

SusChem 2017 Brokerage Event

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High efficiency and full controlled deep shaft biological reactor for a urban, rural and industrial wastewater treatment plans in India (DEEPWATER).

AIMPLA's capabilities.

- **AIMPLAS, Plastics Technology Centre, Valencia (Spain), is a private, non-profit Association** with more than 500 associated companies created in 1990. AIMPLAS is formed by +125 highly skilled professionals.
- AIMPLAS has **state-of-the-art 8500 m² facilities**, including thermoplastics and thermoset pilot plants, analysis, polymer and nanoparticles synthesis and testing laboratories (physical-mechanical, chemical, packaging, automotive and construction) and training areas.
- AIMPLAS has a **broad expertise** in the fields of petrol based plastic/composites, nanocomposites, high performance coatings, 3D printing, printed electronics, biopolymers and renewable source materials, etc...
- AIMPLAS has participated in **>100 projects** in FP5, FP6, FP7, LIFE+, CIP-EcoInnov., SUDOE, H2020... **EU Programmes**, coordinating 40% of them.
- **What AIMPLAS could offer?** Global expertise across the whole plastics/materials value chain:



Twenty H2020 projects (coordinating 9).

AIMPLAS: H2020 PROJECTS

TRL3



TRL4

RIA projects
(BBI, GV, NMBP,
LCE & BIOTEC)



TRL5

TRL5

IA Demo projects
(BBI, NMBP,
SPIRE & WASTE)



TRL6

TRL7

TRL6

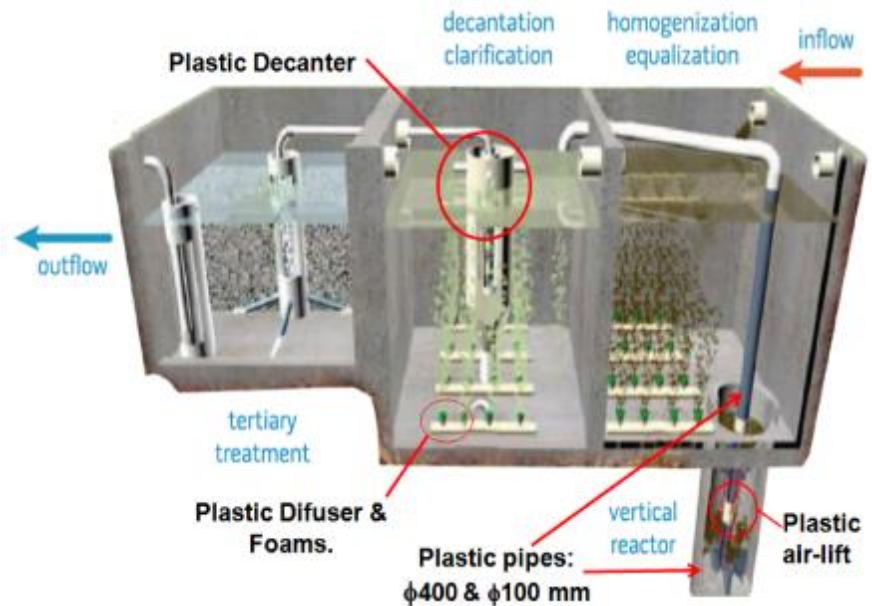
TRL7

TRL8

SME Instruments
& FTI



A valid alternative solution to current conventional wastewater technologies is the **Deep Shaft Biological Reactor technology (DSBR)**. The technology is a high-profit low-cost secondary & tertiary wastewater treatment solution with biological nutrients removal



- **DEEPWATER** aims to significantly enhance the current design and control of DSBR model, turning it into a tailor-made solution, suitable for the special needs and conditions of India and neighbour countries.

Main Project innovations

- **DEEPWATER** proposes the design, implementation and validation a 100% remote-controlled easy-to-use DSBR facilities by means of a self-assessment control system, based on innovative sensors that collect live data at every stage of the cleansing process, providing a real-time monitored and controlled WWTP model through a computational fluid dynamics model, maximizing its performance while minimizing the associated costs and risks. **DEEPWATER** solutions will be easily replicable.
- Additional innovations such as antifouling pipes, design of high performance air-diffusers, foams with controlled bubble formation, etc. are also proposed to be made in conventional plastic materials, minimizing current DSBR's OPEX, without increase the CAPEX.
- DEEPWATER also proposes testing and assessing several primary and refining technologies (solar based disinfection solutions assisted by online virus & bacteria monitoring) to be combined with the improved DSBR technology, offering versatile, safe and economic wastewater on-site solutions, suitable for urban, rural, industrial areas and it will be also suitable for recovery sensitive areas such as wetlands, lagoons and lakes.

EXISTING PROJECT CONSORTIUM/ or LOOKING FOR PARTNERS

Num	Participant name	Country	Role in the project
1. RTO.	AIMPLAS	Spain	Antifouling. Plastic Foams. Plastic parts design. Low cost plastic reactor for solar disinfection.
2-3. SME	YKUA & Analysis	Spain	Redesign and implementation of the DSBR systems. Parameters calculation. Software development. Process simulation.
3. SME	VISUM	Ireland	Integrated sensors for multi-parameter measurements under extreme conditions.
4-7. RTO/ SME /IND	Required partners	Europe	Innovative primary & disinfection treatments to be integrated in the DSBR.
8. IND	Required partners	India	Geologist: evaluate the suitable places for drilling.
9-15. RTO/SME/ IND	Required partners	India	Complementary European partners. Wastewater treatment plants, NGO, Governmental organisms, others.

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