

CREATIVITY AND INNOVATION IN STRUCTURAL DESIGN

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SUMMARY/TOPICS

The Symposium aims at modern contemporary issues of structural design. It is expected to be a forum for exchanging views and ideas regarding various aspects of design and optimization-driven structural mechanics. All emerging topics spanning across various disciplines are under consideration. The special attention is paid to these areas where engineers' creativity and innovation are involved in the design process, however, papers exploring wide range of structural design problems treating them in more traditional way are also welcome.

The Symposium topics cover, but are not limited to:

- recent development in structural optimization methods and algorithms,
- original concepts of design methodology and new possibilities for long-standing design methods,
- new rationalization concepts inspired by modern design needs,
- optimal design with innovative heuristic approaches, evolutionary methods, cellular automata,
- application of artificial intelligence and methods based on biological patterns,
- new approaches to handle various constraints including stress, fatigue, and manufacturability,
- topology optimization in fluid dynamics, thermodynamics, electromagnetism and acoustic problems,
- topology optimization for multiple loading condition,
- optimization of sensor and actuator placement in structural control and monitoring problems
- methodology of finding alternative solutions taking into account aesthetic and functional design,
- innovative structural design in architecture and civil engineering,
- retrofit design synthesis,
- combining topology optimization with functionally graded materials,
- theoretical and engineering aspects of additive manufacturing,
- engineering applications including large scale industrial problems.