house research at university laboratories related to the needs of the partner; (3) if requested by the potential partner other access to the know-how and the laboratories will be considered under a technical cooperation agreement

Type of Partnership Considered

Technical cooperation agreement
Research cooperation agreement

Technology Offer

URGENT: small hydro power plant optimally combining protection of aquatic ecosystems with low priced power generation

Summary

An Austrian SME developed a modular power generation system which fully complies with the EU Water Framework Directive to protect ecology and biology of rivers. It is easily and quickly installed on existing sluices at low investment costs and suitable for many river conditions. A European patent was granted. The SME is looking for licensees for Germany. In addition, it is urgently (until 8.9.2015) looking for buyers of the patent for European countries other than Austria and Germany.

Creation Date	29 July 2015
Expiration Date	30 July 2016
Reference	TOAT20150729001

Details

Description

The current Water Framework Directive from the European Union (EU) aims to protect and restore aquatic ecosystems. According to this EU directive, running water (i.e. a river) has to be open (traversable) from the beginning to the end for fish, sediments and bed load (solid material such as stones, which is transported along with the running water). In addition, at weir systems a certain amount of residual water after the weir has to be guaranteed. As a consequence, approval of new water power plants will be extremely difficult in the future because most of the current systems are not able to fulfill all requirements of the directive.

The Austrian SME developed a system for a small water power plant, which fully complies with the EU directive. The system can be installed on an existing sluice (hydraulic gates) of a weir. It mainly consists of a radial turbine which is arranged downstream of the weir on the sluice below an overflow ramp. So the turbine can be moved vertically together with the sluice to fulfill the specified residual water flow in times of low water and to adjust the surplus water flow in times of high water. This adjustable water flow drives the turbine for power generation. In addition, the turbine is mounted so as to be vertically displaceable on the sluice. This enables fine adjustment of the position of the turbine to optimize its performance and the protection of fish. In times of floodwater the turbine can be moved upwards on the sluice to protect it from heavy bed load.

An electronic control unit is in development to automatically adjust the vertical position of the turbine according to river conditions (e.g. amount of water, portion of bed load etc.).

The system is designed as a modular construction. Several modules can be placed side by side on the weir.

Technical details:

- width of modules: 1m
- diameter of radial turbine: 1.20 m
- turbine efficiency: > 80%
- output: 10-100 kW (the prototype is designed for 20 kW and a residual water flow of 2000 l/sec)
- sufficient water storage level: 2-3 m

For this novel weir plant concept a European patent (EP) was granted. The Austrian SME will convert it into a national patent in Austria and Germany and is looking for licensees for Germany.

The Austrian SME is also looking for companies from other countries of the European Patent Convention, which are interested in buying the patent for European countries other than Austria and Germany. This is very urgent because the deadline for converting the EP into national patents is already at the beginning of October. Therefore the deadline for expressions of interests is the 8 Sept. 2015.

Advantages and Innovations

The main innovative aspect of the system is the positioning of the turbine downstream of the weir directly on the sluice together with the possibility of vertical adjustment of the turbine.

The advantages of the novel water power system are:

- it fully complies with the EU Water Framework Directive: able to protect and restore aquatic ecosystems
- it is designed in a modular way and simply and quickly installed on existing sluices => low investment and maintenance costs => low priced power generation
- it reduces bed deepening and bank collapsing downstream of a weir
- it decreases deposition of sediments and bed load upstream of a weir; it helps to maintain the volume of the river bed, which is crucial in times of high water to avoid flooding
- it enables passage of fish (in addition fish lips, which are mounted at the edges of the turbine, prevent injuries)
- it is suitable for many rivers and river conditions
- it is suitable for serial production
- the vertical position of turbine can be adjusted automatically (electronic control unit is in development)
- a patent is granted (EP): national patent buyer is able to grant licences

Stage of Development

Under development/lab tested

IPR Status

Patents granted

Keywords

Technology

03002	Process Plant Engineering
04002009	Turbines
04005002	Hydropower

10002006	Ecology
10004010	Hydrology

Market

06002004	Hydro-electric
08003006	Power transmission equipment (including generators & motors)
08003007	Other industrial equipment and machinery
09008001	Electric companies

NACE

G.46.4.6	Wholesale of pharmaceutical goods
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Partner Sought

Type and Role of Partner Sought

Area of activity of the partner:

- manufacturer of hydro turbines
- water power plant construction and/or operation companies
- steel construction for hydraulic engineering (manufacturer of weir panel, sluice, grate etc.)
- manufacturer of agricultural machinery or plant construction companies to build up a new business segment

Task to be performed by the Partner:

For this novel weir plant concept a European patent (EP) was granted. The Austrian SME will convert it into a national patent in Austria and Germany and is looking for licensees for Germany.

The Austrian SME is also looking for companies from other countries of the European Patent Convention, which are interested in buying the patent for European countries other than Austria and Germany. This is very urgent because the deadline for converting the EP into national patents is already at the beginning of October. Therefore the deadline for expressions of interests is the 8 Sept. 2015.

The Austrian SME also offers access to a large technical network (R&D organisations and companies) involved in the further development and application of the technology.

Type and Size of Partner Sought

SME 11-50, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

License agreement

Technology Offer

System for bioelimination of volatile organic compounds and odours from the air

Summary

An SME from Poland has elaborated a compact air filtering bioreactor that cleans various gases emitted during technological processes. The solution is based on a biological method, operates at low cost and is eco-efficient. The company is looking for industrial partners facing the problem of volatile organic compounds and odours emission in order to implement and test the solution within commercial agreement with technical assistance, license or services agreement.

Creation Date 02 August 2013
Expiration Date 04 August 2016
Reference TOPL20130730003

Details

Description

An SME from southern Poland designs and performs systems using a compact three-phase air filtering bioreactor. The bioreactor cleans various gases emitted during technological processes by means of biological methods. The automated system operates continuously, removing volatile organic compounds and odours from the exhaust gases.

The key to the solution is the individual adaptation of bacteria strains used for biodegradation of selected gaseous substance performed each time depending on the types of the identified pollutants.

The VOCs (volatile organic compounds) and odours bioelimination technology can be used in e.g. chemical, petrochemical, print and heavy industries.

Before the system is installed, a service can be performed, consisting of chromatographic, spectrographic, quality and quantity analyses of the biological material. The company provides technical consulting services as well.

That is why the company is ready to enter the following types of partnerships: commercial agreement with technical assistance as the product is advanced technologically some technical assistance is necessary to acquire the technology with the possibility of using it. The company may offer also a license and after-sale as well as consultancy and analytical services.

Advantages and Innovations

The solution characterizes with the following advantages:

- (1) low operating costs of the filtering process (small energy footprint, no need to use catalysts, low failure rate, low maintenance costs, high automation level and on-line monitoring conducted by the manufacturer),
- (2) accessibility of materials (bacterial population - specially adapted micro-organisms),
- (3) long lifetime period of the system,
- (4) no explosion hazard,

- (5) high level of pollution reduction,
- (6) high eco-efficiency (absence of secondary pollutants, no CO2 or NOx emission).

Stage of Development

Available for demonstration

IPR Status

Secret Know-how, Trade Marks

Keywords

Technology

010002001	Air Pollution/Treatment
10002007	Environmental Engineering / Technology

Market

08004001	Air filters and air purification and monitoring equipment
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NACE

C.26.5.1	Manufacture of instruments and appliances for measuring, testing and navigation
M.74.9.0	Other professional, scientific and technical activities n.e.c.

Partner Sought

Type and Role of Partner Sought

The company is looking for industrial partners facing the problem of volatile organic compounds and odours emission in order to implement and test the solution within license or commercial agreement with technical assistance. The company is also ready to sign the service agreement as it provides analytic and consulting services as well.

Type and Size of Partner Sought

SME 11-50, SME <10,251-500, SME 51-250

Type of Partnership Considered

- Services agreement
- License agreement
- Commercial agreement with technical assistance

Technology Offer

Phosphorous removal and recovery from wastewater

Summary

An Irish water treatment company is seeking licensees in the water treatment sector for its novel technology for the removal and recovery of phosphorous from wastewater streams. The treatment achieves levels of below 0.03 milligrams per litre. The trialled and tested technology uses a specifically tailored synthetic filter media to remove the phosphorous from the waste stream. The process is viewed as competitive from both technical and commercial viewpoints.

Creation Date	15 July 2014
Expiration Date	19 August 2016
Reference	TOIE20140715002

Details

Description

Damage to water courses due to excess algal growth from the build up of nutrients such as phosphorous and nitrogen is a recognised problem in most jurisdictions. As the algae die and decompose, high levels of organic matter and the decomposing organisms deplete the water of available oxygen, causing the death of other organisms, such as fish.

Phosphorus is a common constituent of agricultural fertilizers, manure, and organic wastes in sewage and industrial effluent and can also be present in industrial cleaners and other chemical products entering the water table.

Legislation is increasingly moving towards reduction of the levels of phosphorous entering the water table and methods of reducing phosphorous from waste streams are of high interest. A commonly accepted target is to bring the levels below 0.03 milligrams per litre.

Treatment processes commonly employ adsorption media based on Iron, calcium and aluminium salts. The developed system employs a tailored synthetic adsorption medium which removes the phosphorous effectively and is readily and quickly regenerated, using a back-flushing technique. The precipitated phosphorous from the process is in the form of a reusable fertiliser additive.

The system on offer for license is a containerised unit system that is easily installed, operated and maintained. This would be of interest to companies currently in the water treatment business or interested in entering this market.

Advantages and Innovations

The advantages of this technology include:

- Reduced cost and ease of operation

- The filter media used is readily regenerated
- It avoids the use of iron and other salts
- The process has been developed as a containerised unit and is easily integrated into existing systems.
- Low maintenance operation
- Scalable to suit demand
- Separated phosphorous in a reusable form

Stage of Development

Already on the market

IPR Status

Exclusive Rights

Keywords

Technology

10002011 Soil and Groundwater Pollution

Market

08004003 Water treatment equipment and waste disposal systems

NACE

E.36.0.0 Water collection, treatment and supply

Partner Sought

Type and Role of Partner Sought

The partner company for this offer would ideally, but not essentially, be a company currently supplying systems to the water treatment sector.

Type and Size of Partner Sought

SME 11-50

Type of Partnership Considered

License agreement

Technology Offer

Machine to produce special 3D textiles

Summary

A Czech university has developed a machine that produces 3D nonwovens with various sizes of layers; from thin (0,5-2 mm) to thick (7-15 mm). Additional layers (nanowires, papers, plastics, metal foils, etc.) can be added simultaneously. End products include namely filters but can be adapted also for insulations or sorbents. The university is looking for partners interested in further development based on technical cooperation and for companies interested in production under a license agreement.

Creation Date 16 March 2015
Expiration Date 13 July 2016
Reference TOCZ20150316004

Details

Description

A machine developed by the researchers from the Czech university is intended mainly for manufacturing of specialized multilayer - folded 3D fabrics. Such fabrics might be used for producing filters especially for filtering gases and liquids. The unique machine enables production of special products to filter air, water and oil and is in comparison with competitive technologies characterized by higher absorption and therefore higher efficiency. Multiple filter layers also enable control and setting of the filtration process.

In comparison with machines produced by the competitors, the design of the machine allows to insert several different materials such as textile, paper, film (including nanolayers), which leads to gradual layers' fixation and creation of 3D structure made of these materials. The manufacturing process also allows to add layers containing various powders, including nanopowders.

Products can be manufactured from two or more layers in a single process step. The inner layer may be e.g. plastic foil, aluminium foil, layer of nanofibres etc. In addition, it is possible to reinforce the surface of the product, again, in a single process step.

Principle of technology lies in the vertical stacking of the incoming semi-product (nonwoven textile) and subsequent fixation of the structure. Fixation of the structure is mechanical with possibility to be combined with heat.

As an incoming semi-product (nonwoven textile) can be used, e.g., heat-bonded nonwoven fabrics, needle punched nonwovens (classic and water-jet), weaving nonwovens (containing fleece), spun-bond with a low degree of calendering.

Technical applications of the output products are in the areas of acoustic insulation in the automotive, filtration media and special filters, absorbent cores, seals, vibration control, carpet pads, gaskets etc.

The university offers a licence for manufacturing the machine based on the licensing agreement as the university is not a manufacturer. The university is also looking for partners interested in further development of the machine in order to develop applications in nanofiber, filtration and/or sorbents (application prevent bio-contamination etc.) based on technical cooperation agreement.

Advantages and Innovations

Innovations:

The novelty of the machine and its key advantage is in the creation of 3D-folded product, which is suitable for further processing into filters with enhanced capacity and durability. Such principle is not yet used by the competitors and is characterized by higher production efficiency and low operating costs. Some types of filters have been already tested in accredited laboratories but the composition of the filter (various filter layers) needs to be adapted for to specific filtration requirements according to the results of other tests.

The end product from the machine can be a filter having favourable value between volume and sorption surface mainly due to the 3D-fabric characteristics such as higher capture efficiency of particles, less fouling and hence longer service - life. Additionally, the machine can be set up in a way that the filter can be composed of different layers, thus the filter may have different parameters for different types of filtration.

