ICCS29 - 29th International Conference on Composite Structures
Faculty of Architecture, University of Cagliari, Italy - 22-26 June 2026
Special Session

Recent Advancements in Morphing Composite Structures

Morphing structures, engineered systems capable of changing their shape, properties, or functional behaviour in response to external stimuli, are becoming increasingly important across a wide range of application areas. Inspired by adaptive mechanisms found in nature, these structures enable the creation of efficient, multifunctional, and intelligent systems that can actively adjust to their environment. Shape adaptivity has developed into a vibrant and diverse field of research that integrates structural mechanics, materials science, dynamics, control, and advanced manufacturing. Computational and experimental approaches together provide the foundation for understanding, characterising, designing, and optimising these complex adaptive systems in a systematic and predictive manner.

This special session brings together recent advances in morphing composite structures and other smart, active, and adaptive systems. Its goal is to foster exchange among researchers from diverse disciplines, to share new concepts and methodologies, and to explore the expanding possibilities within this rapidly evolving research area.

Topics of interest include, but are not limited to:

- Analysis and design of multistable composite structures
- Composite energy harvesters involving large shape changes
- Deployable and reconfigurable structures for space applications
- Functionally architected structures for adaptive behaviour
- Shape morphing metamaterials and lattice structures
- Morphing structures for aerospace and wind energy applications
- Adaptive composite structures for infrastructure applications
- Other related topics

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