



Mechanics of Advanced Functional Materials(Chinese Edition)

By WANG BIAO

Hardcover. Condition: New. Ship out in 2 business day, And Fast shipping, Free Tracking number will be provided after the shipment. Hardcover. Pub Date: 2012 Pages: 528 Language: Chinese in Publisher: Zhejiang University Press This book is an attempt to tackle mainly the following two problems: (1) to analyze the effect of stress and deformation of materials on the functional properties of the . and (2) to establish the quantitative models related with the microstructural evolution. The general formulation will be developed from the detailed analyses of the separated examples. Contents: 1 Introduction 2 Basic Solution of Elastic and Electric Fields of Piezoelectric Materials with Inclusions and Defects 2.1 The Coupled Differential Equation of Elastic and Electric Fields in Piezoelectric Solids 2.1.1 Thermodynamic Framework 2.1.2 Linear Constitutive Equation 2.1.3 The Equation of Equilibrium 2.1.4 The Basic Equation of a Static Electric Field 2.1.5 Differential Equation for Piezoelectric Materials 2.2 Boundary Conditions 2.3 Solution Methods for Two-Dimensional Problems 2.3.1 The Stroh Formalism for Piezoelectric Materials 2.3.2 The Lekhnitskii Formalism for Piezoelectric Materials 2.3.3 Conformal Transformation of the Core Function 2.4 Basic Solution for Two-Dimensional Problems 2.4.1 Elliptical Cylindrical Inclusion in Piezoelectric Materials 2.4.2 Cracks 2.4.3 Dislocation and Line Charges 2.5 Solution Methods for Three-Dimensional Problems 2.5.1 Eigenstrain and Equivalent Inclusion Method 2.5.2 Method of Fourier Integrals 2.5.3 Method of...



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