FRESH WATER NET

BIO east

Clustering Event Fresh Water Related project
19th March

NIAGARA

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BIO EAST HUB EN

FRESHWATER BASED BIOECONOMY

FRESH WATER NET

PROJECT INTRODUCTION IN A NUTSHELL

Project Objective:

- To demonstrate our solutions at pilot level (TRL5), and their combined use in an innovative IEDS-UV/TiO2 tandem, for ensuring their safety towards human health, and their sustainability from early stages, establishing Safety and Sustainability -by-design criteria for all of them.

Key Exploitable Outcomes:

- To develop a highly-accurate, cost-effective, fast, hydraulic model based on Smooth Particle Hydrodynamics (SPH) using the quantifications from our BWP (S.O.1) to predict the spread of pollutants and (UR)DBPs in real time in a pilot demonstrator (TRL5) of the drinking water distribution network (DWDN) in the city of Valencia (Spain), incorporating a multiagent model to elucidate human exposure data for risk management.

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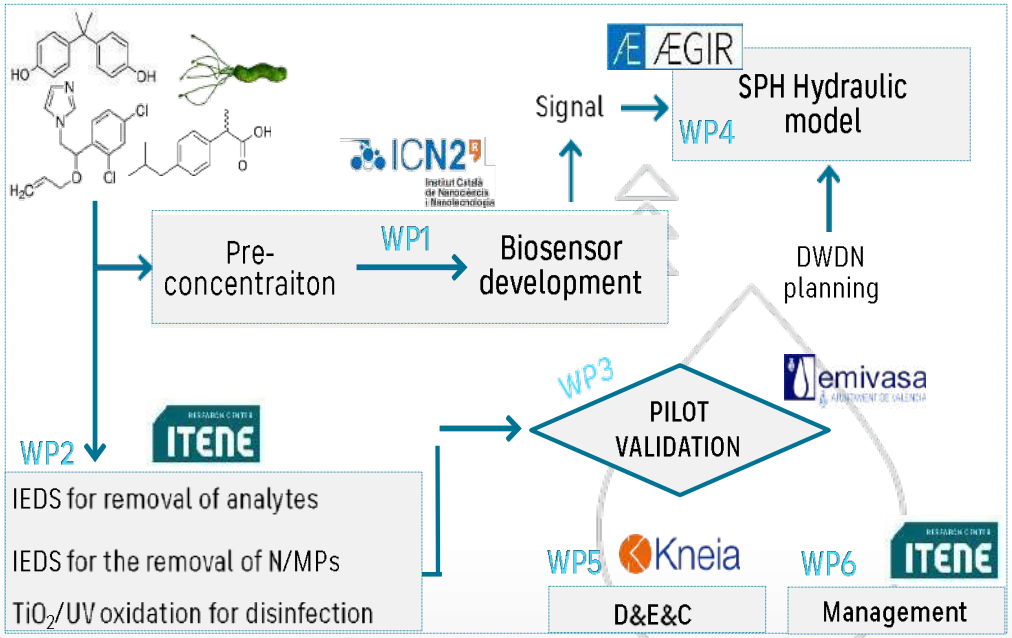

1.Water Energy Food System nexus
2.Circular Economy and Bioeconomy and Water nexus
3.Digitalization and Water

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GOOD PRACTICE 2 SHARE

- **Real-time monitoring.** NIAGARA will develop multi-analyte **biosensors** capable of simultaneously quantifying up to 4 contaminants of high concern of very different chemical nature
- **Remediation.** A **removal and disinfection** system based on a tandem of two IEDS (immobilised enzyme degradation systems) **biofilters** and a UV/TiO2 **photoreactor**. Achieve a **total removal** of the 4 analytes, and **a total** Organic Carbon removal of >70%, exceeding the current state of the art. The DBPs (Disinfection By-Products) formed will be identified and their **mechanisms of occurrence and toxicity will be predicted**.
- A **fast and cost-effective method** for real-time monitoring of the spread of these 4 pollutants using a **hydraulic model that exceeds the performance of current methods** (seconds vs. weeks, accuracy > 60%).
- These solutions will be validated up to a **pilot scale** in a **case study in the city of Valencia**, in a DWTP, and using the **drinking water supply system** of district #9 (Jesus), with the participation of the **Municipal Drinking Water Company**, and complying with **safety and sustainability by design**.
- Replicability outside EU

