



This project is co-financed by the
European Union and the Republic of Turkey
Bu proje Avrupa Birliđi ve Türkiye Cumhuriyeti tarafından
finanse edilmektedir

Pila Villanueva

AIMPLAS

pwillanueva@aimplas.es



Description of the Organization

- AIMPLAS is a non-profit Research Centre. Technological Institute of Plastics (Spain).
- + 750 associated companies. +200 highly skilled professionals and 30 years expertise
- Technological research and development on thermoplastic and thermosetting materials from TLR3 to TRL8. Synthesis of breakthrough materials from TRL1 to TRL3.
- Since year 2000, AIMPLAS has participated in more than 120 EC funded projects (FP5, FP6, FP7, LIFE+, EcoInnov, EUREKA & H2020), among others, coordinating several of them (~40%).
- AIMPLAS has state-of-the-art +10,000 m² facilities, including thermoplastics & thermoset pilot plants, coatings, synthesis, clean rooms and testing laboratories and training areas.
- Global expertise in the whole plastics/materials value chain:



Description of your research interest

AIMPLAS has a broad expertise in the fields of:

- Recycling
- Plastic blends, new compounds formulations
- Reactive extrusion, synthesis and processing of biopolymers and renewable source materials
- Special assisted processing technologies (microwaves, supercritical CO₂)
- CO₂ capture and conversion systems
- Catalyst development
- Plastronics
- Materials & technologies for additive Manufacturing
- High performance coatings
- Polymer nanocomposites, functionalization of nanoparticles,
- Multilayer structures
- Development of plastic products

Project Idea

HORIZON-MISS-2021-OCEAN-03-01: Mediterranean sea basin lighthouse - actions to prevent, minimise and remediate litter and plastic pollution

- *Upstream prevention of litter, plastic and microplastic generation by design.*
- *Substitutes or alternative less polluting substances and materials (especially alternatives to plastics and microplastics) for the most prevalent litter found in freshwater and at sea.*
- *Circular design of fishing gear, including improved reparability and durability (while improving selectivity to reduce discard of bycatches and improved energy efficiency) in close cooperation with the business community in the respective industrial ecosystems.*
- *Solutions for identifying, tracking and recovery of accidental loss of containers and fishing gear.*
- *Efficient collection (incl. in ports and coastal areas), sorting, recycling and re-use of waste, waste water treatment and adequate port reception facilities.*

AIMPLAS contribution to the topic

AIMPLAS has considerable experience in the recovery of marine litter with equipment used in more conventional material recycling processes.

1. **Sorting**: Separation using NIR (with more than 85% of the material correctly processed and separated).
2. **Upcycling**: Increased properties using additivation. Revalorization
3. **Design of formulations for different applications**: Possibility of incorporating recycled material from another waste stream to obtain a 100% recycled final product.



Sorting



Grinding



Separation and washing



Upcycling.

AIMPLAS contribution to the topic

Other supporting actions from AIMPLAS:

4. **Characterization** of different waste streams. Identification of type of plastics and identification of microplastics in water.

5. **Manufacturing final products** (demonstration) valuable for the market. Use of AIMPLAS pilot plants and collaboration with European industry.

6. **Support in legislation.**

7. Formulation of plastic components with higher resistance & durability (higher resistance to sea water environments).

We are also collaborating with other partners in:

- Introduction of markers in new recycled products.
- Geolocalization tool for detection of lost items in the ocean.
- Floating systems to recovery of accidental loss of containers and fishing gear



AIMPLAS demonstrators previous Projects marine litter



Textiles: leggings



Composter



Plant pot



Urban furniture

Needs in the field of collection marine litter

Partners to work on the design of robots for waste collection on sea bottom



This project is co-financed by the
European Union and the Republic of Turkey

Bu proje Avrupa Birliđi ve Türkiye Cumhuriyeti tarafından
finanse edilmektedir

Pilar Villanueva

AIMPLAS

R&D Department

Spain

pvillanueva@aimplas.es

www.aimplas.net