



TECHNOLOGY CENTER

UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

[BLUE ECONOMY]

RESEARCH, DEVELOPMENT & INNOVATION AT THE UNIVERSITAT POLITÀCNICA DE CATALUNYA (UPC)

The Universitat Politècnica de Catalunya (UPC) specializes in the areas of architecture, science and engineering, including Blue Economy technologies. In this field, the main focus areas are:

- Marine Living Resources
- Ocean Energy
- Marine Non-living Resources
- The Blue Bioeconomy & Biotechnology
- Shipbuilding and Repair
- Maritime Transport
- Infrastructure
- Port Activities
- Coastal Tourism

As a result of the UPC's recognized research track record in its areas of specialization, we can offer a wide range of services:

- R&D technology transfer projects
- Consortium for national and Horizon Europe projects
- Patents
- Technology assessment
- Specialized facilities

The UPC is the leading university in Spain in volume of research and technology transfer to companies, and has become one of the major hubs of knowledge in Southern Europe.

MARINE LIVING RESOURCES

- Prediction of hydro-morphodynamic and ecological evolution.
- Management of coastal bays.
- Monitoring of estuaries.
- Use of meteo-oceanographic conditions.
- Automatic learning. Modelling and display of marine agriculture data.
- Integrated multi-trophic aquaculture (MTA) techniques.
- Analysis and effect of meteorological and seasonal variables on the breeding system.
- Systematic studies of localization and monitoring of marine species to understand their behaviour.
- Measure of surface circulation forced by waves breaking. Monitoring habitat degradation.

MARITIME TRANSPORT

- Energy saving, reduction of contamination and improvement in management of energy quality and emissions.



SHIPBUILDING AND REPAIR

- Manufacture of vessels. Efficient, digitalized, automated and modular production of boats.
- Integration of the industrial internet of things (IIoT).

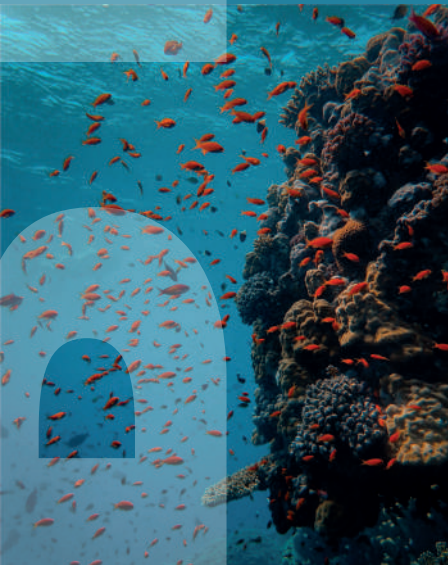
OCEAN ENERGY

- Tidal power, wave power, offshore wind power, ocean thermal energy conversion, energy from currents and blue energy or salinity gradient energy.
- Control of wind turbines and electricity substations and numerical modelling to take advantage of wave energy.



INFRASTRUCTURE

- Addressing the negative impact of coastal construction on biodiversity.
- Reduction of the acoustic impact and vibrations from these constructions.
- Establishment of standards for terminology and methodology.



MARINE NON-LIVING RESOURCES

- Supply of critical raw materials.
- Improvement in underwater capture equipment (collectors).
- Seawater processing techniques and desalination.

PORT ACTIVITIES

- Studies of the traffic of boats in ports and air quality, using data from the automatic identification system (AIS) during manoeuvres.
- Production and maintenance of shipyards.



THE BLUE BIOECONOMY & BIOTECHNOLOGY

- Studies of natural pressures on the sea and those derived from humans.
- Development of a European system for ocean observation.
- Estimations of the amount of plastic floating on the surface of the ocean.
- Comprehensive modelling to trace the movement of plastic over the ocean.



COASTAL TOURISM

- Improvement in coverage in time and space, and in the resolution and quality of marine observations.
- Water management with innovative systems to manage reserves and the planning of trips.

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