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DESIGN, OPTIMIZATION AND VIRTUAL PROTOTYPING OF LIGHTWEIGHT STRUCTURES IN LAND VEHICLES AND AIRCRAFTS

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SUMMARY/TOPICS

The aim of the Symposium is to present the latest achievements in the field of lightweight design in aviation and land vehicles. It is expected to be a forum for the exchange of views and ideas on various aspects of design, optimization and virtual prototyping of lightweight structures. Particular attention is paid to the use of modern materials and design methods to improve performance, economic and safety factors of newly designed structures.

The Symposium topics cover, but are not limited to:

- recent development in lightweight technologies,
- methods of structural optimization for additive manufacturing,
- lightweight structures with a thermoplastic matrix,
- optimization algorithms with manufacturing constraints,
- effects of manufacturing on the mechanical performance of composites,
- computational mechanics in the manufacturing of composite structure,
- structural reliability methods and design optimization under uncertainties,
- structural and multidisciplinary optimization considering nonlinear behavior,
- biologically inspired numerical methods for lightweight design,
- computational modeling of fibrous and discrete materials,
- advances in plate and shell modeling of a laminated composite, sandwich, and multi-functional structures
- application of functionally graded materials in lightweight design,
- functional lightweight structures,
- lightweight supporting frameworks for additive manufacturing,
- industrial applications of lightweight design.