Advantages:

- Small build-up floor space
- Production speed is up to 10 m / min
- Product thickness: 4 -7 mm
- Product weight: 300 to 800 g/m²

Stage of Development

Prototype available for demonstration

IPR Status

Patents granted

Keywords

Technology

02007018	Advanced Textile Materials
03005005	Non weaving related to Textiles Technology
10001001	Acoustic safety
10002002	Outdoor Air Pollution/Treatment

Market

08003005	Other industrial machinery for textile, paper & other industries
08004001	Air filters and air purification and monitoring equipment
09004003	Textiles (synthetic and natural)

NACE

C.13.1.0	Preparation and spinning of textile fibres
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C.13.3.0	Finishing of textiles
C.13.9.5	Manufacture of non-wovens and articles made from non-wovens, except apparel

Partner Sought

Type and Role of Partner Sought

Type of partner sought: industry

Specific area of activity of the partner:

Manufacturer of air filtration, manufacturer of soundproofing, manufacturer of textile machines

Task to be performed by the partner sought:

In the case of licensing agreement:

Acquiring a licence for manufacturing the machine

In the case of technical cooperation agreement:

Joint further development and adaptation of the machine for applications in nanofiber, filtration and/or sorbents (application prevent bio-contamination etc.).

Type and Size of Partner Sought

SME 11-50,>500 MNE,251-500,SME 51-250,>500

Type of Partnership Considered

License agreement

Technical cooperation agreement

Technology Offer

Innovative damping solution in active and passive vibration to avoid resonance, perturbations and tonality

Summary

This Belgian SME specialised in vibration control, offers its services in vibration diagnosis, requirement specifications, custom-made compact vibration damping and commissioning. The company has an extensive track record and offers innovative solutions regarding vibration control, sensing systems and high precision mechanisms; in collaboration with its customers. The company seeks partners interested in services agreements for experienced support for vibration diagnosis.

Creation Date 04 August 2015
Expiration Date 17 August 2016
Reference TOBE20150708001

Details

Description

The Belgian company does not just manufacture custom-made highly effective isolation, damping or cancelling systems, but also promptly provides experienced support for vibration diagnosis, requirement specifications, and commissioning.

Vibrations play a critical role in machine limitations, starting from the conventional limitations of machine performances (e.g. printing resolution) and machine reliability (fatigue and wear), to more sophisticated phenomenoms like chatter (machine tool instability) or control-flexibility interaction. There are mainly three available methods, each of them being implemented by either active or passive means. Vibration isolation, vibration damping and anti-noise.

Vibration isolation prevents perturbations from reaching the sensitive payload (f.i. car suspension).

Structural damping avoids perturbations being amplified by structural resonances.

Active damping systems are closed-loop devices, relying on actuators, sensors and a feedback control algorithm.

Anti-noise consists in cancelling the vibration by generating a force opposite to the incoming perturbation. Whenever the sensitive area cannot be isolated from the vibration excitation forces and whenever the vibrations are not amplified by the mechanical structure but mainly transmitted, the only remaining method to reduce the vibration (without a complete re-design of the system) is the anti-noise where a force opposite to the vibration excitation (same frequency, same amplitude but opposite phase) is generated resulting in a destructive interference process. Active anti-noise systems are open-loop devices, relying on actuators, sensors and a feedforward control algorithm.

Passive anti-vibration systems, both damping and anti-noise, are often based on Tuned Mass

Absorbers or TMA, where an oscillating spring-mass system is mounted on the target structure, i.e. at the location where the vibration is to be cancelled out. This TMA will absorb the vibration energy in a frequency band around its own resonance/tuning frequency. Thus, around that given frequency, the vibration energy is transferred into the TMA but not damped.

Vibration reduction requires dedicated mechanical design and expert knowledge of the problem and its possible and compatible solutions. For example, TMA technology is well suited to address acoustic tonality issues (wind turbine gearbox, compressor...) where the vibration energy is transferred in a secondary device whose acoustics emission is drastically reduced.

The Belgian company is interested in finding partners facing vibration problems in their specific area of activity and for which its expertise for developing new solutions would be of interest. Collaboration could be envisaged under the form of services agreements.

Advantages and Innovations

While vibration reduction technology has been well known for years and conceptually seems 'simple', each implementation requires specific attention.

The company's knowhow is essential in the process: Aspects such as added weight, tuning frequency, available space, environmental factors, and manufacturing costs are taken into account. Particularly the mechanical interface design is of primary importance. Poor interface design can drastically reduce the absorption performances. Sometimes the situation may even be worse than before! Due to its extensive (space) expertise solutions are provided in short time frames.

The technology provided by this company has the advantage of being compact; non-intrusive (no structural modification is needed); additive (the more you attach to the structure or machine, the more damping you get); needing no external mechanical connections and have a wide operating bandwidth.

Stage of Development

Already on the market

IPR Status

Secret Know-how

Keywords

Technology

05003001	Vibration and Acoustic engineering
09001001	Acoustic Technology related to measurements
09001005	Mechanical Technology related to measurements
10002014	Noise Pollution

Market

06003003	Wind energy
08002001	Energy management
08003006	Power transmission equipment (including generators & motors)
08003007	Other industrial equipment and machinery

09001005

Motor vehicles, transportation equipment and parts

NACE

M.71.1.2

Engineering activities and related technical consultancy

Partner Sought

Type and Role of Partner Sought

Vibrations occur in all domains of activity. Therefore potential partners can be active in all domains, machines or products. The only initial condition is that should be facing acoustic and vibration difficulties.

Type and Size of Partner Sought

SME 11-50, University, Inventor, R&D Institution, SME <10,>500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Services agreement

Technology Offer

Innovative airborne wind energy plant

Summary

German SME developed an award-winning airborne wind energy plant, combining energy kites as airborne powerunits with a generator on an electric locomotive, running on a circular track system. The system is successfully running on a test track. Investors and partners for joint venture agreements, as well as companies interested in licence agreements on the technology are sought.

Creation Date 22 January 2015
Expiration Date 05 July 2016
Reference TODE20150122002

Details

Description

A German SME, founded by an aeronautical engineer, developed an innovative technology to obtain energy from wind with high economic viability and minimal environmental impact. Energy kites as airborne powerunits are combined with a generator on an electric bogie, running on a circular track system.

Like a sail the kite is producing energy pulling the bogie along the railroad tracks while going close-hauled or running before the wind. Only in idle position where the bogie needs to move along the track against the wind, the generator will pull the kite until it catches forward wind again. Depending on the length of the circular track several bogies and kites may be run at the same time. The size of kites is changeable over the year and can be adapted to seasonal conditions and the technology is able to duck down automatically when a storm appears.

The technology has several advantages in comparison to regular wind turbines: As the kites are flying at an altitude of more than 200m, the increased windspeed at this height has a huge positive energy effect and wind availability is almost constant. The kites flying high above in the sky are nearly no disturbance of the natural scenery, they have low noise emission and no strain owing to shadow cast or light reflections is conceivable. As the system is moving in low speed it is safe for birds and bats.

The system consists of longtime proven components: standard railroad tracks, electro generators and motors from bogies, standard CNC-machines, ropes and kites. Thanks to regional and EFRE funding the company could prove the functionality of the concept on a 400m straight test track, a demonstration system has been assembled and computer simulations have been checked against actual operational flight data.

Research confirmed by an independant study by Fraunhoferinstitut IWES shows that the system is able to generate energy at comparable prices with fossil fuel systems. Thus electricity production costs are unbeatable in comparison to other green energy sources. The company holds global patents for the technology.

The company is interested in cooperations with:

- Investors for the first full-sized airborne wind energy plant and partners for joint venture agreements, contributing capital and/or marketing and sales network to take the final step to market maturity.
- Companies interested in license agreement on the technology.

The company is especially interested in establishing contacts to China and cooperates with a consultant who will conduct negotiations in the name of the company fluently in Chinese language.

Advantages and Innovations

- technology for energy production that is world wide available and grid independent
- Operational costs comparable to fossil fuels
- Profitable even without subventions
- Capacity factor / energy supply up to 70% per annum
- Insignificant disturbance of the natural scenery
- Only longtime proven components
- Minimal environmental impact
- Low noise emission
- Bird and bat safe (low speed moving)

Stage of Development

Available for demonstration

IPR Status

Patents granted

Keywords

Technology

04005008	Wind energy
10002013	Clean Production / Green Technologies

Market

06003003	Wind energy
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NACE

D.35.1.1	Production of electricity
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Partner Sought

Type and Role of Partner Sought

- Investors for the first full-sized airborne wind energy plant
- Companies willing to license the technology
- Partners for a joint venture contributing capital and/or marketing and sales network

Type and Size of Partner Sought

SME 11-50, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

License agreement
Joint venture agreement

Technology Offer

Bioplastics for flexible applications

Summary

A German manufacturer of bioplastics offers biodegradable materials for flexible applications, such as films, bags and wrappings. Food contact regulations are met. Containing a maximum amount of renewable resources, the materials achieve properties and processibility close to conventional plastics. The most suitable composition is found for any application. Industrial manufacturers interested in using bioplastics in their processes are sought for commercial agreements with technical assistance.

Creation Date	30 July 2015
Expiration Date	30 July 2016
Reference	TODE20150730004

Details

Description

A German company is specialised in development and production of bio-based, biodegradable and compostable plastics using the highest amount of renewable resources.

Bioplastics generally replace conventional materials such as low density polyethylene (LDPE), high density polythene (HDPE) as well as polystyrene (PS) and polypropylene (PP). For packaging applications these need to be converted into film which is as thin as possible while maintaining high tensile strength.

The German company offers completely biodegradable bioplastics for flexible applications. These are based entirely or partially on natural raw materials. The bioplastics can be converted using a wide variety of processing methods, such as blown-film extrusion, co-extrusion and lamination. The main field of application is in flexible films, such as agricultural, household or hygiene films. Such products include magazine wrappings, food packaging, bags, waste bags and transparent multilayer films. It is however also possible to produce thermoformed articles and injection moulded articles, such as bottles, straws or short-living cutlery.

In agricultural applications there is a special benefit: Mulch films made from the German company's bioplastics do not need to be collected after harvest. They can be ploughed in with the remaining plant material. Also compostable waste bags can be disposed of together with waste food. The resulting compost can be used for fertilizer.

The German company is seeking industrial partners for commercial agreements with technical assistance. The partners should be interested in manufacturing products from bioplastics. The German company will take into consideration the application requirements of manufacturing companies as well as their production processes and offer the most suitable material. They will assist in the adaptation of the processes to the new material. The company's focus in material development has always been to reach a good processability without losing the bio-character of

the materials.

Advantages and Innovations

- Maximum amount of renewable resources used
- Outstanding mechanical properties (similar to LDPE, HDPE and PP depending on the grade) that are usually not reached in bioplastics
- Latest technology due to co-operation with research institute
- Product grades are offered that meet the requirements of European and American food contact regulations
- Customized solutions specifically tailored to the requirements of the manufacturing company are possible due to the wide range of biomaterials available
- Materials tested and certified by independent institutes
- Better processability compared to other bioplastics

Stage of Development

Already on the market

IPR Status

Secret Know-how

Keywords

Technology

02005001	Foil, fils
02005005	Plastic bags
02007014	Plastics, Polymers
06006002	Bioplastics
10002007	Environmental Engineering / Technology

Market

08001006	Processes for working with plastics
08001015	Other speciality materials
08001018	Polymer (plastics) materials

NACE

C.20.1.6	Manufacture of plastics in primary forms
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Partner Sought

Type and Role of Partner Sought

Partners sought:

Type: Industry with products from bioplastics or interested in changing to bio-based and biodegradable plastics

Area of activity of partner: Production of bags, waste bags, food packaging, deep freeze packaging, mulch films, transparent multilayer films, plastic bottles, straws, cutlery, housings

Tasks to be performed: Use the German company's materials in their processes. The German company will help to select the most suitable material for the product requirements and the existing production equipment. They will provide engineering support where necessary.

Type of Partnership Considered

Commercial agreement with technical assistance

Technology Offer

Small rescue vehicle to access difficult-to-reach locations

Summary

A German company is offering a newly designed mobile rescue vehicle, which makes it possible to reach difficulty locations without problems. The rescue vehicle guarantees a higher success rate as the rescue team will be enabled to reach locations that could not be reached by conventional rescue vehicles. The company is looking for commercial and/or manufacturing agreements. Also a technical co-operation agreement and/or joint venture could be imagined.

Creation Date 18 May 2015
Expiration Date 16 July 2016
Reference TODE20150428004

Details

Description

The inventor is a small and medium sized enterprise, located in the heart of the German region of Saxony, which is well known for machine tools since the beginning of the last century. After its business start-up in a technology centre, the company changed its location to an Industrial park. Since there is a constant growth of employees.

The rescue vehicle is one of a range of prototypes it developed in the last years.

The rescue vehicle is a very mobile, small and light vehicle for up to two passengers. The vehicle could be used in recovery, rescue, and fire fighting in locations that are inaccessible via conventional means.

Also locations that were only accessible on foot by a rescue team under physical strain and potentially posing risks to health and safety can now be reached.

The company is looking for commercial and/or manufacturing agreements. Also a technical co-operation and joint venture could be imagined.

Advantages and Innovations

Advantages and Innovations The rescue vehicle is a very mobile, small and light and a completely new development on the market. The vehicle could be used in recovery, rescue, and fire fighting in locations that are inaccessible via conventional means.

Main advantages are:

- Minimises exposure of the rescue team to pollution or extreme temperatures.
- The vehicle does not have a combustion engine, making it possible to operate

in locations with minimal air ventilation (e.g. in rooms or tunnels).

