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Agencia Andaluza del Conocimiento
CONSEJERÍA DE CONOCIMIENTO, INVESTIGACIÓN Y UNIVERSIDAD

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Oportunidades de Colaboración

1.-Búsquedas de socios

Temática	Referencia	Título
Tecnologías ambientales	RDES20191008001	A Spanish technological center is searching partners to complete an advisory board for a Fast Track to Innovation - Horizon 2020 project

2.- Ofertas Tecnológicas

Temática	Referencia	Título
Tecnologías ambientales	TOES20191010002	New strategies and actions for improving the impact of projects related to nature based solutions and climate change adaptation
Tecnologías ambientales	TOSG20190918001	Eco-friendly sound damping sandwich panel for electromechanical systems
Residuos	TODE20191001001	German enterprise seeks recycling enterprise as partner for co-development of digital twin based automated disassembly and sorting

3.- Demandas Tecnológicas

Temática	Referencia	Título
Residuos	TRDE20191001001	German enterprise seeks partner from the machine tool industry (e.g.robotics) to co-develop machinery for automated disassembly and sorting in the recycling process

Medio Ambiente:
Tecnologías Ambientales

Partnering Opportunity

Research & Development Request

A Spanish technological center is searching partners to complete an advisory board for a Fast Track to Innovation - Horizon 2020 project

Summary

A Spanish technological center of footwear and plastic sector is searching partners to create an advisory board for a project to be submitted to Horizon 2020, Fast Track to Innovation call. The project will develop a non-chemical solution for soil disinfection based in the use of a 100% biodegradable barrier film. The partners sought may be stakeholder organisations representing agrofood sector, plastic agriculture sector, regulatory authorities, consumers associations and civil society.

Expiration Date 16 February 2020
Reference RDES20191008001

Details

Description

The coordinator of the project is a Spanish Technological Centre of footwear and plastic sector. It carries out R&D projects, acquire legal information, regional and national funding for projects, among other activities. It is recognized as Results Transfer Office (OTRI) for the Government of Spain, belonging to the Spanish Committee of talks on Agriculture. It is involved in the Spanish Technology Platform for Sustainable Agriculture. It is a member of The Bio-Based Industries Joint Undertaking (BBI JU).

The project will develop the solution that will solve problems of current intensive/monoculture techniques. Intensive farming has important challenges to overcome: inadequate gross nutrient balance, control of soil-borne pathogens growth with an efficient, cost-competitive and sustainable disinfection method and elimination of non-recyclable agricultural plastics.

Soil pathogens are one of the main causes of economic losses in the agricultural sector. They cause serious negative effects on the crops productivity, reducing the yield and quality of agricultural production. Pathogens must be eliminated by disinfecting the soil, destroying pathogenic agents which are likely to affect the crops in a negative way. Several disinfection

techniques are available in the market, however, none of these is 100% effective and sustainable.

Chemical soil disinfection is the most popular technique because of its easy application and effectiveness. It consists in the use of chemical compounds with plastic films to avoid gases escape. These chemicals are dangerous for environment, toxic to human, and have negative effects on soil microorganisms. In this method, it is important to use a special plastic film with high barrier properties to seal and achieve a more effective disinfection. These multilayer disinfection films are very difficult to recycle or not recyclable being placed in landfills or incinerated, counteracting the efforts towards a circular economy and crude oil independency.

Other limitation in this technique is that plastic has to be removed after disinfection. As alternatives, biodegradable plastics have been developed, but these biodegrade under specific conditions which may not always be easy to find in the natural environment and can thus still cause harm ecosystems. Besides, they have high costs compared to non-renewable plastics.

This center has developed an efficient alternative in a previous project under H2020 FTIPilot: a biobased agricultural film for mulching with controlled degradation and being cost competitive which can be installed by the farmer in the same way that conventional films. The new project will use this first biobased barrier.

Although alternatives to chemical methods other non-chemical solutions have been developed, these alternatives are not sufficient. There is no intensive/monoculture agricultural mulching technique in the market that combines sustainability, competitive price and effectiveness at any season.

