

## ADVANCES IN MODELING AND SIMULATION OF FGM AND MULTIFUNCTIONAL STRUCTURES

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### ABSTRACT

Structures with spatially inhomogeneous material properties are of great practical importance in modern product and system design. Functionally Graded Materials (FGMs) and Multifunctional Materials are formed by a continuous gradation of two or more constituents over the physical volume. The minisymposium will offer a framework for discussing new ideas in this emerging field with emphasis on, but not limited to the following:

- FGM beam, shell and solid finite elements accompanied with suitable homogenization procedures with variation of material properties in one, two and three directions
- Novel concepts regarding non-uniform torsion of FGM beam and beam structures
- Linear and nonlinear problems of elastostatics and elastodynamics and elastoplasticity
- The multiphysical regime (thermo-elasticity and the piezo-electric effect, electro-thermal-structural problems, the Thomson and Seebeck effect, electromagnetic-structural analysis, etc.)
- Measurement technology and verification strategies for numerical procedures

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