- Because of the compact construction, the small vehicle can pass through normal doors and also in passenger lifts and it is equipped to operate on escalators. It can also be used as complimentary equipment in conventional fire-fighting vehicles.
- It is common that there is no water connection at the location of a fire. The mobile rescue vehicle can be equipped with a water tank that then can aid fire extinction escalators. It can also be used as complimentary equipment in conventional fire-fighting vehicles.
- It is common that there is no water connection at the location of a fire. The mobile rescue vehicle can be equipped with a water tank that then can aid fire extinction.
- Modular system: the user can assemble the firefighting vehicle according to his/her specific needs.
- Rescue workers and fire fighters don't have to go on foot to the rescue site; hence they can concentrate their efforts on saving lives.

Other advantages are the wide range of usage options:

- Fire brigades.
- Rescue services.
- Cleaning services.
- Social aid organisations.

Stage of Development

Already on the market

IPR Status

Secret Know-how

Keywords

Technology

01004003	Applications for Transport and Logistics
02009002	Hybrid and Electric Vehicles
10001002	Assessment of Environmental Risk and Impact

Market

08003007	Other industrial equipment and machinery
09003007	Other services (not elsewhere classified)

NACE

C.28.9.9	Manufacture of other special-purpose machinery n.e.c.
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Partner Sought

Type and Role of Partner Sought

The company seeks for producer of parts from reinforced fibre glas plastic for manufacturing of car body parts and peripheral equipment and provider of rescue technique.
The company is able to perform field installation.

Type and Size of Partner Sought

SME 11-50, SME <10,>500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Manufacturing agreement
Commercial agreement with technical assistance
Technical cooperation agreement
Joint venture agreement

Technology Offer

Immobilisation of contaminants and sealing of rock by using time dependent crystallisation - Provoked mineral synthesis

Summary

A German SME offers (grouting) solutions for water inflow stops/ sealing of rock and decontamination in mining industry. Using super saturated solutions it is possible to precipitate natural occurring minerals which reduce permeability of rock. The decontaminating metals can be fixed as sulphides and will remain in-situ. The SME is looking for partners from industry and research for a license agreement, research cooperation, technical cooperation, and/or a services agreement.

Creation Date 18 May 2015
Expiration Date 16 July 2016
Reference TODE20150420002

Details

Description

A German SME's offers grouting solutions for water inflow stops/ sealing of rock and decontamination in mining industry. It operates laboratory rooms for chemistry and material science since 2003.

The offered "Provoked mineral synthesis" is a new technology which forms slightly soluble minerals from supersaturated solutions allowing the fixation of contaminants and the reduction of the permeability of soils or rock formations. Solutions containing high amounts of calcium sulfate, calcium carbonate or calcium hydroxide can be prepared by using special inhibitors, which prevent spontaneous crystallisation during the solution preparation. Inhibitors do not change the solubility, they stabilise temporarily concentrations high above the normal solubility of the minerals. Inhibitors enable, for example, the mixing of BaCl₂ and Na₂SO₄ solutions as well as lime Ca(OH)₂ slurries and diluted sulphuric acid without spontaneous BaSO₄ and gypsum formation, respectively. Clear solutions are obtained with time dependent stability. The rate of precipitation can be directed by the degree of supersaturating, pH, temperature and type and concentration of the inhibitor. When supersaturated solutions are used as grout, time dependent crystallisation occurs within the penetrated soil or rock structures. The flow paths are closed step by step starting from the inner part. Reduction of permeability starts and will finished with sealing of the pore space or the crack. Contaminants are incorporated into the growing layers of slightly soluble minerals. Such processes can be used for preparation of solutions from which directed gypsum, anhydrite, BaSO₄, CaCO₃ or Ca(OH)₂ formation takes place. All have in common that the setup of supersaturating, pH value and redox potential opens many possibilities to change contaminants into stable, non-dissolvable compounds. Organic degradation processes can be initiated simultaneously. One main fact is the formation of only naturally occurring minerals which do not harm the treated formations.

The company is looking for partners from research and industry for a license agreement, research cooperation, services agreement, and/or technical cooperation agreement.

Advantages and Innovations

Sustainable: natural existing minerals are formed, no artificial materials needed;
reduction of the permeability of soils or rock formations;
Fixation of contaminants ensured;
-Special inhibitors are used to prevent spontaneous crystallisation (temporarily stabilised concentrations high above the normal solubility);
In-situ treatment method; lab scale tested and field scale application has been successfully used several times, e.g. in Germany and Canada.

Stage of Development

Already on the market

IPR Status

Secret Know-how

Keywords

Technology

03008	Mining Technologies
05001003	Inorganic Chemistry
09001002	Analyses / Test Facilities and Methods
10002007	Environmental Engineering / Technology
10002011	Soil and Groundwater Pollution

Market

08001002	Homogeneous injections/extrusions
09006	Mining (non-energy related)

NACE

B.07.2.1	Mining of uranium and thorium ores
E.39.0.0	Remediation activities and other waste management services

Partner Sought

Type and Role of Partner Sought

The company is looking for partners from industry and research. For reason of the very wide application fields, there is no restriction.

Highly welcome are industry partners in the fields of chemistry, mining, remediation, material science.

Tasks to be performed by the potential partners:

- Joint further development
- Technical cooperation for adaption the technology to the specific conditions

Type and Size of Partner Sought

SME 11-50, University, R&D Institution, SME <10,>500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Services agreement

License agreement

Technical cooperation agreement

Research cooperation agreement

Technology Request

Urgent - Sustainable packaging for food delivery

Summary

A Brussels-based (Belgian) start-up operating in the catering services looks for a sustainable packaging solution which takes into account the environmental impact throughout its whole lifecycle. The start-up is open to different technical solutions developed with plant-based materials, paper, paperboard, etc. Aluminum and PVC are not accepted. The company looks for technical cooperation or commercial agreement with technical assistance with producers or suppliers of food sustainable packaging

Creation Date 23 June 2015
Expiration Date 18 October 2015
Reference TRBE20150225001

Details

Description

Two young entrepreneurs are about to launch in Brussels, Belgium (planned March 2015) a new concept of sustainable catering (restaurant service).

This is intended to be a take-away counter / shop of daily specials made of qualitative products compliant with the slow food concept and the short food supply chain, then in line with bio, local, ethics, greedy approaches to food. Special attention will be paid to product's origin, the production condition and processing method.

The objective of this Brussels-based start-up is to provide their clients with a qualitative, varied, tasteful, fast, easy and affordable meal for dinner made of good and fair food. A way to fight against the homogenisation of taste in food industry and its distribution chains, against meals made of ingredients with pesticides, chemical fertilisers and genetically modified organism (GMO).

The whole customer experience has to be aligned with this philosophy and its overall concept behind the sustainable project, including the food packaging chosen for food sales. This latter must be environmental-friendly throughout its entire life cycle.

The company is looking for a packaging solution which must be fully aligned with the philosophy of the start-up.

Technical Specification or Expertise Sought

The start-up is looking then for a sales packaging designed and manufactured in a sustainable way, whose impact on the environment has to be close to zero even at the end of its life since the packaging should be biodegradable.

The start-up has no specific preference as for the technical solution, meaning that potential chosen packaging material can come from different sources, provided that the environmental criteria are applied to it. The start-up is then open to technical solutions made of plant-based materials, paper or paperboard, starch. Aluminum and PVC are totally excluded.

Simple and natural materials or recycled materials will be preferred. The packaging materials must be at least recyclable, offer safe and stable packaging that guarantees safety and food quality along the entire product self-life and compliant with the following technical requirements:

- Suitable to food contact
- Compliant with oven use (at least for 15 minutes at 180° (Celsius degrees))
- Compliant with microwave use
- Size : 18 cm x 12 cm x 5 cm
- Affordable Price : max € 0.5 / piece
- Capacity : 1L
- Transparent closure to let the clients see the content (meal)

In a full life cycle approach, transport distance between the potential supplier and the Brussels-based company will also play an important role in the selection criteria and this includes as well the material on which the solution is based (eg sugar cane is recyclable but the countries of origin are far from Belgium).

Stage of Development

Already on the market

Keywords

Technology

08001003	Food Packaging / Handling
10002013	Clean Production / Green Technologies
10002015	Life Cycle Assessment
10003001	Biotreatment / Compost / Bioconversion
10003004	Recycling, Recovery

Market

07005001	Fast food restaurants
07005002	Other restaurants
09004006	Packing products and systems

NACE

I.56.1.0	Restaurants and mobile food service activities
I.56.2.1	Event catering activities

Partner Sought

Type and Role of Partner Sought

Type of partner sought: Industry (small or large industry)

Specific area of activity of the partner: producers or suppliers of food sustainable packaging

Task to be performed by the partner sought: provide the Belgian start-up with a turn-key sustainable packaging solution

Type and Size of Partner Sought

SME 11-50, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Commercial agreement with technical assistance

Technical cooperation agreement

Technology Request

Ecological lead, tin, and zinc separation from e-waste containing noble metals

Summary

Lithuanian SME specialized in recycling technologies is looking for solutions that could help to separate and recover lead, tin, and others accompanying metals in environmentally friendly way from the electronic scrap that contains noble metals in downstream processes: electrodeposition or deposition using reducing agents. The level of development should be >75%. SME is looking for partners for technical cooperation or joint venture.

Creation Date 29 July 2015
Expiration Date 05 August 2016
Reference TRLT20150729001

Details

Description

The main activity of Lithuanian company is related to electronic waste treatment. Company is planning to enhance technology development activities that are related to metal recovery from electronic waste containing low amounts of noble-metals. In order to recover noble metals in ecologically friendly way there is a need to separate lead, tin, and other metals from fraction of noble metals at the low concentrations levels. The requested technology/solution shall enable separation of non-targeted metals in ecologically friendly way from the fraction containing noble metals.

The requested technology shall allow the treatment (separation):

- capacity no less 1 tone per operation;
- separated non-targeting metals have to be in liquid phase;
- separation from the fraction containing noble metals by means of filtration;
- technology shouldn't involve processes where hydrochloric, sulfuric, phosphoric and nitric acids are used;
- the stage of development should be >75%

Technical Specification or Expertise Sought

Expertise requested must be familiar with ecological lead, tin, and zinc separation from e-waste containing noble metals on an industrial scale.

Stage of Development

Available for demonstration

Keywords

Technology

02002012	Mixing (powder, etc.), separation (sorting, filtering)
05004001	Filtration and Membrane Processes
05004002	Extraction
10002007	Environmental Engineering / Technology
10003004	Recycling, Recovery

Market

08004002	Chemical and solid material recycling
09003001	Engineering services
09007004	Engineering and consulting services related to construction

NACE

E.38.2.1	Treatment and disposal of non-hazardous waste
E.38.2.2	Treatment and disposal of hazardous waste

Partner Sought

Type and Role of Partner Sought

- Type of partner sought: academia or industry.
- Specific area of activity of the partner: electronic waste treatment and metal recovery.
- Task to be performed: To propose a solution/technology for the separation procedure of lead, tin, zinc from the electronic waste containing low amounts of noble metals.

Type and Size of Partner Sought

SME 11-50, University, Inventor, R&D Institution, SME <10,>500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Commercial agreement with technical assistance
 Technical cooperation agreement
 Joint venture agreement



***Medio Ambiente:
Agua y Residuos***

Technology Offer

Anti-aging charging technology (renew cell battery regeneration system)

Summary

A Korean SME has developed an anti-aging charging (ACC) technology which can restore any kind of lead-acid, NiCd and NiMH batteries. The regeneration system, designed for industrial batteries, is remarkable for its compactness and innovativeness. The system based on ACC is portable, so that it can be used on site, and it is modular, allowing it to be adapted to specific requirements. The firm wants a commercial agreement with technical assistance.

Creation Date 27 May 2015
Expiration Date 27 July 2016
Reference TOKR20140521002

Details

Description

As critical components in the daily operations of many businesses, industrial batteries have to fulfill tremendous performance requirements while being subjected to numerous strains and environmental influences. Over time, their efficiency is gradually reduced due to impurities such as sulfation at lead acid battery. The anti-aging charging technology (AAC, battery regeneration systems) is adapted to various fields of application. AAC optimizes the effective performance and lifetime of industrial batteries; they are also energy-efficient, and so yield sustainable resource and cost savings. By slowing down the recycling cycle and reducing total CO² emissions, it also helps preserve environment.

The system provides a regeneration process. The first step is de-sulfating batteries using an effective and gentle high frequency process with intelligent logic: inactive areas of the cell are reactivated by charging and discharging them with small current pulses. By doing this cell defects such as micro-short circuits arising from corrosion, dirt and dendrite build-up, or restore open status (EC-D mode); can be resolved. Also, the process is adapted and terminated fully automatically. It works in 3 steps, each of which is easily programmable. The whole process for regenerating batteries requires just six to twelve hours (depending on the battery's capacity and status, the duration for the regeneration might shrink to an hour).

The company is looking for a partner who can learn its basic technology to assemble in their own regions and can provide after sale service to their domestic customers. By doing this, the company would like to broaden their business to European countries and in the end achieve a commercial agreement.

Advantages and Innovations

- Equalize and balance each cell from mono block battery to battery bank
- Restore 0 volt, short, open, or surface charging status by EC-D mode

- Charge and optimize battery faster than others
- Able to acknowledge the energy status of battery at real time
- Show error status promptly
- Able to save electric power cost for charging and regenerating
- Faster charging by linking additional unit
- Can restore 1 to 8 cells depending on the cell status

Stage of Development

Already on the market

IPR Status

Secret Know-how, Exclusive Rights, Other

Keywords

Market

01006005	Other communications (not elsewhere classified)
03002	Batteries
08003004	Industrial trucks and tractors
09001003	Leasing of railcars, buses, cars, etc.

