Profile Status: Published

Technology Offer

New technology for neutralisation of industrial wastewater, concentrated solutions and solid waste containing heavy metals

Summary

A Polish company has developed a new technology for neutralisation of industrial wastewater, concentrated solutions and solid waste containing heavy metals. It can be used for neutralization of effluents from electroplating shops, tanneries and also wastes from different hazardous chemical processes. The partners for technical cooperation or joint venture are sought and also partners for further product development through research cooperation.

Creation Date	10 May 2017
Last Update	18 May 2017
Expiration Date	18 May 2018
Reference	TOPL20170510001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/edf0c71c-4581-4bf2-bdac-67e1cae95a83

Details

Description

A Polish company active in waste water treatment technologies development has developed a new technology for neutralisation of industrial wastewater. It can be also used for concentrated solutions and solid waste containing heavy metals neutralisation (effluents from electroplating shops, tanneries and also wastes from metal thermal treatment processes, photographic processes, cyanide processes and other hazardous chemical processes). The system can be utilised both in already existing plants which do not have a regulated water-effluent management system, as well as in newly designed plants. The wide range of technology supplementary equipment makes it possible to use the method both in manually operated plants as well as in modern fully automatic or program operated technological lines.
The basic aim of the method is to conduct treatment with simultaneous recovery of metals from concentrated technological bath solutions, dragged out on workpieces, during chemical rinsing directly following the main process, as well as from concentrated spent technological bath solutions which are periodically exchanged and also from sediments and such. The method allows practically waste-free operation with only minimal consumption of water for rinsing. Capital costs of industrial waste treatment plants using the elaborated method comparing to traditional methods are up to 50 % lower. Operating costs are up to 40 % lower than those of conventional treatment plants.

The method and equipment are being protected by a number of patents and patent applications.

The company is serching for industry/research partners capable of establishing technical cooperation or joint venture.The partners for further product development through research cooperation are also sought.

Advantages and Innovations

-significantly reduced water consumption,
-direct, 100% and selective recovery of heavy metals such as Au, Ag, Cu, Cd, Zn, Cr, Ni etc.,
-number limitation of technological wastewater pipelines to one
-number limitation of ventilation ducts in the production plant to one
-limitation of the waste purification shop to one tank for final neutralisation and pH adjustment
-reduction of the chemicals consumption by treating concentrated solutions
-possibility of repeated utilisation of the reagents for different heavy metals
-chemicals and water operated in a closed-loop system
-constant water cleaning in build-in purifiers
-chemical rinsing and water spray rinsing are employed both in one rinsing tank
-significantly reduced the area needed for setting up installations comparing to the traditional ones
-chemical vapours are being stopped by air barriers created with a help of additional air blowers
-the equipment is simple in construction and easy to operate
-simple construction of the recovery basket and filtration sack what allows easy washing, dewatering and drying of the recovered metal sediment
-very simple method of process analysis and controlling

Stage of Development

Already on the market

IPR Status

Patents granted

Profile Origin

Other

Keywords

Technology

10003004	Recycling, Recovery
10004001	Industrial Water Treatment
10004003	Wastewater Recycling

Market

08004002	Chemical and solid material recycling
08004003	Water treatment equipment and waste disposal systems
08004004	Other pollution and recycling related

NACE

E.36.0.0	Water collection, treatment and supply
E.38.2.2	Treatment and disposal of hazardous waste

Network Contact

Issuing Partner

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Open for EOI : Yes

Dissemination

Send to Sector Group

Environment

Client

Type and Size of Organisation Behind the Profile

Industry SME <= 10

Year Established

1990

Already Engaged in Trans-National Cooperation

No.

Languages Spoken

English
German
Russian
Polish

Client Country

Poland

Partner Sought

Type and Role of Partner Sought

The company is serching for industry/research partners active in waste water treatment technologies development capable of establishing technical cooperation, research cooperation or joint venture. The company is interested in further product development through a research cooperation or development of a new quality/technology together with a potential research partner.