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GOOD PRACTICE 2 SHARE (2)

WE ARE LOOKING FOR

Stay tuned for the Web & Social Media coming

& results of the system

Website: https://www.niagara-project.eu/
LinkedIN: https://www.linkedin.com/company/niagara-project-eu
Twitter/X: https://twitter.com/NIAGARA_EU

Contact: Perouli.anastasia10@gmail.com
(Clustering with other projects)

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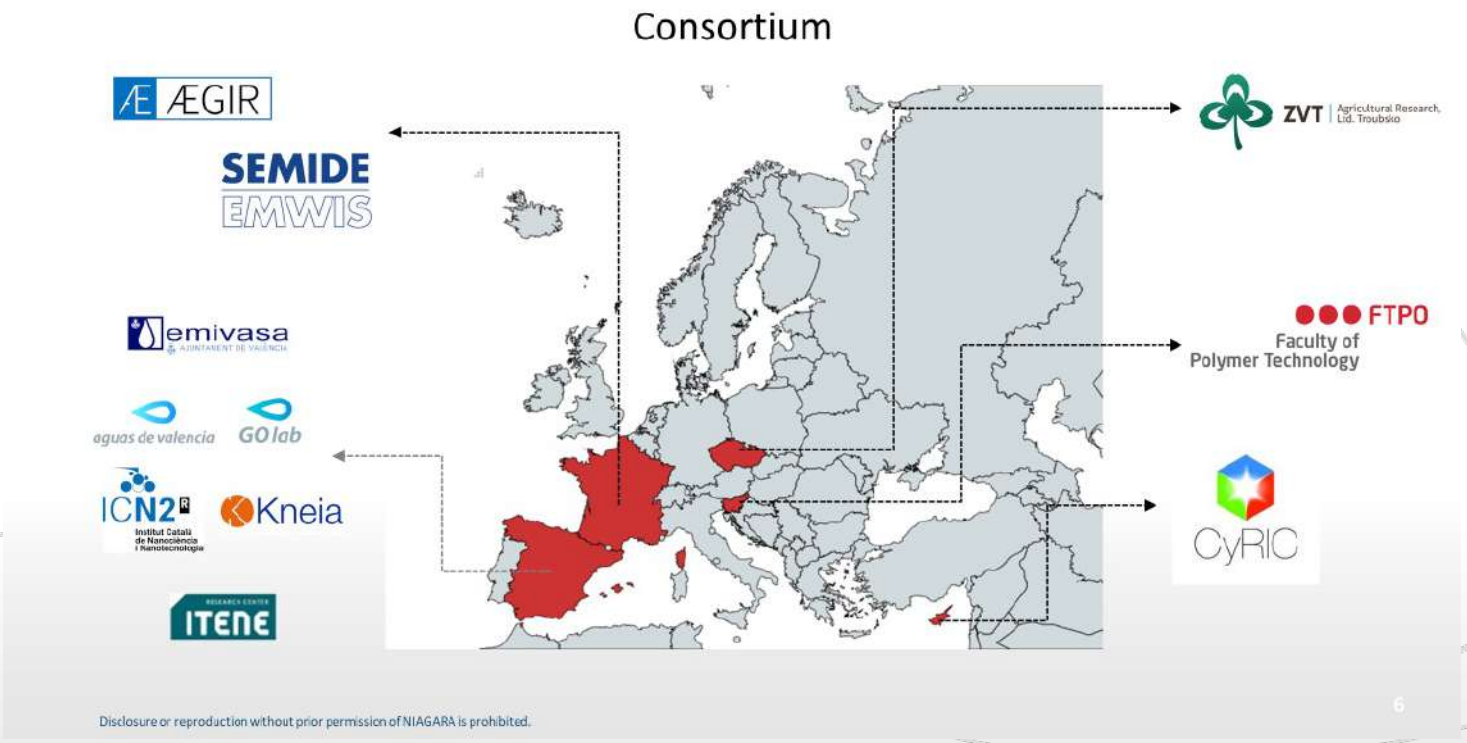
NIAGARA PARTNERS



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Thank you for your attention

Contact Details

Web page l social networks

Logo of your organisation

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