NACE

C.27.2.0	Manufacture of batteries and accumulators
C.29.3.2	Manufacture of other parts and accessories for motor vehicles
C.33.1.5	Repair and maintenance of ships and boats
C.33.1.7	Repair and maintenance of other transport equipment
G.46.5.2	Wholesale of electronic and telecommunications equipment and parts

Partner Sought

Type and Role of Partner Sought

- Type of partner sought : Companies
- Specific area of activity of the partner: Battery, rental, forklift companies, Solar, hybrid or electric vehicle field
- Task to be performed : Commercial agreement with technical assistance such as assembly or engineering

Type of Partnership Considered

Commercial agreement with technical assistance

Technology Offer

Respirometry instrument for measuring waste biodegradability and monitoring food fermentation

Summary

A Slovenian SME has developed a solid and/or liquid state respirometry instrument for measuring biodegradability of different types of waste and monitoring of food fermentation. Main instrument advantages are: high temperature biodegradability and mass flow controllers for high precision measurements. The SME is looking for partners that would use and co-develop the respirometry instrument through commercial agreement with technical assistance, research cooperation or joint venture agreement.

Creation Date 10 June 2015
Expiration Date 18 August 2016
Reference TOSI20150610001

Details

Description

A Slovenian SME developed a solid and/or liquid state respirometry instrument used for measuring biodegradability of different types of waste (plastics, organic waste, soil, compost) and monitoring of food fermentation. The respirometry instrument can be used for aerobic and anaerobic research purposes of small and medium scale. Main advantage of the presented instrument in compared to other available on the market are: high temperature biodegradability (0 - 60°C), 12 or more measuring channels, mass flow controllers for precise setting and measurement of gas flow in each reactor.

The developed respirometry instrument system is used for conducting diagnostic tests, measuring and monitoring the following:

- Bio-reactions in aerobic and anaerobic processes
- Plastic degradation at high temperature
- Monitors the activity in biological wastewater treatment plants
- Analyses decomposition efficiency of different types of material in a wastewater treatment plant
- Decomposition of waste, biodegradation
- Microorganism activity (pharmacy, production of medicines)
- Biochemical oxygen demand (BOD) and toxicity
- Respirometry (activity) of small animals
- Biological activity of organisms (concentration of carbon dioxide in the expired air)
- Compost maturity
- For use in food production (fermentation activity in wine production and milk industry)

Technical features of the respirometry instrument:

- 6, 12 or 24 measuring reactor channels,
- temperature from 5 to 70°C \pm 0,5°C,
- infrared (IR) CO₂ sensor,
- electrochemical or paramagnetic O₂ sensor,
- automatic humidification,
- aerobic or anaerobic bio-process measurement,
- automatic leak detection.

The Slovenian SME is looking for partners that would use the respirometry instrument and use the Slovenian SMEs help in adapting the instrument to specific field needs through commercial agreement with technical assistance. The SME is also looking for partners that would cooperate at broadening the applicability of the respirometer instrument in the field of polymer biodegradability, bioplastic, waste waters, ecology, and other solid & liquid materials through research cooperation agreement and joint venture agreement.

Advantages and Innovations

Advantages:

- High temperature (0 - 60°C) biodegradability measurement
- Optical or paramagnetic oxygen sensors
- Micro mass flow controllers in all chambers for high precision measurements
- Biodegradability measurement of plastic materials
- Zero drift with an automatic calibration
- Automatic sample humidifying system with humidity control
- 6, 12 or more measuring channels
- Automatic leak detection

Stage of Development

Already on the market

IPR Status

Patents granted

Keywords

Market

03007001	Chromatographs and related laboratory equipment
03007002	Other measuring devices
08002002	Industrial measurement and sensing equipment
08002003	Process control equipment and systems
08004002	Chemical and solid material recycling

NACE

M.72.1.9	Other research and experimental development on natural sciences and engineering
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Partner Sought

Type and Role of Partner Sought

- Type of partner sought: Industry and research partners in the field of biotechnology, biology, medicine, industry and environmental research.
- Specific area of activity of the partner: partners with a biotechnological laboratory and excellent bioprocess engineering leadership or accredited laboratory.
- Type of Partnership Considered: The Slovenian SME is looking for partners that would use the respirometry instrument and use the Slovenian SMEs help in adapting the instrument to specific field needs through commercial agreement with technical assistance. The SME is also looking for partners that would cooperate at broadening the applicability of the respirometer instrument in the field of polymer biodegradability, bioplastic, waste waters, ecology, and other solid & liquid materials through research cooperation agreement and joint venture agreement.

Type of Partnership Considered

- Commercial agreement with technical assistance
- Joint venture agreement
- Research cooperation agreement

Technology Offer

A technology for processing straw into cellulose fibrous semi-product

Summary

A Ukrainian private company with its own experimental facilities developed, uses, and offers technology and a boiling apparatus for continuous processing of the straw into a semi-finished product for paper manufacturing: CTMP (chemi-thermomechanical pulp). An operational plant exists. The authors are looking for partners for implementation of the technology. Possible engineering, license selling.

Creation Date	29 May 2015
Expiration Date	29 July 2016
Reference	TOUA20150529001

Details

Description

At present straw is not used as a raw material for processing into cellulose products in production quantities. It is related first of all with small relative density of straw and logistical issues during delivery. In a second place, it is related with large cost of the standard equipment which can be applied for the purpose.

The proposed technology and equipment permit to create profit-making low-power enterprises for processing annual grass straw into CTMP. Such enterprises can be located in rural areas. This allows to create new jobs, which is particularly important in wintertime.

The process of delignification of straw is conducted in non-organic media. Process parameters are corrected depending on the raw materials used, which allows to obtain the product of guaranteed quality. The process is easily automated and secures large output of the final product. The wastes are non-toxic and contaminate the environment minimally. The wastes can be processed into pellets and used as fuel both at the plant itself and for sale.

Current and Potential Domain of Application: Manufacturing, Packing products and systems, Printing and binding

Advantages and Innovations

1. The technology is aimed at creation of sought-after high-quality product from fast-renewable raw materials.
2. The placement of the enterprise in a rural area can raise profitability of the agricultural sector by up to 20% and solve social problems.
3. The equipment for processing straw into CTMP is developed to the level of industrial model.
4. The technology is protected by patents of Ukraine and international patents.
5. The coat price of the products is 2-3 times lower than that of the products obtained from waste paper.

6. Subsequent processing of the CTMP allows to obtain cellulose.
7. Pay-back period of the enterprise is up to 2.5 years.
8. The line for straw processing is easily built into technological chain of the existing paper cardboard factories (in this case, amount of equipment and, accordingly, total cost of the line is reduced).
9. The boiling apparatus and the feed end of the line are realized as a module, so it is possible to increase volumes of processed straw at the particular enterprise modularly.

Stage of Development

Available for demonstration

IPR Status

Patents granted

Keywords

Market

07006	Other Consumer Related (not elsewhere classified)
09004006	Packing products and systems
09007002	Manufacture of construction materials, components and systems

NACE

C.17.1.1	Manufacture of pulp
C.17.1.2	Manufacture of paper and paperboard

Partner Sought

Type and Role of Partner Sought

- Type of partner sought: Production. Companies producing and developing equipment for paper industry.
- Specific area of activity of the partner: Development and production of equipment for paper industry.
- Task to be performed by the partner sought: Organization of joint enterprise for production, testing and launching into the market new equipment and technology.

Type of Partnership Considered

Financial agreement
Manufacturing agreement
Commercial agreement with technical assistance
Joint venture agreement

Technology Offer

Collaborations sought for development of Polymer reactor

Summary

A Welsh (UK) company is pulling together significant collaborative development on polymer refining where enzymatic reactions cause the polymer breakdown at low temperatures (anaerobically) that recover methane and ethanol for re-use. Collaborations are sought for the following: 1.Polymer manufacturers wanting to utilise enzymes. 2.Waste collection companies 3.Landfill organisations in USA, Germany, France, Russia and China

Creation Date 09 April 2015
Expiration Date 09 July 2016
Reference TOUK20150409001

Details

Description

Over 250m tonnes of polymers are manufactured globally, which represents less than 3% of global petroleum use. Over 40% of post consumer waste plastic ends in landfill in Europe p.a. If plastic to landfill is eliminated altogether by 2020 this is estimated that 80m tonnes p.a. would be re-diverted for alternative use. This represents around 1bn barrels of oil or €70bn (at \$100/barrel) or enough oil to support Europe for 70 days.

While seven EU Member States plus Norway and Switzerland, for example, already landfill less than 10% of plastic waste, eleven EU Member States still landfill more than 60%. Where zero landfill policies exist, the majority of plastic waste is converted into energy from waste (EfW). This is lower down the waste hierarchy than refining.

The company is pulling together significant collaborative development on polymer refining where enzymatic reactions cause the polymer breakdown at low temperatures (anaerobically) that recover methane and ethanol for re-use. Collaborations are sought for the following:
1.Polymer manufacturers wanting to utilise enzymes. 2.Waste collection companies 3.Landfill organisations in USA, Germany, France, Russia and China

Advantages and Innovations

Significant use of polymers that principally end up either in landfill or being burnt for energy use. The enzyme does not affect material properties, re-use or recycling and introduces a bio-reaction that is higher in the waste hierarchy than burning and land filling.

Stage of Development

Under development/lab tested

IPR Status

Secret Know-how, Patent(s) applied for but not yet granted, Trade Marks, Copyright

Keywords

Market

06003008 Other alternative energy
06004002 Heavy oil / shales

NACE

C.22.2.9 Manufacture of other plastic products
D.35.2.1 Manufacture of gas

Partner Sought

Type and Role of Partner Sought

Polymer manufacturers wanting to utilise enzymes.
Waste collection companies, specifically polymer.
Landfill organizations.

Type and Size of Partner Sought

SME 11-50, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

License agreement
Technical cooperation agreement
Joint venture agreement

Technology Offer

Innovative garbage truck for burning rubbish

Summary

A Polish inventor has developed an innovative vehicle for burning rubbish on its way to a waste dump. The main advantage is that the solution will reduce the volume of waste collected on waste dumps. The inventor is looking for companies and researchers working in waste management for manufacturing, license, or technical cooperation agreements for further development and to bring the innovation to market.

Creation Date 10 June 2015
Expiration Date 13 August 2016
Reference TOPL20150609001

Details

Description

Characteristic for this new dustcart is that loaded waste is a subject to a pyrolytic gasification process. Garbage truck can be loaded from both sides (left & right). Containers are lifted by the hoists. After opening the main hatch, wastes are loaded to the main reservoir, after closing the main hatch, the inner hatch opens which allows to transport wastes to the gasifier. The walls of the gasifier are made of materials resistant to high temperatures.

Thereafter, the inner lid is also shutting down. Double flap system provides a control of the amount of "false" air getting inside and provides the gas from getting outside of the gasifier. Biomass gasification process is divided into several stages - drying, pyrolysis, combustion and reduction. Each of them takes place in a different zone of the gasifier. Drying zone is at the top. At this stage of gasification, under the temperature of 100-300°C, evaporation of waste containing up to 50% humidity begins. Under the drying zone is a pyrolysis zone. Chemical processes take place here at 300-750°C with no or small presence of the air. Pyrolysis products are: solid fractions (including coke and semi-coke), liquid products as tars and oils (which in a later process, due to high temperature, are transformed mostly into the gaseous state), and combustible gas. Incineration of waste takes place in a combustion zone, at a temperature above 750 ° C. The process is initiated by flame from a nozzle powered by a producer gas from a tank located under the chassis. The tank filled with pyrolysis gas. At the upper part of the combustion zone are orifices, through which specific amount of the air is provided to the above-mentioned zone. This is done by air installation. Unburned because of insufficient amount of air wastes are lowered fill the reduction zone (the space between the combustion zone and a grate). When process is finished, pyrolytic coke and other unburned substances can be found on the grid. As a result of the above-described process, volume of loaded into the gasifier municipal waste decreases from 65 to 75%.

The Dustcart has a rotary grate what allows pyrolytic coke and other residues to be discharged to the ash, after what they are being automatically removed by fire-retardant conveyor belt. After pyrolytic gaseous products passes the combustion and the reduction zones (as a result of chemical processes taking place in those zones) a producer gas is being derived. From the

reduction zone gas passes through the space between the body and the reservoir to the gasifier. It gives away its heat to the walls of the tank and the body. Thereafter it is cooled down to a temperature of 300-400 ° C. The gas leaving from the generator is heavily contaminated with large amounts of various mechanical admixtures, therefore a gas conduit is supplied to the assembly of two cyclones , which are arranged sequentially one after the other.

On the gas line, before the entrance to the cyclone is a compensator, which due to the possibility of elastic deformation, provides necessary tightness of the gasifier purifier (cyclone). After gas enters the cyclone, it is being swirled, and by its movement direction is rapidly changed, whereby the heaviest dirt particles are being rejected by centrifugal force to the wall of cyclone and they fall to the dust container from where they should be removed periodically. This can be done through a door located on the side walls of the garbage truck. In cyclones the gas gets rid of 50 % of dopants, and the motor gets cooled down to a temperature of 280-300 ° C.

There is a hatch in the rear wall of the gasifier that allows entering inside to carry out periodic inspection of the unit or to clean it. An extension ladder in the back of the truck provides an easy access to this hatch. The available data indicates that from kilogram of municipal waste it is possible to receive up to 0.6 kg of pyrolytic gas and 0.4 kg of pyrolytic coke.

