iMETland: A new generation of Microbial Electrochemical Wetland for effective decentralized wastewater treatment

Fact Sheet

Project Information

iMETland
Grant agreement ID: 642190

Funded under
H2020-EU.3.5.4.

Overall budget
€ 3 461 622,50

EU contribution
€ 2 924 810,25

Coordinated by
FUNDACION IMDEA AGUA
Spain

This project is featured in...

RESULTS PACK

13 January 2020

Water innovation: Technological solutions for ensuring Europe’s present and future water security

Objective
iMETland project aims to construct and validate a full-scale application of an eco-friendly device to treat urban wastewater from small communities at zero-energy operation cost. Our concept comes from the integration of Microbial Electrochemical Technologies (MET) with the biofilters used in constructed wetlands. iMETland outperforms classical biofilters from constructed wetlands by using electroactive bacteria in combination with an innovative electroconductive material to achieve depuration rates that are 10-fold higher than classical techniques. On top of that, the low biomass yield generated under electrogenic conditions avoids any bed colmatation. Wastewater will be also converted into pathogen-free water suitable for irrigation by using an electro-oxidative methodology. Furthermore, the unique conversion of sewage treatment into electric current by electricity-producing bacteria makes such a process an internal reporter of the biological depuration process. So thus, it can be used as output signal to control the process and can easily inform the operator through ICT tools, converting the depuration in an interactive process between device and a smart-phone in end-user’s hands.

iMETland try to fill the gap that was sharply identified by the programme topic: WATER-1-2014/2015: Bridging the gap: from innovative water solutions to market replication. Our solution has already passed both research and pilot scale and is ready to try a full-scale demonstration to accelerate the market uptake. The multidisciplinary nature of iMETland makes it to fit well with the “water and wastewater treatment priority of the EIP-water. Moreover, the coordinator of iMETland consortium is also the Technical Manager of a recent ACTION GROUP at EIP-WATER called “MEET-ME4WATER, Meeting Microbial Electrochemistry for Water”. This AG focuses on overcoming the barriers to scaling up and demonstrate microbial electrochemical technologies (METs) and bring them faster to the market.

Field of science
/social sciences/economics and business/business and management/commerce
/natural sciences/chemical sciences/electrochemistry
/engineering and technology/environmental engineering/water management/irrigation
/agricultural sciences/agricultural biotechnology/biomass

Programme(s)

Topic(s)

Call for proposal
H2020-WATER-2014-two-stage

Funding Scheme
IA - Innovation action

Coordinator

FUNDACION IMDEA AGUA

Address
Avenida Punto Com N2
28805 Alcala De Henares
Madrid
Spain

Activity type
Research Organisations

EU contribution
€ 702 500

Website

Contact the organisation

Participants (10)

AQUA-CONSULT INGENIEROS, S.L.

Spain

EU contribution
€ 181 737,50

Address
Calle Marques De Ahumada
11
28028 Madrid

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Contact the organisation

FUNDACION PUBLICA ANDALUZA CENTRODE LAS NUEVAS TECNOLOGIAS DEL AGUA

Spain

EU contribution
€ 413 250

Address
Autovia Sevilla Huelva (A49) Km28

Activity type
Research Organisations

Website

Contact the organisation
ASTON UNIVERSITY
United Kingdom
EU contribution
€ 295 315
Address
Aston Triangle
B4 7ET Birmingham
Activity type
Higher or Secondary Education Establishments
Website
Contact the organisation

KILIAN WATER APS
Denmark
EU contribution
€ 173 570,25
Address
Torupvej 4
8654 Bryrup
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Website
Contact the organisation

PRICEWATERHOUSECOOPERS ASESORES DENEGOCIOS SL
Spain
EU contribution
€ 195 387,50
Address
Paseo De La Castellana 259 B
28046 Madrid
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Website
Contact the organisation

INSTITUTO DE INVESTIGACIONES EN CIENCIA Y TECNOLOGIA DE MATERIALES
Argentina
EU contribution
€ 272 175
Address
Juan B Justo 4302
7600 Mar Del Plata
Activity type
Research Organisations
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<td>C/ Escritor Antonio Ramos 20 29013 Malaga</td>
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