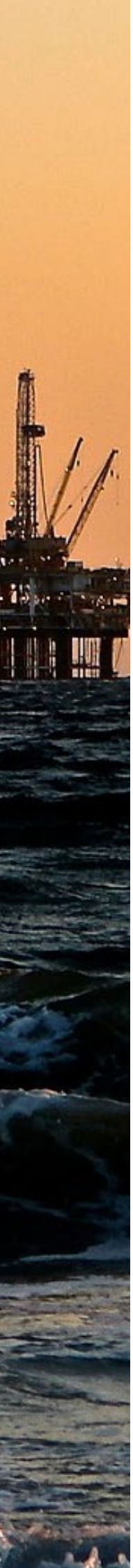
ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

MULTI - PURPOSES OFFSHORE PLATFORMS

Technologies and Structures for the integrated exploitation of offshore resources.

The University of Bologna research focuses on the development of innovative solutions for the exploitation of existing or novel offshore structures (including the refurbishment or conversion to different uses of existing or new structures) that could execute different tasks simultaneously: hubs for commodities and people transit, mining, energy production, research stations, fisheries.



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

- Decommissioning and Reuse options for off-shore installations
- Assessment and mitigation of ecological impacts
- Assessment of feasibility of energy conversion from renewable sources: mini-hydro, waves, wind offshore
- Design of multi-purpose platforms
- Modelling of floating bodies, WEC, wave energy arrays, integration of marine renewable energy devices
- Design and safety assessment of production facilities on top-side platforms
- Hybrid Generation Systems, integrating energy production from fossil and renewable resources
- Offshore chemical conversion systems for the storage and transportation of offshore renewable energy
- Development of interdisciplinary Decision Support Systems for the optimal design of off-shore installations
- International and national legal regulation on multi-purposes offshore marine platforms; spatial planning issues of marine platforms safety and security (Solas Convention, ISPS Code, Rome Protocol)

HIGHLIGHTS

The University of Bologna contributes to the international research progress working on funded projects at European level and developing innovative solutions:

- **COST Action**, to strength trans-national cooperation: **OPP** - *Oceans Past Platform*.
- **FP7 MERMAID** - *Innovative Multi-purpose offshore platforms: planning, design & operation*.
- **SDWED** - *Structural Design of Wave Energy Devices*.
- **Patent.** Deposit N. 102017000134759: Wave Energy Converter device.

Interdepartmental Centres for Industrial Research (CIRI) "Building and Construction" develops and transfers innovative technologies and methods for the design of innovative infrastructures in the sea. With this aim the manages the **Wave-currents basin (18m x 1 m x 1.5m)** where, 3 dimensional waves can be generated in order to test the structures.