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Advances in Mechanical Problems of Functionally Graded Materials and Structures

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The book deals with novel aspects and perspectives in functionally graded materials (FGMs), which are advanced engineering materials designed for a specific performance or function with spatial gradation in structure and/or composition. The contributions mainly focus on numerical simulations of mechanical properties and the behavior of FGMs and FGM structures. Several advancements in numerical simulations that are particularly useful for investigations on FGMs have been proposed and demonstrated in this Special Issue. Such proposed approaches provide incisive methods to explore and predict the mechanical and structural characteristics of FGMs subjected to thermoelectromechanical loadings under various boundary and environmental conditions. The contributions have resulted in enhanced activity regarding the prediction of FGM properties and global structural responses, which are of great importance when considering the potential applications of FGM structures. Furthermore, the presented scientific scope is, in some way, an answer to the continuous demand for FGM structures, and opens new perspectives for their practical use.