Advantages and Innovations

The main feature of this new concept of a pyrolytic dustcart, assumes processing garbage using pyrolytic gasification process on their way to the landfill, to obtain a producer gas (which can be used as a fuel for the vehicle) and a pyrolytic coke as a by-product. Selling coke could be an additional source of income for municipal enterprise . Moreover, gasification of wastes reduces their mass and volume.

Currently, garbage trucks collect waste which are being delivered to landfills in the same form as they were loaded into garbage. Each year the amount of waste generated by urban residents increases, as same as the cost of storage and disposal. More and more of a problem is also finding space for new landfill sites.

Stage of Development

Under development/lab tested

IPR Status

Patent(s) applied for but not yet granted

Keywords

Market

08004002	Chemical and solid material recycling
08004004	Other pollution and recycling related

NACE

N.81.2.9	Other cleaning activities
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Partner Sought

Type and Role of Partner Sought

- Type of partner sought: Industry

- Specific area of activity of the partner:

Partner with good market accessibility in the waste (rubbish) field, as well as the financial means to support the project.

- Task to be performed by the partner: Work together to bring the product to market and to test new applications during technical cooperation, available license and/or manufacturing agreement after development phase

Type and Size of Partner Sought

SME 11-50, University, Inventor, R&D Institution, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

License agreement

Manufacturing agreement

Technical cooperation agreement

Technology Offer

Intelligent Unraveling Technology for Flat-Knitted Fabrics

Summary

A Turkish company experienced in tailor-made textile machineries developed a system that is unraveling various kinds of flat knitted fabrics. The system is easy to use and intelligent to understand the type of unraveling to be applied automatically. The machine handles weak, delicate and expensive yarns as well as bulky yarns. The company offers tailor made machinery development, establishment, after services and is looking for commercial agreements with technical assistance.

Creation Date	03 June 2015
Expiration Date	11 August 2016
Reference	TOTR20150603001

Details

Description

Being in the knitwear garment industry for many years had long been a nightmare to overcome the problem of recovering wasted yarns to fit industry's needs.

Most of the time it may be very difficult to avoid the spoilt production due to many reasons, such as kind of yarn, kind of pattern, kind of machine used and most importantly skill of the knitting machine operator. Over the previous years many mechanisms had been tried and have still been rarely satisfactory to recover, but only small percentage of the fabric types. Seeing the piles of faulty knitted, wasted, spoilt, rejected fabrics during the production a Turkish company developed an unraveling machine which would serve its purpose for the knitting industry on a full range of yarns used.

The machine has become more critical as higher quality, finer and more expensive yarns have been employed, particularly with the current trend to finer gauges and often finer count and more delicate yarns.

The machine handles bulky yarns on the one hand while being directly applicable to weak delicate and expensive yarns such as Cashmere, as well as Lambswool, Shetland, Angora, Merino, Acrylic, Cotton Alpaca, Chenille, Boucle, Modal, Polyamide and Polyester.

Fabric types unraveled by the system include single and double jersey, Milan Rib, cable, lace, intarsia, shaped and internal garments, jacquard, rib, links, tuck and plated patterns etc.

Multi-count yarn can also be unraveled by separating the plies as well as should be possible to unravel them together, even if there are some tension or length differences among the plies.

The system can be used by any operator, easy to use, intelligent to understand the type of unraveling to be applied automatically, and does not evade any yarn dust in the manufacturing area.

The company is interested in cooperation with companies active in knitted textiles sector, especially the companies working with valuable fibers and offers system development according to the needs of the companies, establishment of the system and giving after services. The

Turkish company would like to sign commercial agreements with technical assistance. Information about the special needs should be supplied to the Turkish company for an effective system development by the partner.

Advantages and Innovations

Advantages and innovations are as following:

Genuine devices & technique

Latest technology microprocessor control

Intelligent control software paving the way to eligible solutions

Extremely easy & quick threading

Robust construction

Ergonomic & aesthetic body concept

Very silent operation

Button touch operation

Utmost versatility, adjustable to differing kinds of yarn and fabric

Ergonomic displays & indicators

Adjustable to varying parameters by user friendly touch-screen operation terminal

Possible to recover any kind and any count of yarn such as Cashmere, Lambswool, Shetland, Angora, Merino, Acrylic, Cotton, Linen, Alpaca, Chenille, Boucle, Modal, Polyamide, Polyester etc.

Unraveling of varying kinds of flat knitted fabric is applicable such as; Single jersey, Double jersey, Milan rib, Cable, Structure, Lace, Intersia, Shaping, Integral, Jacquard, Rib, Links, Tuck, Plating etc. Patterns from 3 to 14 gauge flat knitting machines.

By addition of optional multi-count yarn tension compensation device, multi-counts may be unraveled together.

By help of digital inverter, each winding units steepless speed is controlled distinctly

Prompt, silent electronic brake of winding units

Improved safety measures, human friendly

Environment friendly

Stage of Development

Already on the market

IPR Status

Patent(s) applied for but not yet granted

Keywords

Market

08003005 Other industrial machinery for textile, paper & other industries

08003007 Other industrial equipment and machinery

NACE

C.13.1.0 Preparation and spinning of textile fibres

E.38.3.2 Recovery of sorted materials

Partner Sought

Type and Role of Partner Sought

- Type of partner sought:

Partner sought should be manufacturing knitted textiles

- Specific area of activity of the partner:

Knitted textiles production using valuable fibers.

- Task to be performed by the partner sought:

To be in need of recycling the fibers knitted before by unraveling systems. Information about the special needs arising from the fibers and manufacturing plant used in knitting should be supplied to Turkish company for an effective system development by the partner.

Type of Partnership Considered

Commercial agreement with technical assistance

Technology Offer

Durable porous surfaces for driveways and paths from recycled tyres

Summary

A UK based SME has developed a new process to enable the use of rubber crumb from recycled tyres in a durable, load bearing, porous material suitable for driveways and paths. The system uses no solvents and is highly competitive in price when compared to alternative porous surface materials. The company is open to technical cooperation agreements, joint venture agreements and license agreements.

Creation Date 14 July 2015
Expiration Date 27 July 2016
Reference TOUK20150714001

Details

Description

Millions of used tyres from vehicles represent a massive global waste problem. Aside from burning these for energy, there are very few ways to recycle and reuse these materials. One method is the use of rubber crumb as a ground surfacing material. The traditional application is for children's adventure playgrounds but the market for this is very small. This material is also unsuitable for any load bearing applications and is prone to breaking up. An SME with expertise in tyre shredding has developed a new binder for rubber crumb that significantly hardens the rubber into an extremely durable material suitable for large areas such as driveways, paths and industrial areas whilst remaining porous.

The company is now seeking to introduce their system into the market and is looking for new partners who have an interest in recycling tyres and developing products from the materials. They are therefore interested in technical cooperation agreements for developing new applications, possible joint venture agreements and also licensing the use of the technology for specific applications in new markets.

Advantages and Innovations

- Cold process that uses no solvents
- extremely durable surfacing material
- uses a readily available, cheap material
- porous (meets Sustainable Drainage System (SUDS) requirements)
- suitable for driveways, paths, shed foundations, caravan sites, cycle paths and industrial surface uses
- no weeds/puddles
- reduces frost formation
- can be made non-porous for other applications

Stage of Development

Available for demonstration

IPR Status

Secret Know-how

Keywords

Market

07006	Other Consumer Related (not elsewhere classified)
08001009	Speciality/performance materials: producers and fabricators
08004002	Chemical and solid material recycling
08004004	Other pollution and recycling related

NACE

E.38.3.2	Recovery of sorted materials
E.39.0.0	Remediation activities and other waste management services
F.42.1.1	Construction of roads and motorways
F.42.9.9	Construction of other civil engineering projects n.e.c.
F.43.9.9	Other specialised construction activities n.e.c.

Partner Sought

Type and Role of Partner Sought

Type of partner sought - SME or larger company

Specific area of activity of the partner - recycling tyres, construction, re-surfacing

Task to be performed by the partner sought - develop new products, licence the technology for specific use, explore possible joint venture activity

Type and Size of Partner Sought

SME 11-50, SME <10,>500 MNE,251-500,SME 51-250,>500

Type of Partnership Considered

License agreement
Technical cooperation agreement
Joint venture agreement

Technology Offer

Optimizing the logistic of waste collection by applying a transceiver system indicating the fullness level

Summary

A Hungarian university developed a system which supports the optimization of waste material logistic with measuring the fullness of the waste containers. The university offers the whole system to mainly municipal waste collection companies. Primarily they are looking for partners that are interested in testing the technology and introducing it into new markets in the frame of technical cooperation agreement, license agreement or commercial agency agreement with technical assistance.

Creation Date	09 June 2015
Expiration Date	28 July 2016
Reference	TOHU20150609001

Details

Description

A new system in waste collection has been developed by a Hungarian university for municipal service provider companies, which significantly optimizes the actual waste collection process from both economic and environmental aspects. The system detects the containers to be unloaded, and prevents the causeless draining, thereby the service providers' work becomes much more efficient. Detecting the containers is in real-time mode, therefore those containers can also be in the system as a container to be unloaded which become full just then. Besides detecting, route optimizing is continuous, so planning the route to those containers is more efficient. The energy for the communication between the centre and the containers is provided by renewable energy sources.

With the help of a system control software the gathering route, that is to say the number of the containers to be collected, can be adapted to the capacity of the waste collecting and transporting vehicle. It is made by statistical analyses. The software enables the user to prepare statistics and statements, so the consumers' habits can be followed, therefore the service providers can comply with the customers' demand more efficiently. The software provides information, which help to develop the system, for instance, to set new containers or new waste collecting places or to abolish them.

With this system besides the environmental and economic aspects, the service standard can highly improve, so it can help to develop a cleaner and more liveable townscape.

Current and Potential Domain of Application: This technology could be useful for all the companies which would like to follow up their devices (e.g. newspaper machine, post, ATM, beverage and sweets machines, municipal service providers) located on different sites.

The university combines faculties from mechanical engineering, civil engineering, social

sciences, architecture, economics and music.

The university is looking for partners in the frame of commercial agency agreement with technical assistance, license agreement or technical cooperation agreement.

Advantages and Innovations

Nowadays only one Hungarian registered sample can be contacted with this technology, however, it refers only to measuring the weight of the waste, furthermore, it can be done only with the help of the device placed on the transporting vehicle. This innovative technology is able to transmit the fullness state of the container with the help of the built-in transceivers. While a technology registered patent in the USA warns the driver of the waste collecting vehicle only in case of total fullness, this actual invention enables the real-time follow of the containers, and enables to optimize the collecting route.

- The technology can be integrated into an existing system, providing a more efficient operation.
- It is able to provide real-time data, which results in a more efficient process from both economic and environmental aspects.
- It enables to measure the weight of waste material in the container.
- It enables to count the number of the waste material (e.g. plastic bottles) in the container.
- It enables the users to warn the service provider manually in case of the fullness of the container.

Main advantages of the developed technology

- On an arbitrary and/or on a previously defined date the level of the waste material can be inquired.
- Besides the level of the waste material the system measures its weight and number.
- According to the signal of the measuring sensors the route of the transporting vehicles can be optimize.
- The system provides more efficient waste collection both economically and environmentally.

Stage of Development

Under development/lab tested

IPR Status

Patent(s) applied for but not yet granted

Keywords

Market

08004004 Other pollution and recycling related

NACE

E.38.1.1 Collection of non-hazardous waste

Partner Sought

Type and Role of Partner Sought

- Type of partner sought:
 - Waste transporting companies
 - Municipal service providers
 - Companies producing and/or utilizing IT devices (e.g. producing transceivers)
 - Software development businesses
- Specific area of activity of the partner: The university is looking for mainly municipal waste collecting companies/organisations, and businesses which want continuous information about the state of the devices let/placed by them.
- Task to be performed:
The university is looking for mainly such partners who adapt this intellectual invention to become a competitive product, and who can promote the enlargement of its applications, and who might be willing to develop it together.

Type and Size of Partner Sought

SME 11-50, University, R&D Institution, SME <10, 251-500, SME 51-250

Type of Partnership Considered

License agreement
Commercial agreement with technical assistance
Technical cooperation agreement

Technology Offer

Novel technology for noble metals concentration from raw waste

Summary

Lithuanian SME specialized in electronic waste recycling developed a new technology for concentration of noble metals in the e-waste in the economic and ecological way. By applying ecologically safe chemicals and electro-deposition offered technology enables to reach 2-10% concentrate of Au, Ag, Pd. The company is offering a technical collaboration, licensing and commercial agreement with technical assistance.

Creation Date	27 August 2015
Expiration Date	26 August 2016
Reference	TOLT20150827001

Details

Description

Electronic waste (printing circuit boards (PCBs), catalyzers used in automotive and chemical industry) is characterized by significant heterogeneity and relatively high complexity. The composition of such waste is very diverse with relatively low levels of precious metals being present as deposited coatings of various thicknesses in conjunction with copper, solders, various alloy composition, non-ferrous and ferrous metals.

Today, large scale companies use “acidic” method for separation non-targeting metals (Pb, Sn, Cu and etc.) and for recovery of noble metals. These technologies are expensive and requires additional equipment for utilization of toxic compounds. By using conventional technologies environmental damages are caused, during the recycling processes:

- Cyanide leaching has been in use since several decades for economic gold extraction although it is environmentally unfriendly.
 - For recovery of platinum or palladium all the e-waste is treated by a mixture of hydrochloric and nitric acids that results in big amount of poisonous NO₂ gas emissions.
- Lithuanian SME in cooperation with university developed new technology that is based on highly promising and innovative research and that has following new properties:
- Noble and accompanying metals are leached in controlled corrosion route into relatively small volume of solution using environmentally friendly compositions of oxidants and ligands (dissolved oxygen, compounds of Fe⁺³).
 - Lead, tin and other accompanying metals are easily separated.
 - Mixture of metals is concentrated by electrodeposit (instead of “wet chemical path”) using electrochemical methods
 - The concentrate produced by the offered technology might be treated in the convenient way in order to separate individual noble metals having purity ~99 %.

