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SMART MATERIALS AND STRUCTURES

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ABSTRACT

In the past two decades technological developments in material and computer sciences have evolved to the point where their synergistic combination have culminated in a new field of multidisciplinary research in smart structures, systems and related technologies. The advances in material sciences have provided a comprehensive and theoretical framework for implementing multifunctionality into materials, and the development of high speed digital computers has permitted the transformation of that framework into methodologies for practical design and production.

The objective of this minisymposium is to bring together researches working in the field of smart materials and structures. This field of research requires cutting–edge

multi–interdisciplinary studies and gives rise to numerous new challenging problems.

This mini–symposium will provide a forum for presentation and discussion of modelling and computational aspects concerned with smart materials and structures. It will cover such topics as non–linear static, dynamic, coupled multi–field, and multiscale analyses of piezoelectrics, shape memory alloys, and other multifunctional materials. Moreover, extended structural design methodologies related to sensing and actuation in structures with embedded functional (active) materials will be of interest, as well as structural health monitoring, extended non–destructive testing, guided wave propagation in composite structures, damage assessment analysis and vibro–acousto–ultrasonic methods for damage detection using smart sensor technologies.

Novel mathematical formulations and computational methods as well as adapted solution procedures are of particular interest and kindly welcome.