This project will develop a solution which will be the first agricultural technique combining disinfection and mulching in a sustainable way. This technology consists on the introduction of a plant-based material into the soil followed by the cover of the soil with a biodegradable barrier plastic film .

This project has already involved 5 partners. Partners are sought to create an Advisory Board for the project. It will be composed of stakeholder organisations representing agrofood sector, plastic agriculture sector, regulatory authorities, consumers associations and civil society. The Advisory Board will be established to consult stakeholder organisations during the preparation, revision and implementation of the proposal, exchange of thoughts and feedback and for dissemination of the proposal.

This project under development will be submitted to Fast Track to Innovation call of Horizon 2020 Programme on 22nd October 2019. The project will last 30 months.

Advantages and Innovations

The result of the project will be the first biobased sustainable disinfection method in the market as effective as chemical disinfection method and being cost competitive. It will include the first biobased barrier film with controlled biodegradation under any environment, based on the successful previous project results. It is a ground-breaking intensive/monoculture agricultural integrated solution since three aspects:

- 1) A new biological and sustainable disinfection method, with no use of chemical substances and 100% efficiency
- 2) A high barrier plastic film (low oxygen transmission rate) completely biodegradable to seal the soil and according to the farmer needs. When the farmer decides to biodegrade the film, a microorganisms solution will be added and the film will be degraded by microorganism in 45

days

3) The solution is cost competitive compared to conventional technological.

Stage of Development

Proposal under development

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Partner Sought

Type and Role of Partner Sought

The consortium has partners for the present project and is looking for new partners for the Advisory Board.

An advisory board will be created for the project composed of stakeholder organisations representing agrofood sector, plastic agriculture sector, regulatory authorities, consumers associations and civil society. The Advisory Board will be established to consult stakeholder organisations during the preparation, revision and implementation of the proposal, exchange of thoughts and feedback and for dissemination of the proposal.

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

Research cooperation agreement

Partnering Opportunity

Technology Offer

New strategies and actions for improving the impact of projects related to nature based solutions and climate change adaptation

Summary

Environmental consultancy based in Madrid (Spain) and specialized in nature-based solutions for climate change adaptation, aims to collaborate in H2020 projects leading the development and implementation of outreach strategies and actions. They look to establish a research cooperation agreement for developing outreach and dissemination strategies, in all European and third countries.

Reference TOES20191010002

Details

Description

An environmental consultancy based in Spain with four years of experience in the field of climate change adaptation through nature-based solutions (NBS), namely ecosystem restoration, is developing new transfer of knowledge and outreach strategies and actions for improving the impact of projects related to nature-based solutions and climate change adaptation.

Nature-based solutions (NBS) design and implementation is often difficult as far as actions needed usually interact with local communities' dynamics and public use. Then, awareness and social engagement are key to ensure the success of NBS projects. To deal with these issues, the SME uses participatory (citizen science) and design-thinking approaches. They are experts in knowledge- transference event organization, in which they use audience-oriented methodologies that ensure the effectiveness of participation and communication actions, at the same time it increases the impact of project results.

Moreover, the implementation of NBS commonly requires complementary information that allows decision-makers to select the best actions to take in order to enhance ecosystem services and guarantee climatic resilient environments. Thus, they co-design and develop on-line tools for decision makers, related to natural capital evaluation and environmental impact correction and compensation. These tools increase stakeholder engagement and empower companies and policymakers for taking action to reduce environmental risks derived from climate change and land degradation and transformation.

They look to establish research cooperation agreements in outreach and dissemination actions

in nature-based and climate change adaptation projects. They are an SME with a solid network of public and private clients that would serve as potential end-users for NBS, then we can provide potential clients for NBS project results. This issue is also key for their business model as far as they are and environmental consultancy that assists public and private companies to restore degraded ecosystems.

The company is looking for universities and research centers focused on ecosystem restoration, NBS and adaptation to climate change to establish research cooperation agreements in order to develop with them strategies for disseminating their results.