Advantages and Innovations

- High selectivity and ease of control is offered by applying electrodeposit (instead of “wet chemical path”).
- High efficiency of noble metals concentration. The results are highly encouraging because the concentration of noble metals are more than hundred times higher than in the raw e-waste (concentration of Pt, Pd, Ag, and Au is ~ 0,01%), i.e. from 1000 kg of waste is possible to accumulate 14 kg of concentrate using offered technology.
- Ecological – no cyanide or hydrochloric and nitric acids are needed for the process.

Stage of Development

Available for demonstration

IPR Status

Secret Know-how

Keywords

Market

03	OTHER ELECTRONICS RELATED
08004	Pollution and Recycling Related
08004002	Chemical and solid material recycling
09003001	Engineering services
09007004	Engineering and consulting services related to construction

NACE

E.38	Waste collection, treatment and disposal activities; materials recovery
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Partner Sought

Type and Role of Partner Sought

- Type of partner sought:
Academia or industry
- Specific area of activity of the partner:
Electronic waste treatment and metal recovery.
- Task to be performed:
Further joint development and commercialization of the technology

Type and Size of Partner Sought

SME 11-50, University, Inventor, R&D Institution, SME <10,>500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

- License agreement
- Commercial agreement with technical assistance
- Technical cooperation agreement

Technology Offer

Technology for removing up to 99 % of total organic carbon concentrations from boric acid solutions

Summary

A Czech research institute has developed a technology for removing residues from boric acid solutions and thus increasing its quality. The technology offered has been tested in coolants utilized in the water-based nuclear reactors. Partners interested in adapting the technology for specific needs as well as companies interested in production under a license agreement are sought. Technical cooperation and license agreements are sought.

Creation Date 11 August 2015
Expiration Date 18 August 2016
Reference TOCZ20150811001

Details

Description

Intro:

Boric acid is used in biocidal products and preservatives, personal care products, additives for the preservation of food in glass, ceramics, fertilizers and preparations against burning and other industrial products. Treatment of wood with boric acid reduces its flammability and thus the possibility of fire in buildings. Impregnation of wood with salts of boric acid is used against mould, mildew and rot. Boric acid and its salts repel annoying insects and therefore serve as part of the insecticides.

Boric acid is also used in some nuclear power plants as a neutron poison. The boron in boric acid reduces the probability of thermal fission by absorbing some thermal neutrons.

The problem:

Some applications might need only very high purity of boric acid solutions or repeatable cleaning of boric acid solutions.

A Czech research institute with a long-track of records in nuclear research has developed a technology for removing up to 99 % of Total Organic Carbon (TOC) concentrations from boric acid solutions, thus increasing its quality.

The offered technology cleans a coolant made of mixture of water and boric acid from Total Organic Carbon (TOC) content. Such application has been successfully field-tested in nuclear energy sector. The TOC residues in the nuclear plant coolants are undesirable as they might cause problems with management of the cooling circuit (mainly piping), despite the fact that there are currently no official limits on TOC in cooling water. Moreover, the organic substances deposit on the fuel cells surfaces and thus worsening heat transfer processes and the whole cooling process.

Known competitive solution:

Competitive method currently used in nuclear energy sector for water-based coolant containing TOC or other non - desired residues is complete exchange of the coolant for the new solution. Such solution is costly and not ecological as the waste must be treated as nuclear waste.

The solution offered:

The initial stage of the offered technology is based on combination of ultraviolet radiation and utilization of peroxide - group elements. It has been successfully tested with hydrogen peroxide. The later stages of the cleaning process are based on activated carbon and special mix-beds to remove the potential remains of the previously described chemical reaction. The technology is mobile and usable again at a different facility.

The size and cleaning capacity of the technology is scalable, therefore it could clean from few litres per hour up to tens of litres per hour.

The applications and partners sought:

The institute is looking for partners interested in application of the above described technology and adaptation of the offered technology for specific customer's needs either in nuclear energy power plants or in other sectors such as food, wood or chemistry based on a technical cooperation agreement. Furthermore, possible applications not yet tested are e.g. disposal of antibiotics and hormonal preparations (or drugs in general) in biological wastewater as well as disposal of organic waste gases.

Cooperation with companies interested in production of the technology either only for its domestic use (e.g. nuclear energy) or scaling up for other sector as described above based on a licensing agreement as well as cross-licensing is another cooperation option.

Advantages and Innovations

- Economically-friendly technology due to the fact the cleaning process is easily repeatable so coolant is cleaned on the spot while current practice completely replaces used coolant with a new one.
- Ecologically-friendly technology as the boric acid solution is reusable after treatment
- The technology offered is mobile and therefore easily transferable
- Cleaning capability of the offered technology could vary from few litres per hour up to tens of litres depending on the size of the cleaning device as it is easily scalable. The only limitation known so far is an electrical supply in the point of installation

Stage of Development

Field tested/evaluated

IPR Status

Patent(s) applied for but not yet granted

Keywords

Market

06002002	Nuclear
08004002	Chemical and solid material recycling
08004003	Water treatment equipment and waste disposal systems
09008002	Water, sewerage, chemical and solid waste treatment plants

NACE

D.35.1.1	Production of electricity
E.38.2.2	Treatment and disposal of hazardous waste

M.72.1	Research and experimental development on natural sciences and engineering
M.72.1.9	Other research and experimental development on natural sciences and engineering
M.74	Other professional, scientific and technical activities

Partner Sought

Type and Role of Partner Sought

Type of partner sought:
SME, Research organizations

Specific area of activity of the partner:
Producer of industrial coolants; producer of cooling solutions for energy industry; research organizations active in nuclear or radiation research

Task to be performed by the partner sought:

In the case of licensing agreement:
Acquiring a licence for the technology and cooperation with companies interested in production of the technology either only for its domestic use (e.g. nuclear energy) or scaling up for other sector based on a licensing agreement as well as cross-licensing.

In the case of technical cooperation agreement:
The institute is looking for partners interested in application of the above described technology and adaptation of the offered technology for specific customer's needs either in nuclear energy power plants or in other sectors such as food, wood or chemistry based on a technical cooperation agreement.

Type and Size of Partner Sought

SME 11-50,R&D Institution,>500 MNE,251-500,SME 51-250,>500

Type of Partnership Considered

License agreement
Technical cooperation agreement

Technology Offer

Plasma reactor for waste management

Summary

A Slovak certified company has developed a unique plasma to process waste in an innovative environmentally friendly way. The company is looking for partners interested in optimizing environmental benefits and economic returns to make commercial agreements with technical assistance as well as services agreements.

Creation Date 04 April 2014
Expiration Date 20 August 2016
Reference TOSK20140403001

Details

Description

The Slovak company was founded in 1994 and has long-standing experience in the field of technological processes. It meets the standards of EN ISO 9001:2009 and has a Quality Management System Certificate TÜV SÜD Slovakia.

Their philosophy follows the company slogan: CDS - Creativity, Dynamics, Strength.

The plasma reactor developed by the company is able to process and manage (recycling and energy use) of waste materials produced by metallurgical and chemical industries, wastes originating from the pharmaceutical industry and health service as well as municipal wastes.

The technology offers a progressive and environmentally friendly way of waste management.

An integral part of it is the waste processing of precious and non-ferrous metals, mainly originating from the recycling of waste of electrical and electrotechnical equipments and waste generated in the industrial processing of precious metals. Their furnaces can melt the PCB ground from computers, tablets and mobile phones. Mobiles and tablets are being increasingly sold and are sooner or later turning into waste. The technology can separate rare and expensive elements such as gold, rhodium, copper and molybdenum.

Environmental suitability is one of the decisive factors in the implementation of the plasma reactor.

The company is now seeking to work with new partners on a commercial basis with technical assistance as well as services agreements with partners interested in optimizing environmental benefits and economic returns.

Advantages and Innovations

The plasma reactor presents a complex solution to processing waste materials that pollute the environment. It uses its plasma gasification and melting to form:

- inert slag that can be used in construction or as scatter material,
- alloy and fume, which are suitable for recycling in steel plants,
- a synthetic gas suitable for energy use.

Because there are problems with landfilling of different types of waste materials, this technology presents an environmental facility which applies recycling to enable comprehensive use of all waste components and the energy they produce.

The development of the plasma reactor was awarded with the Waste management prize "Gold ant" under the category of Innovative solution.

Stage of Development

Already on the market

IPR Status

Secret Know-how

Keywords

Market

06007001 Other energy production

NACE

E.38.2.1 Treatment and disposal of non-hazardous waste

Partner Sought

Type and Role of Partner Sought

The Slovak company is looking for partners producing waste and dealing with waste management interested in recycling and energy use to optimize environmental benefits and economic returns.

They are interested in Commercial Agreements with Technical Assistance. Services agreements are also possible for maintenance and further support.

Type and Size of Partner Sought

SME 11-50, Inventor, R&D Institution, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Services agreement
Commercial agreement with technical assistance
Technical cooperation agreement

Technology Offer

On-site recycling of drilling emulsions and lubricants from metal processing

Summary

A German SME, active in the machine tools area, has developed a technology for on-site recycling of drilling emulsions and lubricants from metal processing. The separation of lubricants, emulsions, chips and metal sludge, respectively, is achieved by using a mobile, low-weight separator equipped with skimmers and pumps. The SME seeks partners from the industry for a license agreement, commercial agreement with technical assistance, manufacturing agreement or technical cooperation agreement.

Creation Date 19 May 2015
Expiration Date 05 July 2016
Reference TODE20150519005

Details

Description

The German company, active in Machine tools, was founded in 1945 and transferred to private ownership again in after the political change in 1990; has been specializing in the field of environmental technology since the mid-nineties. This SME has its own design department, and is certified according to the DIN EN ISO 9001 standard, is partner from project planning, design and manufacturing to final assembly.

The technology offered:

Metal processing needs lubrication. Drilling emulsions and lubricants are continuously fed through appropriate tubing to the tool, and recirculated internally for a certain period. During this recirculation process, oil and metal sludge accumulate in the liquids, making them no longer suitable for lubrication, thus giving rise to serious damage of the tools. The liquids have to be replaced from the circulation and pipes, and metal sludge has to be removed from the internal tank. According to the newly developed technology skimmers are used to take off the most polluted fraction of the liquids, i.e. the scum from the surface containing most of the organic pollutants as well as fine metal particles. This fraction is circulated through a mobile, low-weight external device that allows for the separation, by several physical principles, of both metal and organic waste from the liquids prior to recirculation. Circulation rates of typically between 20 and 200 dm³ per hour are achieved. The lifetime of the emulsions and lubricants increases by at least 50%, thus saving time for complete removal of the used liquids from the internal tank and saving costs for the expensive emulsions and lubricants. Furthermore, owing to the density differences between waste oil, drilling emulsions, and metal chips and sludge, respectively, the metal waste is almost free of organic contaminants. This again will save costs for disposal and facilitates the fulfilment of legal requirements for environment, health, and safety.

The SME seeks partners from the industry for a license agreement, commercial agreement with

technical assistance, manufacturing agreement or a technical cooperation agreement.

Advantages and Innovations

The additional circulation of the most contaminated portion of the lubricants and drilling emulsions through a low-weight, mobile separator is a surprisingly efficient means for extension of the maintenance interval of the built-in lubrication of a machine tool.

- Saves time for liquid replacement from the internal tank, i.e., stand-by time of the machine tool, by extension of the liquids' lifetime.
- Saves costs for purchasing both lubricants and drilling emulsions (approximately 2.50 € per dm³) as well as for waste disposal.
- Decentralized separation of liquids to be re-circulated from pollutants.

Stage of Development

Already on the market

IPR Status

Secret Know-how

Keywords

Market

08001014	Lubricants and functional fluids
08003001	Machine tools, other metal working equipment (excl. numeric control)

NACE

C.28.9.9	Manufacture of other special-purpose machinery n.e.c.
E.38.3.2	Recovery of sorted materials

Partner Sought

Type and Role of Partner Sought

The company is looking for partners from industry, especially companies in the field of metal processing, interested in testing the recycling method, or interested in further development to save costs by improving the life time of their machine tools.

In case of a Commercial agreement, the technical assistance would be include information and training.

But a License, Manufacturing agreement and/ore a Technical cooperation agreement are also

highly welcome.

Type and Size of Partner Sought

SME 11-50, Inventor, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

License agreement
Manufacturing agreement
Commercial agreement with technical assistance
Technical cooperation agreement

Technology Request

Innovative uses for plastic waste

Summary

A Scottish Social Enterprise which currently handles and recycles a range of waste is seeking innovative ways of recycling plastic, particularly high density polyethylene (HDPE), polypropylene(PP) and Polyethylene terephthalate (PET), to produce new products. They would like to collaborate with industry or academic partners who can introduce them to innovative processes through commercial agreements with technical co-operation or licence agreements.

Creation Date 16 July 2015
Expiration Date 16 July 2016
Reference TRUK20150716001

Details

Description

A Social Enterprise based in Scotland and established in 1996 to initiate and develop new opportunities for people with learning disabilities has developed a number of trading activities, namely the manufacture of craft products, retailing and recycling.

