

AFTERLIFE

Advanced Filtration TEchnologies for the Recovery and Later conversion of relevant Fractions from wastEwater

Summary

The AFTERLIFE project proposes a flexible, cost- and resource-efficient process for recovering and valorising the relevant fractions from wastewater. It will represent an advance on existing approaches to wastewater treatment, which rely on physico-chemical and biological methods.

The AFTERLIFE process will separate out the different components of value using a series of membrane filtration units that will separate all the solids in the wastewater. These will then be treated to obtain high-pure extracts and metabolites or, alternatively, to be converted into value-added biopolymers; polyhydroxyalkanoates (PHAs).

In addition to the value extracted from the solids, the remaining outflow of the water will be ultrapure and ready for re-use.

Objectives

The overarching objective of the AFTERLIFE project is to demonstrate, at TRL-5, an innovative wastewater treatment that simultaneously recovers compounds of interest while converting the remaining organic matter into a high-volume added value biopolymer. Specifically, it sets out to:

- Develop the filtration system for recovering suspended and soluble solids in wastewater by using membrane filtration units.
- Develop the process for recovering and purifying valuable compounds in the concentrates extracted in the filtration step.
- Develop an anaerobic/aerobic process for converting the low value-added organic matter into PHAs.
- Optimise the resources in the process, following a circular economy approach
- Design and optimise the AFTERLIFE process from a holistic perspective following a Multidisciplinary Design Optimisation (MDO) approach
- Conduct a demonstration, at a pilot scale, using real industrial wastewater to generate the end products

AFTERLIFE

<http://www.afterlife-project.eu>

Type of Action:

Research & Innovation Action

Value Chain: VC4 – organic waste

Start date: 01 September 2017

End date: 31 August 2021

BBI JU contribution: € 3,890,593.13

Expected impacts

The AFTERLIFE project aims to deliver a substantial positive impact in the progress of wastewater treatment technologies and relevant fractions recovery. Specifically, it will:

- Validate that AFTERLIFE provides recovery rates that are comparable to, or better than, those of competing technologies.
- Successfully recycle or reuse at least 10 percent, in dry weight, of the suspended solid fractions.
- Create a new cross-sectorial interconnection in bio-based economy clusters.
- Create cooperation projects through cross-industry clusters
- Set the foundations for at least one new bio-based value chain and one new bio-based material.
- Lead to 30 new consumer products by 2020.
- Attract broad participation from SMES.

• Promote the economic and industrial feasibility for AFTERLIFE process along

Solution for waste water in bioplastics and food additives

with a comprehensive Lifecycle Analysis (LCA) and cost assessment.

24 April 2019

• Promote exploitation of the project's

BBI JU-funded project AFTERLIFE is developing a technology that filters, treats and converts waste water from the food and drink industry into bioplastics and food additives. [Read more](#)

Recovery and valorisation of wastewater fractions for a circular economy

27 July 2018

AFTERLIFE proposes a tangential (cross-flow) membrane filtration for wastewater pre-treatment to remove large size solids, coarse grains and fatty emulsions for the recovery of useful substrates for bio-energy generation. [Read more](#)

Project coordination

- Optimización orientada a la sostenibilidad SL (Spain)
- Austep-Austeam Environmental Protection Spa (Italy)
- Bio Base Europe Pilot Plant vzw (Belgium)
- CELABOR scrll (Belgium)
- L'Urederra Fundación para el Desarrollo Tecnológico y Social (Spain)
- Mi-Plast d.o.o. (Croatia)
- nova-Institut für politische und ökologische Innovation GmbH (Germany)
- Teknologian tutkimuskeskus VTT Oy (Finland)
- Agencia Estatal Consejo Superior de Investigaciones Científicas - CSIC (Spain)
- Asociación Empresarial de Investigación Centro Tecnológico Nacional de la Conserva (Spain)
- NOVA ID FCT - Associação para a Inovação e Desenvolvimento da FCT (Portugal)
- Jake SA (Spain)
- Héritage 1466 (Belgium)
- Citromil SL (Spain)

Organisation name: Optimización orientada a la sostenibilidad SL (Spain)

Former members

- Eggplant Srl (Italy)