Type and Size of Partner Sought

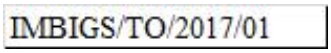
SME 11-50,University,R&D Institution,SME <10,SME 51-250

Type of Partnership Considered

Technical cooperation agreement
Joint venture agreement
Research cooperation agreement

Attachments

obraz.png



Profile Status: Published

Technology Offer

Sun sensors and solar tracking systems for the renewable energy industry

Summary

A Spanish technology based company specialized in Micro Electro Mechanical Systems technology (MEMS) offers high accurate sun sensors and solar tracking systems for the renewable energy industry. These innovative solar tracking technologies significantly improve the efficiency and thus profitability of solar power plants. The company is looking for commercial with technical assistance, license, R&D cooperation and/or financial agreements.

Creation Date	06 June 2016
Last Update	01 December 2017
Expiration Date	12 June 2018
Reference	TOES20160531002
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/bcbf0f1f-bce1-47af-a066-81bd4a92beab

Details

Description

The Spanish technology based company was created in 2009 as a spin-off of the School of Engineering, University of Seville. It is specialized in Micro Electro Mechanical Systems technology (MEMS) and its application to the design and development of high accurate sun sensors and control systems for different industries such as renewable energy, aeronautics, automotive and space. Moreover sun sensors and control systems, the company offers specific consultancy and advising services, including the design, development and implementation of customized solar tracking systems.

The efficiency of the existing solar plants with fixed photovoltaic panels (PV) is quite low compared with those equipped with solar tracking technologies. These technologies include CPV, Stirling, parabolic trough, solar towers and linear Fresnel, among others. The improved efficiency achieved by following the sun continuously is pushing the solar energy industry towards these solar tracking technologies, with moving structures designed to track the sun with high accuracy. In this regard, the sun sensors measure the incident angle of the sunlight source and its radiation level, in order to maximize the solar power generation.

The company offers a wide family of sun sensors -called Industrial Sun Sensors (ISS)- to improve the solar tracking accuracy. In addition to the aforementioned solar tracking technologies, the sun sensors can also be used for different applications, such as weather stations, calibration systems, automation systems, attitude control, sun radiation measurements, heliostats, and heating, ventilation and air conditioning (HVAC) systems for the automotive

industry. The company´s ISS models include sun sensors for one or two axes tracking, with analog or digital interface, and with configurable field of view and accuracy, according to the customer requirements.

The sun sensor models offered by the company are listed below:

- Model 1: This is the most accurate sun sensor model, and provides the incident angle of a sun ray in two axes and the direct solar radiation via a digital communication interface.
- Model 2: Based on the first model. The model 2 has a reduced calibration procedure to achieve high production capacity with similar accuracy characteristics, in order to be a suitable solution for big solar power plants with solar trackers.
- Model 3: This sun sensor allows the measurement of the incident angle of a sun ray by providing 4 analog outputs and by means of a simple calculation procedure, achieving very low power consumption.
- Model 4: This sun sensor includes one accelerometer, one magnetometer, and one sun sensor in the same package to measure the position, the sun ray angle and the DNI solar radiation, providing all the information to control the tracking system.
- Model 5: This sun sensor allows the measurement of the sun ray incident vector by providing 4 analog outputs, and has been specially designed with a very small size for a straightforward integration by PCB surface mounting.

The applications of the sun sensors are summarized as follows:

- Sun tracking/pointing systems
- Weather stations
- Heliostats
- Calibration systems
- Aircraft attitude control
- Determination of sun radiation
- HVAC
- Domotics

Concerning cooperation agreements, the company offers:

- Commercial with technical assistance and license agreements, in order to increase its customer base and transfer its technology,
- R&D projects agreements, in order to continuously improve its sun sensors and find new applications,
- Financial agreements, to improve the international diffusion of its technology and foster key partnerships within the renewable energy industry.

Advantages and Innovations

The company´s sun sensors have been designed with a unique and novel proprietary technology based on MEMS (Micro Electro Mechanical Systems technology) fabrication processes to achieve high integrated sensing structures at low cost.