Advantages and Innovations

Dissemination and awareness actions in H2020 has been commonly addressed through non-audience oriented actions or just with an informative function. However, more and more European funding ask beneficiaries to assure social and environmental positive impact of project results. This cannot be achieved but with participatory processes target oriented. Thus, they provide expertise in:

- Stakeholder mapping
- Participatory strategy development and implementation
- Communication campaigns and materials
- Project results outreach and knowledge transfer

Stage of Development

Available for demonstration

IPR Status

Exclusive Rights

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Partner Sought

Type and Role of Partner Sought

The Spanish SME is looking for universities and research centers that develop research projects on ecosystem restoration, nature-based solutions and adaptation to climate change in order to develop with them strategies for disseminating their results. The type of cooperation in both cases will be research cooperation agreement.

Type and Size of Partner Sought

University,R&D Institution

Type of Partnership Considered

Research cooperation agreement

Partnering Opportunity

Technology Offer

Eco-friendly sound damping sandwich panel for electro-mechanical systems

Summary

A Singapore institute has developed a novel eco-friendly sandwich panel for cost-effective sound damping in electro-mechanical systems. The composite sandwich panel replaces traditional synthetic materials such as polyurethane foams with a mechanically stronger, injection mouldable and 3D printable structure with tunable sound, vibration, mechanical and heat absorption properties. The institute is interested in potential licensing opportunities with MNEs/SMEs of all sizes.

Reference TOSG20190918001

Details

Description

The rapid construction and development of the global built environment has led to serious noise pollution, with adverse effects on personal health, the environment, productivity and the reliability of electronic systems and other mechanical structures. As sustainable construction and development becomes an increasingly significant goal in the evaluation and promotion of the electro-mechanical systems used in buildings, manufacturing and work environments, it has become imperative to find cost-effective and environmentally friendly solutions that can help to reduce the noise pollution.

The eco-friendly sound damping sandwich panel developed by the Singapore institute is superior to traditional synthetic materials such as polyurethane foams which are toxic, feature poor mechanical strength, unable to absorb sound and control vibration at low frequencies, difficult to recycle and usually, end up in landfills. The novel composite sandwich panel is a mechanically stronger, injection mouldable and 3D printable stand-alone mechanical structure that is made out of recyclable materials and further customisable to be effective for a wide range of sound damping applications.

The sandwich panel for sound damping in electro-mechanical systems has been developed with the following characteristics:

- Multi-layered design to absorb sound and vibration at both high and low frequencies
- Injection mouldable and 3D printable layered structures

- Mechanically stand-alone structures
- Polymer resins and fillers can be used from natural materials
- Tunable sound, vibration, mechanical and heat absorption properties

The technology will find applications in commercial manufacturing industries that require sustainable, customisable and cost-effective acoustic damping and vibration control. The technology is suitable for applications such as:

- Electronic systems and/or components
- Heavy machinery
- Manufacturing factories
- Buildings, construction and renovation sites
- Food courts and hotel kitchens
- Automobiles, rail, air and sea transport vehicles

The Singapore institute seeks licensing partnerships with industrial players (MNEs/SMEs of all sizes) to commercialise this technology.

Advantages and Innovations

The advantages of the technology include:

- Flexible and modular design
- Cost-effective fabrication methodology
- Sustainable and recyclable material structures

Stage of Development

Prototype available for demonstration

IPR Status

Secret Know-how

Network Contact

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Partner Sought

Type and Role of Partner Sought

The Singapore institute seeks to partner industry players (SMEs of all sizes or MNEs) through licensing collaboration.

The partner could license the technology to further develop it into new product/service to serve the needs of its customers.

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

Medio Ambiente:

Residuos

Partnering Opportunity

Technology Offer

German enterprise seeks recycling enterprise as partner for co-development of digital twin based automated disassembly and sorting

Summary

A German company and a research organization aim to develop an automatized pre-shredder recycling process for the automotive or machinery industry in order to secure nearly 100% closed loop recycling in particular with respect to rare and valuable materials. The process requires data driven automatized dismantling and sorting machinery. The consortium looks for a research co-operation with an industrial partner interested in implementing the pre-shredder pilot process as prove of feasibility.

Reference TODE20191001001

Details

Description

A German engineering company is the worlds' leading development partner for computed aided engineering (CAE). Based in Germany and internationally represented in Austria, India, Japan and the UK, they assist customers in the business' fields transport, energy, healthcare, industry and technology.

