

## ADVANCEMENTS IN OFFSHORE WIND STRUCTURES

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### ABSTRACT

The Minisymposium on Offshore Wind Structures presents a unique platform for researchers, engineers, and industry professionals to discuss recent developments and cutting-edge solutions in the field of offshore structures and wind energy. This multidisciplinary event explores topics such as wind turbine technologies, monopiles and jackets foundations, the emerging field of floating wind turbines, dynamic vibration control systems, vibration absorption configurations, seismic isolation, nonlinear FE dynamics and advanced CFD simulations.

By addressing the challenges associated with offshore structures and wind energy, this minisymposium aims to foster knowledge exchange, collaboration, and innovation towards sustainable and resilient offshore energy systems. The minisymposium encompasses a wide range of themes, including:

- i. Offshore Wind Turbines: Advances in design, operation, and maintenance of offshore wind turbines, focusing on robustness, structural integrity, and reliability.
- ii. Floating Wind Turbines: Novel approaches and design strategies for floating wind turbines, enabling the harnessing of wind energy in deeper waters, unlocking vast offshore wind resources.
- iii. Monopiles and Jackets: Exploration of the latest developments in monopile and jacket designs, installation techniques, and foundation optimization to support offshore wind turbines.
- iv. Vibrations Mitigation: Techniques and methodologies to reduce vibrations in offshore structures, enhancing their performance, longevity, and safety in harsh marine environments.

- v. **Seismic Isolation:** Innovations in seismic isolation techniques for offshore structures to withstand earthquakes and enhance their resilience, minimizing potential damage and downtime.

Attendees will have the opportunity to engage in discussions, share their research findings, and explore potential collaborations. Moreover, the event will provide a platform for researchers, industry experts, and technology developers to exchange knowledge and experiences, accelerating the deployment of sustainable offshore energy systems. We invite researchers, engineers, and industry professionals to participate actively in this minisymposium, contributing to the collective understanding of offshore structures, offshore wind energy, vibrations mitigation, seismic isolation, and the transformative potential of next-generation wind turbines.