The main competitive advantages of these sun sensors are summarized as follows:

- High miniaturization and low weight.
- Very low power consumption.
- High reliability and accuracy.
- High efficiency and profitability of power generation systems.
- Reduced time and costs of setup and maintenance.
- High operation range and sensitivity.
- Low cost device.
- Mass production.

In addition to sun sensors, the company also provides a solar tracking controller. This controller has been designed for a wide range of applications, including a control module and a sun sensor of high accuracy. Closed loop operation is based on the sun sensor ISS-DX or MASS, which can reach up to 120º field of view and accuracies better than 0.01º. The accuracy in open loop is better than 0.01º, allowing a good fit of the tracking in adverse weather conditions. This solar tracking controller is compatible with AC and DC engines, uses RS485 communications and has several analog and digital inputs and outputs. In addition to this, no maintenance or calibration is needed after first startup installation, allowing a significant cost reduction.

Stage of Development

Already on the market

Comments Regarding Stage of Development

More than 1000 ISS units delivered to different solar power plants and solar research centres.

IPR Status

Patents granted,Exclusive Rights,Other

Comment Regarding IPR status

Sun sensor technology and associated patents (granted in Spain) -about sun sensors and control algorithms of solar trackers and heliostats- have been fully transferred from University of Seville to the company by means of an exclusive exploitation agreement.

Profile Origin

National or Regional R&D programme

Keywords

Technology

01001	Electronics, Microelectronics
06005002	Sensors & Wireless products
09001009	Sensor Technology related to measurements

Market

06003001	Solar/thermal energy

NACE

C.26.5.1	Manufacture of instruments and appliances for measuring, testing and navigation

Network Contact

Issuing Partner

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Open for EOI : Yes

Dissemination

Send to Sector Group
Nano- and Microtechnologies

Client

Type and Size of Organisation Behind the Profile

Industry SME <= 10

Year Established
2009

Turnover
<1M

Already Engaged in Trans-National Cooperation

No.

Experience Comments

ESA certifications: ECSS-Q-ST-70-08, ECSS-Q-ST-70-28, ECSS-Q-ST-70-38 and ECSS-Q-ST-70-26 (Category 3) Certified clean room ISO 8

Certification Standards

ISO 9001
ISO 14001

Languages Spoken
English
Spanish

Client Country
Spain

Partner Sought

Type and Role of Partner Sought

The company is looking for both private and public partners.

With regard to the private sector, the target partners are companies that develop solar power plants with CPV, CSP, Stirling, Fresnel or parabolic through technologies, in the national and international markets. The typology of these partners would include from SMEs to multinational companies as big contractors.

Regarding the public sector, solar laboratories and research centres involved in solar tracking technologies and solutions may also be perfect partners.

The collaboration type preferred would be through commercial agreements with technical assistance, license agreements for technology transfer and cooperation agreements in R&D projects. Financial agreements with business angles and capital investors are also welcome to improve the diffusion of the company´s technology and foster key partnerships within the renewable energy industry.

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

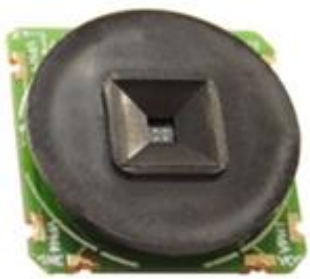
License agreement
Financial agreement
Commercial agreement with technical assistance
Research cooperation agreement

Attachments

Sun sensors.jpg



Industrial Sun Sensor (ISS)



Nano-ISS



Solar tracking Controller

Profile Status: Published

Technology Offer

Green Roof inventory, mapping and potential analysis

Summary

A German association and an SME specialized in IT geoinformation systems have developed a remote sensing tool using airborne optical imagery to estimate the percentage of vegetated areas on building roofs. It can also be used to identify potential or most suitable Green Roof sites. It is supportive to green urban planning policies to optimize the usage of green roofs. Urban planners, municipalities and service providers are sought for commercial agreements with technical assistance.