With respect to resource efficiency, closed loop recycling management plays already today a major role. This is in particular true for highly complex technical devices, e.g. modern cars, electronical devices, machinery, domestic appliances e.g. Where data driven automatization guides development and production of goods, the recycling is still based on manual disassembling and more or less manual distribution of the parts with respect to their material classification. Classification of raw material would require additional effort in the pre-recycling process. Hence, recycling in Europe is often not cost efficient and the "waste" is shifted from Europe to low cost countries, where recycling takes place under inhumane and ecological disastrous conditions. Further, often there is no recycling of many materials like glass and plastics, and valuable rare materials are lost.

Closed loop recycling should be done with the high technical standards as usual in production. Recycling has to be reconsidered as a manner of production. In order to be cost efficient,

Ref: TODE20191001001

automatization has to be introduced in all areas of disassembling, distribution of parts and material classification. Automatization needs data. This project is to provide the digital twin for the recycling economy as a base for automatized production of the recycling fraction. The project does not aim to replace the shredder based recycling process. It will provide the base for a pre-process of automatized dismantling and sorting of goods, in order to achieve a nearly 100% yield rate of valuable materials, in particular also rare earth metals.

As usual in production, also in recycling automatization will be a key driver towards cost efficiency and quality. The introduction of an automatized pre-shredder process will change the cost benefit ratio of recycling and will establish recycling near the production site (e.g. in Europe). It will secure raw material supply to the production, it provides independence from dominant material providers with rising prices. Further, this new technical application will generate a machine tool industry manufacturing automatized dismantling and sorting machinery. Further, there is a global need for closed loop recycling.

The desired cooperation type is a research cooperation agreement or a consortia agreement in a frame of a wider European project.

The company is looking for recycling companies, which are willing to implement the pre-shredder pilot process as a field trial in order to prove the concept. The field trial should prove the feasibility to implement the process in the current operation without significant trade-offs. The economic and ecological benefit could be assessed.

Closed loop recycling is a key issue to preserve our health and living standards in the light of ecology, climate change and significant global economic and social challenges. Hence, there are several specific calls from the European Commission targeting this issue, also envisaged within the following framework programme FP9 Horizon Europe, apart from general funding instruments like 'fast track to innovation'.

Advantages and Innovations

Automatized disassembling and distribution of the parts as a cost efficient pre-process to the shredder based recycling will increase the cost benefit ratio of the recycling process and will enable a nearly 100% yield of the recyclable fraction. This applies in particular to rare and valuable material, which otherwise will be lost in the amount of steel, aluminum and other metal sheets. Further, other fractions like glass and plastics will also be sorted in advance in higher purity. The overall functionality of the automatized pre-process is a key topic for cost efficiency. In this pre-process, the individual digital twins serve as a control map and guide the automatized dismantling machinery to perform the disassembly of each individual item (e.g. car type). One key factor in the process to generate digital twins for the recycling economy is the in-house developed and registered process to derivate CAE models based on optical scans taken from technical devices. Whereas digital twins for the production are highly classified and very detailed and complex, they will never leave the production plant and will never be accessible to the public or the recycling industry. On the other hand, the requirements for the digital twins for the recycling industry should not be so complex.

In the field of production and development, Digital Twins exist, the company's method is protected and exists on the market, data driven automatized machine tools exist and standards for interfaces for data driven control exist. However, the application of the technology in the recycling industry is complete new, and the boundary conditions are different. Hence, the partner company will face a manageable amount of risk, but a huge opportunity to open a great

market, last but not least the yield of rare material will increase current revenue.

Stage of Development

Concept stage

IPR Status

Secret Know-how

Network Contact

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Partner Sought

Type and Role of Partner Sought

Type of partner sought:

industry

Specific area of activity of the partner:

recycling, in particular automotive recycling

Tasks to be performed by the partner sought:

implementation of the pre-shredder pilot process as a field trial, prove of concept, prove of feasibility, provide the base for an assessment of ecological and economic benefit.

