

# Functionally Graded Materials



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Put a new class of structural composites to use real solutions for predicting load. Initially designed as thermal barrier materials for aerospace applications and fusion reactors, functionally graded materials (FGMs) are now widely employed as structural components in extremely high-temperature environments. However, little information is commonly available that would allow engineers to predict the response of FGM plates and shells subjected to thermal and mechanical loads. "Functionally Graded Materials: Nonlinear Analysis of Plates and Shells" is the first book devoted to the geometrically nonlinear response of inhomogeneous isotropic and functionally graded plates and shells. Concerned that the high loads common to many structures may result in nonlinear load - deflection relationships due to large deformations, author Hui-Shen Shen has been conducting investigations since 2001, paying particular attention to the nonlinear response of these plates and shells to nonlinear bending, postbuckling and nonlinear vibration. Nearly all the solutions presented are the results of investigations conducted by the author and his collaborators. The rigor of these investigative procedures allows the results presented within these pages to stand as a benchmark against which the validity and accuracy of other numerical solutions may be measured.

作者介绍:

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