Their recycling activities involves the handling and recycling of a range of household waste including a variety of types of plastic, mainly HDPE, PP and PET. At present the plastic waste is separated and baled and then sold for further processing outwith the geographic area.

They are seeking industrial or R & D partners working in the circular economy/recycling technology who can introduce them to innovative ways of recycling this waste with a focus on processing the plastics to develop new products, for which there would be an accessible market or a local use. They envisage collaboration leading to commercial agreements with technical assistance or to licence agreements.

The aim of the collaboration is to offer employment and development opportunities as well as to achieve an income stream.

Technical Specification or Expertise Sought

They are seeking a production process which would be accessible or adaptable for operation by adults with learning difficulties.

It is estimated that they will deal with around 200kg of plastic waste per week.

Stage of Development

Already on the market

IPR Status

Other

Keywords

Market

08001006	Processes for working with plastics
08004004	Other pollution and recycling related

NACE

C.22.2.9	Manufacture of other plastic products
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Partner Sought

Type and Role of Partner Sought

Type of partner sought: Industrial or R & D organisation

- Specific area of activity of the partner: circular economy/recycling technology
- Task to be performed by the partner sought:
Collaboration on innovative ways of recycling plastics to produce new products.

Type of Partnership Considered

License agreement
Commercial agreement with technical assistance

Technology Request

Biomass power plant to utilize olive mill waste water

Summary

A Turkish olive oil producing company generates a big amount of olive mill waste water (OMWW) and olive cake every season. The company is looking for a technology in order to convert these 2 wastes into fertilizer or animal feed.

Creation Date	22 July 2015
Expiration Date	25 August 2016
Reference	10 TR 97NA 3HHH

Details

Description

The OMWW is a significant source of environmental pollution in the Mediterranean countries. In general and for economic reasons, OMWW is often concentrated in evaporation ponds and left to dry throughout the summer season. Besides its strong and unpleasant odor, OMWW is a threat to the surface and groundwater sources. Since Turkey signed the Kyoto protocol, drying OMWW in ponds will not be a solution. This situation is the same in European countries and technologies developed to treat this water are not yet at satisfying levels.

During a three months production period, the olive mill of the Turkish company generates 1000 tons of olive mill wastewater (OMWW / ph 5.0, total polyphenols 6.8 g/l, COD(total) 163.5 g/l). Besides this amount there is more than 30.000 tons of additional waste water in the 50 km radius area, which can be collected.

For this reason the Turkish company wants to add value to this waste water and they are planning to build a plant, which will be able to convert OMWW and Olive Cake into fertilizer or animal feed.

At this stage, the company is looking for engineering and construction services, which can supply the necessary technology and legal consultancy for the construction of a plant. The company is ready for commercial agreements with technical assistance, technical cooperation and joint venture agreements.

Technical Specification or Expertise Sought

Any technology that is able to transform the organic components of the waste water and olive cake into required products will be considered. The plant should have a capacity of 1 ton per hour.

The technology should also be able to utilize other types of biomass such as wine, sugar, beer, citrus, animal wastes or algae.

Stage of Development

Already on the market

IPR Status

Copyright

Keywords

Market

06001007	Other oil and gas
06003009	Biomass and Biofuels
06007001	Other energy production
08004003	Water treatment equipment and waste disposal systems

NACE

E.38.2.1	Treatment and disposal of non-hazardous waste
E.38.2.2	Treatment and disposal of hazardous waste

Partner Sought

Type and Role of Partner Sought

- Type of partner sought: Industry.
- Specific area of activity of the partner:
Power plant construction, energy generation from biomass
- Task to be performed by the partner sought:
Under a commercial agreement with technical assistance, the Turkish company expects to find a partner that has the technology to build a power plant to work with liquid biomass.
Under a possible technical cooperation agreement, the company is ready to work cooperatively on technologies to be further developed to its final stages.
Under a Joint venture agreement, the Turkish company is ready to co-invest the mentioned power plant in Turkey.

Type and Size of Partner Sought

SME 11-50, University, R&D Institution, SME <10,>500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Commercial agreement with technical assistance
Technical cooperation agreement
Joint venture agreement

Technology Request

Urgent - Sustainable packaging for food delivery

Summary

A Brussels-based (Belgian) start-up operating in the catering services looks for a sustainable packaging solution which takes into account the environmental impact throughout its whole lifecycle. The start-up is open to different technical solutions developed with plant-based materials, paper, paperboard, etc. Aluminum and PVC are not accepted. The company looks for technical cooperation or commercial agreement with technical assistance with producers or suppliers of food sustainable packaging

Creation Date 23 June 2015
Expiration Date 18 October 2015
Reference TRBE20150225001

Details

Description

Two young entrepreneurs are about to launch in Brussels, Belgium (planned March 2015) a new concept of sustainable catering (restaurant service).

This is intended to be a take-away counter / shop of daily specials made of qualitative products compliant with the slow food concept and the short food supply chain, then in line with bio, local, ethics, greedy approaches to food. Special attention will be paid to product's origin, the production condition and processing method.

The objective of this Brussels-based start-up is to provide their clients with a qualitative, varied, tasteful, fast, easy and affordable meal for dinner made of good and fair food. A way to fight against the homogenisation of taste in food industry and its distribution chains, against meals made of ingredients with pesticides, chemical fertilisers and genetically modified organism (GMO).

The whole customer experience has to be aligned with this philosophy and its overall concept behind the sustainable project, including the food packaging chosen for food sales. This latter must be environmental-friendly throughout its entire life cycle.

The company is looking for a packaging solution which must be fully aligned with the philosophy of the start-up.

Technical Specification or Expertise Sought

The start-up is looking then for a sales packaging designed and manufactured in a sustainable way, whose impact on the environment has to be close to zero even at the end of its life since the packaging should be biodegradable.

The start-up has no specific preference as for the technical solution, meaning that potential chosen packaging material can come from different sources, provided that the environmental criteria are applied to it. The start-up is then open to technical solutions made of plant-based materials, paper or paperboard, starch. Aluminum and PVC are totally excluded.

Simple and natural materials or recycled materials will be preferred. The packaging materials must be at least recyclable, offer safe and stable packaging that guarantees safety and food quality along the entire product self-life and compliant with the following technical requirements:

- Suitable to food contact
- Compliant with oven use (at least for 15 minutes at 180° (Celsius degrees))
- Compliant with microwave use
- Size : 18 cm x 12 cm x 5 cm
- Affordable Price : max € 0.5 / piece
- Capacity : 1L
- Transparent closure to let the clients see the content (meal)

In a full life cycle approach, transport distance between the potential supplier and the Brussels-based company will also play an important role in the selection criteria and this includes as well the material on which the solution is based (eg sugar cane is recyclable but the countries of origin are far from Belgium).

Stage of Development

Already on the market

Keywords

Market

07005001	Fast food restaurants
07005002	Other restaurants
09004006	Packing products and systems

NACE

1.56.1.0	Restaurants and mobile food service activities
1.56.2.1	Event catering activities

Partner Sought

Type and Role of Partner Sought

Type of partner sought: Industry (small or large industry)

Specific area of activity of the partner: producers or suppliers of food sustainable packaging

Task to be performed by the partner sought: provide the Belgian start-up with a turn-key sustainable packaging solution

Type and Size of Partner Sought

SME 11-50, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Commercial agreement with technical assistance
Technical cooperation agreement

Technology Request

Ecological lead, tin, and zinc separation from e-waste containing noble metals

Summary

Lithuanian SME specialized in recycling technologies is looking for solutions that could help to separate and recover lead, tin, and others accompanying metals in environmentally friendly way from the electronic scrap that contains noble metals in downstream processes: electrodeposition or deposition using reducing agents. The level of development should be >75%. SME is looking for partners for technical cooperation or joint venture.

Creation Date 29 July 2015
Expiration Date 05 August 2016
Reference TRLT20150729001

Details

Description

The main activity of Lithuanian company is related to electronic waste treatment. Company is planning to enhance technology development activities that are related to metal recovery from electronic waste containing low amounts of noble-metals. In order to recover noble metals in ecologically friendly way there is a need to separate lead, tin, and other metals from fraction of noble metals at the low concentrations levels. The requested technology/solution shall enable separation of non-targeted metals in ecologically friendly way from the fraction containing noble metals.

The requested technology shall allow the treatment (separation):

- capacity no less 1 tone per operation;
- separated non-targeting metals have to be in liquid phase;
- separation from the fraction containing noble metals by means of filtration;
- technology shouldn't involve processes where hydrochloric, sulfuric, phosphoric and nitric acids are used;
- the stage of development should be >75%

Technical Specification or Expertise Sought

Expertise requested must be familiar with ecological lead, tin, and zinc separation from e-waste containing noble metals on an industrial scale.

Stage of Development

Available for demonstration

Keywords

Market

08004002	Chemical and solid material recycling
09003001	Engineering services
09007004	Engineering and consulting services related to construction

NACE

E.38.2.1	Treatment and disposal of non-hazardous waste
E.38.2.2	Treatment and disposal of hazardous waste

Partner Sought

Type and Role of Partner Sought

- Type of partner sought: academia or industry.
- Specific area of activity of the partner: electronic waste treatment and metal recovery.
- Task to be performed: To propose a solution/technology for the separation procedure of lead, tin, zinc from the electronic waste containing low amounts of noble metals.

Type and Size of Partner Sought

SME 11-50, University, Inventor, R&D Institution, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Commercial agreement with technical assistance
Technical cooperation agreement
Joint venture agreement

Technology Request

A French company seeking partners for waste glass fiber recycling and repurposing for new product development

Summary

A French company based in North of France is expert in recycling engineering processes and circular economy approaches. They are looking for partners interested in recovering glass fiber waste (waste from industrial process, not from composite recycling) with the aim of repurposing these fibers for new product development. The company seeks technical cooperation or commercial agreement with technical assistance with companies located in countries close to the French border.

Creation Date	06 August 2015
Expiration Date	11 August 2016
Reference	TRFR20150806001

Details

Description

A French engineering company specialized in recycling issues and creation of circular economy close-loop is facing a problem of repurposing glass fiber waste stem from industrial process.

First step of glass fiber manufacturing process is the extrusion of molted glass through a bushing plate where the fibers are formed through multiple nozzles. Melt glass filaments showing some impurity or problems on process parameters lead to filament rupture. These broken filaments are then considered like glass fiber waste. These fibers have the same composition as E type glass (60% SiO₂). Analyses made on these fibers waste have shown that they are not presenting heavy metal concentration higher than regulation threshold (inert waste). This is still continuous and long fibers, showing a diameter equal or slightly superior of normal glass fiber produced (about 10µm). The company can propose this kind of waste between 7000t/year and 10000t/year.

After extrusion step of glass fiber manufacturing process, when the fiber is drawn, several transformation steps are done (like sizing to protect the fiber, etc). Glass fiber waste is also generated during these different steps. The company can propose this kind of waste between 3000t/year and 5000t/year.

Fibers can be proposed as such or crushed, sieved if needed. The company can also propose to the partner the implementation of ad hoc processing tools to manage the glass fiber waste (crushing, sieving, drying, etc), according to the partner needs for the material preparation.

The objective of the company's project is to offer a new solution for glass fiber recycling issues and highly reduced landfill of this waste. They need a partner able to reuse these glass fibers waste on new product development or new secondary raw material production. Partners are mainly sought close to the French border in order to keep transportation costs as low as

possible.

Technical Specification or Expertise Sought

The company is looking for a partner with the capability of repurposing glass fibers waste (details on description part above) for new project development, where properties of these glass fibers are suitable.

Stage of Development

Already on the market

Keywords

Market

08004004	Other pollution and recycling related
09003001	Engineering services
09004008	Other manufacturing (not elsewhere classified)

NACE

M.71.1.2	Engineering activities and related technical consultancy
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Partner Sought

Type and Role of Partner Sought

The company is seeking manufacturers who are familiar with material recycling and waste repurposing, especially glass fibers. They want a partner who ensures the glass fiber waste will not be landfill. Main objective of the partner sought is to propose solutions to recover this glass fiber waste and make new products with them, as they can directly improve properties of a product (such as fiber reinforcement for composite) or can be consider as secondary raw material. Partners are mainly sought close to the French border in order to keep transportation costs as low as possible.

The partner can work under a technical agreement or commercial agreement with technical assistance. The best partnership suitable for both parties can be determined throughout further exchanges.

Area(s) of activity of the partner: recycler, product manufacturer, composite industry, insulation materials, etc. Any other area of activity not listed above with potential use of these fiber waste is also of interest.

Type and Size of Partner Sought

SME 11-50,SME <10,>500 MNE,251-500,SME 51-250,>500

Type of Partnership Considered

Commercial agreement with technical assistance
Technical cooperation agreement

Technology Request

Hydrophobic coating onto a natural and compostable fabric, without effects on compostability

Summary

A Swiss company has launched its first compostable clothing line. In order to achieve compostability for a piece of clothing, the guidelines for design and production are very strict. As a consequence of this the product development and production process leaves little to no alternatives for features like water repellency. The company is looking for partners who have the know-how for this kind of coating respecting their criteria. Commercial, technical or research agreements could be possible.

Creation Date 17 August 2015
Expiration Date 18 August 2016
Reference TRCH20150817001

Details

Description

A Swiss company recently launched its first compostable clothing line with t-shirts, pants and shirts. In order to achieve compostability for a piece of clothing, the guidelines for design and production had and have to be very strict. This consequence during the whole product development and production process leaves little to no alternatives for certain features, such as water repellency.

