ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

BLUE BIOTECH FOR MARINE ENVIRONMENT

Applying molecular biology and biochemical methods to marine organisms. Using enzyme and green chemistry processes to convert marine bio-wastes and pollution materials into products.

The University of Bologna can offer multidisciplinary skills and expertise for research, applied studies and technology transfer in the field.

Research at the University of Bologna covers a wide range of issues:

- New exploitation possibilities of marine resources through biotechnological routes aimed at obtaining high-value molecules or composites (i.e. for medical, food, cosmetic applications), thus enacting the "sustainable bio-refinery" concept
- Use of different micro-, meso- and micro-organisms and enzymes for the treatment of natural and man-made (i.e. wasters and by-products) substrates, as much as their use for bioremediation actions
- Mechanisms of calcification processes in marine organisms
- Advanced functional materials from mariculture bio-wastes
- Novel ingredients and additives for aquaculture
- New selfhealing biopolymeric materials from byssus
- Selection of marine bacteria able to produce enzymes and biomolecules active and stable under harsh working conditions
- Development and optimization of innovative processes in packed bed bioreactors
- Biomolecules with antifouling activity
- Algal culture for the production of bioactive molecules with industrial, medical and nutraceutical applications

HIGHLIGHT

The University of Bologna has been funded at European level over the years through different programs on the marine pollution and water treatment:

H2020: **INMARE** - *Industrial Applications of Marine Enzymes: Innovative screening and expression platforms to discover and use the functional protein diversity from the sea*.

FP7: **KILL SPILL** - *Integrated Biotechnological Solutions for Combating Marine Oil Spills*; **BIOCLEAN** - *New BIOtechnologiCaL approaches for biodegrading and promoting the environmEntal biotrAnsformation of syNthetic polymeric materials*; **ULIXES** - *Unravelling and exploiting Mediterranean Sea microbial diversity and ecology for xenobiotics' and pollutants' clean up2*.

ERA-NET: **Novofeed** - *Novel feed ingredients from sustainable sources*.

Interdepartmental Centre for Industrial Research in Energy and Environment - CIRI Energy and Environment develops and transfers innovative technologies and methods for the control of environmental quality and for the management of natural resources.