Creation Date	26 June 2017
Last Update	26 October 2017
Expiration Date	26 October 2018
Reference	TODE20170626001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/4a4cf1b8-cf4a-4633-ac95-ae33f462c9d9

Details

Description

Green Roofs, also known as “vegetated roofs” or “living roofs”, can help to adapt cities for climate change, through the provision of cooler microclimates and reduced stormwater run-off. To a certain extent they can compensate for lost green areas at ground level and enhance biodiversity in urban ecosystems.

In order to evaluate these positive effects in a quantitative way, information about the already existing Green Roofs and potential Green Roof sites is needed. However, not many municipalities have detailed information about the number of Green Roofs on urban rooftops, their location and potential Green Roof sites on already existing buildings. It is therefore not surprising that Green Roofs are often mentioned in environmental reports as important measure for climate change adaptation but do not enter into urban climate modelling due to the lack of reliable data. This knowledge deficit provided the background for the development of a new remote sensing method for the identification of Green Roofs and potential Green Roof sites.

A German association in cooperation with an SME specialized in IT geoinformation systems, remote sensing data and IT development and a research institution have developed a method with which already existing Green Roofs and potential roof areas can be identified and inventoried from a “birds-eye view”. The database can make a valuable contribution to the application of Green Roofs in sustainable urban planning. The software has the potential to be used on an international scale if the necessary input data are available.

The Green Roof detection tool uses high resolution satellite or airborne optical imagery (visible

and infrared), Digital Surface Models and existing building outlines maps (footprints), to estimate the percentage of vegetated areas on building roofs. In addition to the Green Roof detection tool the remote sensing technology can also identify potential Green Roof sites by combining Digital Surface Models with mapped building outlines. Flat roofs are most suitable to be converted into Green Roofs. A second criterion is the presence of gravel layers. Buildings with gravel roofs have a higher load bearing capacity. On most of these roofs, once the gravel has been removed, extensive Green Roof system build-ups can be installed without increasing the assumed load.

The new remote sensing technology for the identification of already existing Green Roofs and potential Green Roof sites provides municipalities with the opportunity to use this data for sustainable urban planning decisions in the field of urban climate modelling, drainage system calculation and biodiversity networks.
Furthermore, this technology is carried out automatically – which is a great asset with respect to current approaches based on photointerpretation or even in situ surveys by experts – once provided with new suitable imagery, it allows easy and straightforward updates.

Partners are sought for commercial agreements with technical assistance. These can include administrative institutions, city planners with a focus on sustainable and green solutions or service providers.

Advantages and Innovations

- Cost efficiency, automated and precise mapping process
- Reliable data basis for decision-making in sustainable urban planning
- Allows for identification of most suitable areas for green roofs and a concentration of public funding in the given areas
- Enables a structured approach towards the fostering of green roofs and an adaption of cities to climate change
- Easy handling and updates

Stage of Development

Already on the market

IPR Status

Copyright

Profile Origin

National or Regional R&D programme

Keywords

Technology

01003010	Databases, Database Management, Data Mining
01004007	GIS Geographical Information Systems
10002004	Climate Change mitigation
10002006	Ecology
10002010	Remote sensing technology

Market

07004006	Garden and horticultural products
09003005	Consulting services
09007003	Distribution of building products and systems
09007004	Engineering and consulting services related to construction
09007005	Facility management companies

NACE

J.62.0.1	Computer programming activities

Network Contact

Issuing Partner

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Open for EOI : Yes

Dissemination

Send to Sector Group

Aeronautics, Space and Dual-Use Technologies

Client

Type and Size of Organisation Behind the Profile

Industry SME 50-249

Year Established

0

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English
German

Client Country

Germany

Partner Sought

Type and Role of Partner Sought

Partners from public administrations, green and sustainable urban planning and service providers are sought for commercial agreements with technical assistance. Task to be performed is the integration of the technology into existing monitoring systems. Necessary knowhow for the setup of the system will be provided by the German company.

Type of Partnership Considered

Commercial agreement with technical assistance

Attachments