They are now looking for know-how or technologies to achieve water repellency by means of a hydrophobic coating. The technology or know-how to apply should not compromise on the compostability of the clothes.

The existing clothing line has following characteristics:

Grown in Europe

The fabric is made from bast and modal fibres grown in Europe. Producing these native fibres protects the soil and requires much less water than cotton which is easier to process.

Other fibres fitting the same criteria (low footprint, European, biodegradable) would be possible.

Short transport routes

Compared to common textiles, the path from fibre to product is a short trip. The various production steps for the fabric take place at a distance of maximum 2'500 kilometers (1'600 miles) from Zurich.

Not toxic

While flax and hemp cultivation requires almost no pesticides, they also use as few chemicals as possible when further processing bast fibres. The company avoids bleaching altogether. This means that the fabric may also be recommended for babies and infants without any restrictions. This is the conclusion reached by Oeko-Tex® Standard 100 (product class I), an independent

control and certification system.

Factory proof

Fabrics and garments have to be long-lasting and sturdy. The Swiss company uses it as workwear in the factory and also at the bar after work. The employees subjected all fabrics and products to strict testing, also taking style into account.

For the compost

The fabric satisfies the toughest factory requirements and yet is 100 % biodegradable in compost within just a few months.

Background of the company

The company is design driven and a pioneer in its area. Several products of their other product line are exposed in well-known museum collections. Products can be purchased world-wide.

Cooperation

The company is looking for partners or research partners who have either the know-how to achieve water-repellent properties of clothes or are willing to develop it together with the company respectively with the fabric producing company.

Every effect a solution has on the water resistance of a fabric is interesting for the Swiss company.

The company believes that the solution could come from the textile sector but more likely from other industries like e.g. the furniture industry.

Following cooperation types might be considered:

- Commercial agreement with technical assistance: with a partner that offers the suitable solution
- Technical cooperation agreement: with a partner who has a solution which has to be adapted to the requirements of the Swiss company
- Research cooperation agreement: with a research partner to develop the solution as no existing solution is available

Technical Specification or Expertise Sought

Beside the characteristics of the existing clothing line the following criteria has to be fulfilled:

- The end result has to dissolve completely in an ordinary compost within a few months. = Cradle to Cradle approach
- If possible, the solution should be vegan
- The solution has to be applicable on natural fabric made of flax, hemp and modal
- It should be possible that the coating can be applied in Europe

Regarding the water repellency

- Breathability of the fabric: optional
- The solution might be applied during the finishing process of the fabric or might be renewed during some time of use

Keywords

Market

09004003

Textiles (synthetic and natural)

NACE

C.14.1.9

Manufacture of other wearing apparel and accessories

Partner Sought

Type and Role of Partner Sought

The specific area of activity of the partner:

For all the three cooperation types the sought partner should be active in the coating of textiles or in the water repellence of materials and meet the above mentioned criteria (in research stage or further developed).

The tasks to be performed by the partner sought:

Commercial agreement: Provide the suitable solution.

Technical cooperation agreement: Adapt an existing solution to the required specifications of the Swiss company.

Research cooperation agreement: Develop the suitable solution together with the Swiss company.

Type and Size of Partner Sought

SME 11-50, University, Inventor, R&D Institution, SME <10,>500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Commercial agreement with technical assistance

Technical cooperation agreement

Research cooperation agreement



***Medio Ambiente:
Ciencias Marinas***

Technology Offer

Underwater robots technology for high-resolution and fast distributed water sensing

Summary

A Swiss-based company is providing innovative water sensing services. Using a group of small autonomous underwater robots, each fitted with an array of appropriate sensors, a large number of water quality parameters with unprecedented spatial resolution and temporal consistency are obtained. Compared with conventional methods, up to 100x as many samples are obtained. Partners sought would purchase the analysis services, a license on the vehicles or start a technical cooperation.

Creation Date	11 May 2015
Expiration Date	13 July 2016
Reference	TOCH20150511001

Details

Description

Measurements of water quality parameters are important in water management, ecology, environmental impact assessment and regulatory oversight. Water utilities, civil engineering companies, environmental researchers and regulators need water quality data for building and calibrating hydrological models and to assess water treatment plants, freshwater reservoirs and coastal waters. Currently, such measurements are difficult and costly to obtain for larger water volumes; often, only spot measurements are available. As electromagnetic waves cannot penetrate far beyond the water surface, remote-sensing methods (satellites) only work for measuring surface phenomena. As a result there is a large group of potential customers which require dense underwater measurements at an affordable rate. In order to obtain sub-surface data, sensors need to be placed exactly at the location where the water is to be sampled. This is currently achieved by lowering a multi-parameter sonde from a boat or ship, which requires a crew, complex equipment and is expensive to operate. A single boat can only obtain a comparably small amount of data-points. This makes it virtually impossible to get "snapshots" of dynamic 3D volumes, which consist of many data points collected within a short amount of time in order to maintain temporal consistency. These snapshots are however essential to analyze fast changing phenomena.

A limiting factor in water research is therefore often the scarcity of data. The presented technology addresses this problem by creating a new type of underwater robot equipped with sensors which is specifically designed to operate in large swarms, using novel distributed localization, communication and coordination methods, to simultaneously obtain data from many places in parallel. In most cases these robots can be launched from the shore to collect data fully autonomously over many hours, to deliver rich, spatially dense sample points of a specified water volume. Such a data set of samples obtained in parallel from many different locations will resolve spatially complex and fast-changing phenomena, which would not be

detectable in traditionally collected samples. An understanding of these phenomena is important to resolve many research questions as well as for a number of commercial applications such as impact assessment of dredging operations and flow modeling for water treatment plants. By accelerating the sampling process by an order of magnitude and lowering the operating costs and the per-sample costs dramatically, researchers will be able to obtain an unprecedented amount of high resolution data, and will be able to respond to significant events such as heavy rainfall, storms or spills very rapidly without being held back by organizational overheads or budget constraints.

Figure 1 shows a typical application scenario. In this scenario the customer wants to know the 3D structure of a plume flowing out of a water treatment plant (or desalination plant). The conventional approach uses a boat fitted with a multi-parameter sonde. During a typical 8 hour deployment this boat is only able to capture 12 profiles out of which only very few or even none detect the plume (Figure 1 top). Using on the other hand a group of 15 autonomous underwater vehicles (AUVs) as shown in Figure 2, all fitted with the same multi-parameters sensor as the boat, a 3D point cloud of 100000 samples is obtained, which clearly reveal the structure of the plume (Figure 1 bottom).

The sensor array incorporated into this AUV is an EXO2 sonde from YSI (<https://www.ysi.com>). A large choice of different sensors can be carried by the AUV in parallel. Depending of the type of agreement the partner would be a customer of the water analysis services, a licensee of the underwater autonomous vehicles technology or a cooperator using the presented vehicles with technical assistance and adaptation to the particular sensing required.

Advantages and Innovations

Applications for underwater sensing using robotic technology have been limited to deployments of a small number of robots. The Swiss company developed a vehicle which can be manufactured for at a significantly lower cost and can be deployed in large numbers (10-50) by a small number of operators (1-3). As a result water quality parameters with a much higher spatial resolution and temporal consistency are obtained, that can reveal structures that have until now been invisible.

Stage of Development

Field tested/evaluated

IPR Status

Patent(s) applied for but not yet granted

Keywords

Technology

01001001	Automation, Robotics Control Systems
01003023	Environmental and Biometrics Sensors, Actuators
07003003	Marine Science
10004008	Water Resources Management
10004009	Marine Environment

Market

06002004	Hydro-electric
08002004	Robotics
08004003	Water treatment equipment and waste disposal systems

NACE

M.71.1.2	Engineering activities and related technical consultancy
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Partner Sought

Type and Role of Partner Sought

Depending on the type of partnership, the partner would be an environmental regulator, coastal engineering company or drinking water supplier requiring high resolution data. Or technology solutions provider working in the field of underwater sensing and interested in our technology.

Depending of the type of agreement the partner would be a customer of the water analysis services, a licensee of the underwater autonomous vehicles technology or a cooperator using the presented vehicles with technical assistance and adaptation to the particular sensing required.

Type and Size of Partner Sought

SME 11-50, R&D Institution, SME <10, >500 MNE, 251-500, SME 51-250, >500

Type of Partnership Considered

Services agreement
License agreement
Technical cooperation agreement

Technology Offer

Maritime engineering in the largest wave flume of the world

Summary

A German institute with vast know-how in coastal and maritime engineering has one of the largest laboratory facilities worldwide, the large wave flume. The computer-controlled, hydraulically driven wave maker allows the accurate simulation of natural waves, storm surges, tsunamis and rogue waves under laboratory conditions. The institute is looking for partners from maritime industry interested in cooperative research and development agreements, in-house research and technical cooperation.

Creation Date 27 July 2015
Expiration Date 11 August 2016
Reference TODE20150724001

Details

Description

A German institute working on coastal and maritime engineering has one of the largest laboratory facilities worldwide. The large wave flume has 300 m length, 5 m width, 7 m depth and wave heights up to more than 2 m. The computer-controlled, hydraulically driven wave maker with a maximum power of 900 kW allows the accurate simulation of natural waves, storm surges, tsunamis and rogue waves under laboratory conditions.

Several experiments on dikes and breakwaters, on coastal erosion and protection as well as on the offshore wind and wave energy devices conducted by the institute have had significant impact on basic as well as applied research in coastal and maritime engineering and were crucial for the design and dimensioning of structures and devices.

The research of the institute is mainly application-oriented. Co-operations with companies from the maritime industry are sought through a variety of contractual mechanisms, including cooperative research and development agreements, in-house research at university laboratories and other forms of technical cooperation.

Advantages and Innovations

- One of the largest laboratory for coastal and maritime engineering facilities worldwide;
- Vast know-how in coastal and maritime engineering with significant impact on basic and applied research;
- Equipment for large-scale experiments;
- Fulfillment of international standards.

Stage of Development

Already on the market

IPR Status

Other

Keywords

Technology

04005002	Hydropower
04005008	Wind energy
07003003	Marine Science
10001002	Assessment of Environmental Risk and Impact
10002007	Environmental Engineering / Technology

Market

06003003	Wind energy
06003004	Marine energy
09005	Agriculture, Forestry, Fishing, Animal Husbandry & Related Products

NACE

M.72.1.9	Other research and experimental development on natural sciences and engineering
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Partner Sought

Type and Role of Partner Sought

- Type of partner sought: industrial partners for bilateral research and technical cooperation.
- Specific area of activity of the partner: maritime industry; coastal protection; offshore wind and wave energy.
- Possible tasks to be performed by the partner sought: (1) jointly develop and participate in research and development projects on coastal and maritime engineering or related topics; (2) assign in-house research at university laboratories related to the needs of the partner; (3) if requested by the potential partner other access to the know-how and the laboratories will be considered under a technical cooperation agreement

Type of Partnership Considered

Technical cooperation agreement
Research cooperation agreement

Technology Offer

High-voltage wet-mate connector for underwater connections

Summary

An innovative French SME is developing a patented wet-mate connector, allowing remote-operated underwater connecting / disconnecting. That solution is simpler, cheaper and more robust than traditional connector. Entities dealing with marine operations and cabling (such as marine renewable energy, oil & gas, scientific exploration) are sought for commercial agreement with technical assistance, technical or research cooperation agreement.

Creation Date 06 May 2015
Expiration Date 06 August 2016
Reference TOFR20150505001

Details

Description

Existing wet-mate connectors are expensive and, due to their sophisticated mechanisms, have high failure rates.

The innovative connection system of the French SME consists of a recoverable tool that supersedes most functions.

The connector itself is simple, economic and can be adapted to various applications; it also meets the electric and installation requirements of novel marine renewable energy systems. Its patented design consists of an underwater tool that is used to connect standard dry inserts in a removable oil chamber.

The concept uses a standard, terrestrial connector, sealed inside an oil-filled chamber by a remotely-operated underwater tool, without the use of an additional vehicle or diver.

The installation can be carried out from a medium-size vessel and the tool can be reused.

The tool can indeed be used for numerous connections since it is recovered after each operation:

- High-voltage electricity from marine renewable energy
- Optical fiber network
- Information network

The connection system consists of two components:

- three-phase / optical fiber subsea connector
- the connection tool

According to technical specifications and further development needed; several types of partnerships are considered with entities dealing with underwater operations and cabling such as marine renewable energy, oil & gas, scientific exploration: commercial agreement with

technical assistance, technical or research cooperation agreement in case of joined development with the French SME (possible EU funded).

Advantages and Innovations

Simpler, cheaper and more robust than conventional connectors
Remote-operated tool from medium-size DP vessel
No need for diver or ROV (Remotely Operated Underwater Vehicle) intervention
Hybrid power / data custom inserts on demand

Stage of Development

Available for demonstration

IPR Status

Patents granted, Trade Marks

Keywords

Technology

04001004	Transmission of electricity
04007001	Energy management
07003003	Marine Science
10004009	Marine Environment

Market

03004003	Other electronics related equipment
05008001	Marine products
06003004	Marine energy

NACE

C.27.3.2	Manufacture of other electronic and electric wires and cables
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Partner Sought

Type and Role of Partner Sought

All organizations with marine operations and cabling: oil & gas, renewable marine energy, scientific operations.

According to their specifications and further development needed, different kinds of partnerships are considered: commercial agreement with technical assistance, technical cooperation or

research cooperation agreement (possibly EU funded).

Type of Partnership Considered

Commercial agreement with technical assistance

Technical cooperation agreement

Research cooperation agreement