



# H2020 MIDES PROJECT



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microbial  
desalination  
for low energy  
drinking water

## Microbial desalination for low energy drinking water

### Project Description

The aim of the MIDES project (microbial desalination for low energy drinking water) is to develop a unique and innovative system with which to obtain drinking water through advanced, low energy desalination processes. MIDES is the result of years of collaboration on Spanish projects under the Innpronta programme with IMDEA (Madrid Institute for Advanced Studies) and Letitat Technological Centres on the IISIS (Sustainable Islands) and Itaca projects, respectively.

The desalination system will receive its energy supply from wastewater treatment, using equally innovative technology: the microbial fuel cell. In this biological reactor, bacteria use the organic matter in wastewater to produce electricity that, in turn, allows for salt migration through selective membranes. As such, advanced materials (nanostructured electrodes, ceramic and ionic exchange membranes) that help to convert current treatment processes

into a strategy for energy recovery from wastewater and desalination will be developed.

The validation process will be carried out under real operational conditions and, therefore, advanced analysis, simulation, automation and control systems will need to be developed. The new technology is expected to be implemented on a global scale, as it will be assessed on three continents (Spain/Europe, Tunisia/Africa and Chile/America).

The results of the project will open the doors to a new market for low cost desalination in low- to medium-capacity decentralised plants, which will simultaneously purify wastewater with a positive energy balance.

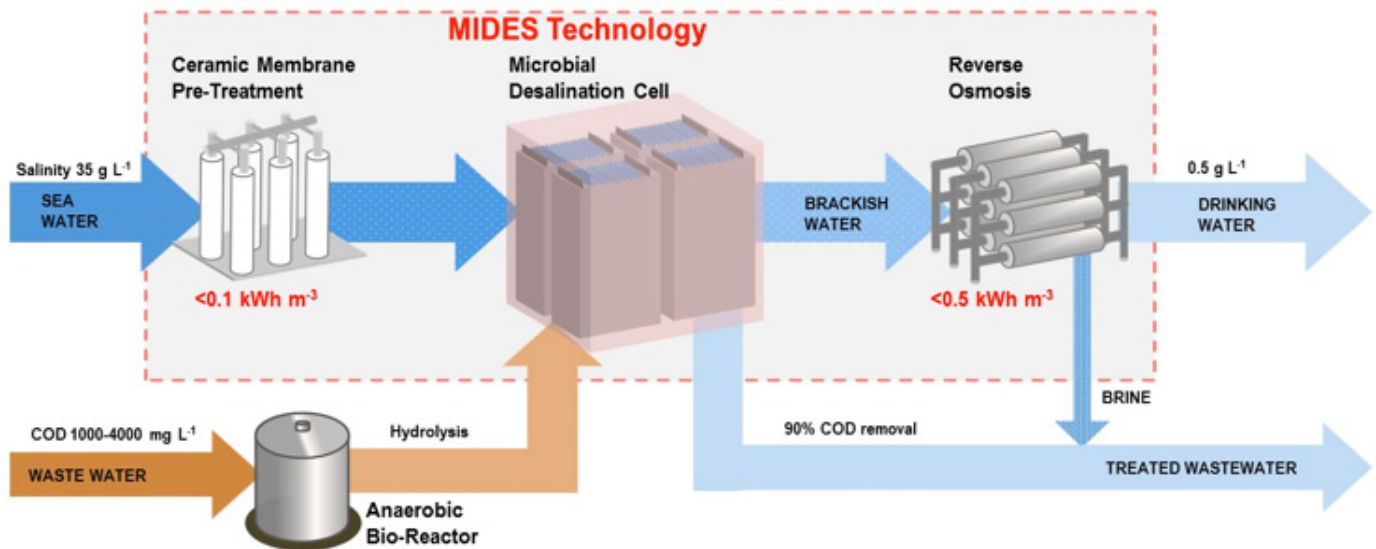
The combination of these systems will mark a relevant milestone towards the conception of cities in the future, equipping them with comprehensive wastewater treatment plants that generate electricity and desalinate within intelligent management and control systems.



**Location:** 1<sup>st</sup> stage: Denia (Alicante) 2<sup>nd</sup> stage planned: Tunisia, Chile

**Duration:** From the 1<sup>st</sup> of April 2016 to the 31<sup>st</sup> of March 2020

**Total Budget in Euro:** 8,069,593.57 € **Aqualia:** 2,620,271.46 €



### PROJECT PARTICIPANTS

- FCC AQUALIA (Coordinator),
- FUJIFILM
- IMDEA
- SGL CARBON
- LEITAT
- MIKROLIN HUNGARY
- ONCONTROL TECHNOLOGIES
- SIMTECH SIMULATION TECHNOLOGY
- UNESCO-IHE
- UNIVERSIDAD DE GABÈS



### DETAILS OF FUNDING

**Funding:** H2020 Framework Programme for Research and Innovation.

**Organism:** European Commission (EC).

**Project:** Grant agreement n° 685793.

**Grant:** Subsidy of 70% of budget.

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**Funding Received**  
**Total Budget in euro:** 6,328,164.13 €  
**Aqualia:** 1,834,190.02 €