Research & Development Request

H2020-MSCA-RISE-2016. Medical imaging agents based on gadolinium - manufacturer SME is being sought for a staff exchange proposal.

Summary

A Spanish university is willing to submit a H2020-MSCA-RISE (staff exchange) project proposal. The aim of the project is to develop and validate an efficient and cost-effective process to remove several pollutants from water bodies. The consortium is almost closed and they are looking for an SME (non-Spanish) manufacturer of medical imaging agents and pharmaceuticals.

Creation Date	20 January 2016
Last Update	21 January 2016
Expiration Date	21 January 2017
Reference	RDES20160120001

Details

Description

Several research groups have evidenced the presence of a wide range of Environmental Pharmaceutical Persistent Pollutants (EPPPs) in different water bodies (drinking water, groundwater, surface water, and effluent wastewater) at concentrations up to µg/L level. Some of these EPPPs are characterized by their environmental persistence such as cytostatic drugs used in chemotherapy or gadolinium chelates as contrast agents (Gd-CA) employed in magnetic resonance imaging (MRI).

Actual technologies for the removal and degradation of these compounds, including electrochemical, photochemical, and biological methods have been developed. However, these methods are expensive and sometimes inefficient for the complete removal or even the recovery of some value from the treated water (e.g. Gadolinium). Therefore, there is a need for developing an efficient and cost-effective process that is capable of treating large volumes of waters containing low concentration of these pollutants.

PHARMACLEAN aims at the design, development and validation of an integrated process including novel nanofiber based nanocomposite materials for an effective degradation of persistent pollutants as well as the recovery of raw materials from contaminated water streams in a continuous operation mode. PHARMACLEAN will employ novel nanocomposites fibrous membranes (NFM) to set up efficient separation processes allowing the treatment of different polluted water streams and a complementary Advanced Oxidation Process through e.g., “clean Fenton process” by using a wasteless heterogeneous catalyst.
The suggested approach offers versatile, fast, highly efficient, and low-cost treatment for wastewaters, as well as the recovery of raw materials (e.g. Gadolinium among other potential metals). In this sense, PHARMACLEAN involve the cooperation between industry and

academia of partners from Europe and Cuba to perform the required R&D to demonstrate the technical and economic feasibility of the developed process, including the technical formation of specialist as a fundamental activity to project success. PHARMACLEAN foresees meaningful knowledge and technology transfer from the academia to the industrial sector, through the partners' well-established reputation as transfer hubs.

The SME (non-Spanish) sought should be involved on the co-development of the methodology and test the technology proposed above.

Call: H2020-MSCA-RISE-2016. Research and Innovation Staff Exchange
Call deadline: 28/04/16
EoIs deadline: 01/04/16

Stage of Development

Under development/lab tested

Keywords

Technology

10003004	Recycling, Recovery
10003009	Rare Earths Metals Treatment
10004001	Industrial Water Treatment
10004003	Wastewater Recycling
10004006	Sludge Treatment / Disposal

Market

05002001	X-rays
05002003	Ultrasound imaging
05002005	Other medical imaging
08004002	Chemical and solid material recycling
08004003	Water treatment equipment and waste disposal systems

NACE

C.21.2.0	Manufacture of pharmaceutical preparations
C.32.5.0	Manufacture of medical and dental instruments and supplies
E.36.0.0	Water collection, treatment and supply
E.38.2.1	Treatment and disposal of non-hazardous waste
E.39.0.0	Remediation activities and other waste management services

Network Contact

Issuing Partner

FUNDACION PARA EL CONOCIMIENTO MADRIMASD

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Open for EOI : Yes

Client

Type and Size of Organisation Behind the Profile

University

Year Established

0

Already Engaged in Trans-National Cooperation

Yes

Experience Comments

An experienced institution on laboratory and corresponding scale up process of water treatment technologies and recovery of metals. Relevant background on technology transfer and spin-off creations. The university is an experienced coordinator of several FP5-7 and on-going H2020 projects, including IRSES and RISE projects.

Languages Spoken

English
Spanish

Client Country

Spain

Partner Sought

Type and Role of Partner Sought

European (non-Spanish) company dedicated to the manufacturing of medical imaging agents and pharmaceuticals used to allow diagnosis and monitoring of diseases to improve diagnostic and procedure monitoring for various pathologies, e.g. those based on gadolinium.

Tasks to be performed:
• Selection of Gadolinium drugs pollutants to be monitored

• Co-development of a methodology to determine selected EPPPs and their metabolites in water solutions at trace levels including suspended matter at nanosize level
• Characterization of the fabricated products
• Application of developed methods to follow up the efficiency of treatment processes studied in the project.
• Test of developed integrated technology for the recovery of Gadolinium and environmental pollution monitoring and physicochemical characterization of pharmaceutical effluents and groundwater through state-of-the-art analytical equipment.
• Participation in outreach activities

Type and Size of Partner Sought

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

Type of Partnership Considered

Research cooperation agreement