Type and Size of Partner Sought

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

Type of Partnership Considered

Research cooperation agreement

Partnering Opportunity

Technology Request

German enterprise seeks partner from the machine tool industry (e.g. robotics) to co-develop machinery for automated disassembly and sorting in the recycling process

Summary

A German company and a research organization aim to develop an automatized pre-shredder recycling process for the automotive or machinery industry in order to secure nearly 100% closed loop recycling in particular with respect to rare and valuable materials. The process requires data driven automatized dismantling and sorting machinery. The consortium is looking for a manufacturer of machinery or an institute as research partner providing the technology of dismantling and sorting machinery.

Reference TRDE20191001001

Details

Description

With respect to resource efficiency, closed loop recycling management plays already today a major role. This is in particular true for highly complex technical devices, e.g. modern cars, electronical devices, machinery, domestic appliances e.g. Where data driven automatization guides development and production of goods, the recycling is still based on manual disassembling and more or less manual distribution of the parts with respect to their material classification. Classification of rare material would require additional effort in the pre-recycling process. Today, recycling in Europe is often not cost efficient and the 'waste' is shifted from Europe to low cost countries, where recycling takes place under inhumane and ecological disastrous conditions. Further, often there is no recycling of many materials like glass and plastics, and valuable rare materials are lost.

Closed loop recycling should be done with the high technical standards as usual in production. Recycling has to be reconsidered as a manner of production of valuable material. In order to be cost efficient, automatization has to be introduced in all areas of disassembling, distribution of parts and material classification. Automatization needs data. This project is to provide the digital

twin for the recycling economy as a base for automatized production of the recycling fraction and has been initiated by a German company that is highly specialized in the field of CAE (Computer-aided engineering) and software based methods and processes.

The project does not aim to replace the shredder based recycling process. It will provide the base for a pre-process of automatized dismantling and sorting of goods, in order to achieve a nearly 100% yield rate of valuable materials, in particular also rare earth metals.

As usual in production, also in recycling automatization will be a key driver towards cost efficiency and quality. The overall functionality of the automatized pre-process is a key topic for cost efficiency. In this pre-process, the individual digital twins serve as a control map and guide the automatized dismantling machinery to perform the disassembly of each individual item (e.g. car type).

One key factor in the process to generate digital twins for the recycling economy is the company's in-house developed process to derivate CAE models based on optical scans taken from technical devices. Whereas digital twins for the production are highly classified and very detailed and complex, they will never leave the production plant and will never be accessible to the public or the recycling industry. On the other hand, the requirements for the digital twins for the recycling industry should not be so complex.

In the field of production and development, Digital Twins exist, the company's method is protected and exists on the market, data driven automatized machine tools exist and standards for interfaces for data driven control exist. However, the application of the technology in the recycling industry is completely new, and the boundary conditions are different. Hence, the partner company will face a manageable amount of risk, but a huge opportunity to open a great market.

The company looks for a research co-operation with a partner who can develop the automatized dismantling and sorting machinery controlled via interface by the digital twin of the good being dismantled. The partner could either be from industry or an institute for applied research.

Closed loop recycling is a key issue to preserve our health and living standards in the light of ecology, climate change and significant global economic and social challenges. Hence, there are several specific calls from the European Commission targeting this issue, also envisaged within the following framework programme FP9 Horizon Europe, apart from general funding instruments like 'fast track to innovation'.

In this connection the company might also be interested to apply for European funding.

Technical Specification or Expertise Sought

Suitable machinery could involve robotics. Important is the interface, which allows data drive control via the Digital Twin of the object to be dismantled. Often, the data format is .stl, which is suitable in this case.

The aim is a prototype of an automatized dismantling and sorting machinery, to be integrated as field trial in the recycling process, as a pre-process to the shredder stage.

Stage of Development

Concept stage

IPR Status

Secret Know-how

Network Contact

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Partner Sought

Type and Role of Partner Sought

Type of partner sought:
manufacturer of machine tools and/or robotics or applied research institute to develop a prototype

Tasks to be performed by the partner sought:
The required partner should develop the automatized dismantling and sorting machinery controlled via interface by the digital twin of the good being dismantled.

Type of Partnership Considered

Research cooperation agreement