

《先进功能材料力学》

图书基本信息

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内容概要

《先进功能材料力学(英文版)》内容简介：This book is an attempt to tackle mainly the following two problems: (1) to analyze the effect of stress and deformation on the functional properties of the materials, 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.

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《先进功能材料力学》

编辑推荐

《先进功能材料力学(英文版)》编辑推荐：近些年来，压电、铁电、光电等功能材料由于制备方法和工艺的进步以及越来越广泛的工程应用已经成为材料科学，凝聚态物理，力学等领域的研究热点。这些功能材料传统上不是力学领域的研究课题。但由于现代的材料加工工艺必然导致不可忽略的应力和应变，而且，人们也发现由于应变应力的存在，功能材料的性能会发生很大的改变。这样，力学与电、磁、光等功能的耦合成为目前热门的研究领域。而且，任何的功能材料都存在强度和可靠性的问题，这也需要拓宽传统的力学模型和理论进行解决。《先进功能材料力学(英文版)》的重点是针对力、电、磁、光的重要耦合问题，发展新颖的数学模型进行解释、预报先进功能材料的性能。研究利用力学变量定量调控功能材料性能的理论和方法。将系统总结作者多年来在压电、铁电和光电等功能材料与力学相互作用等方面的研究成果，初步形成功能材料的力学模型理论体系。《先进功能材料力学(英文版)》重点强调交叉学科和非线性科学的作用，从工程实际问题出发，系统描述物理建模和求解的方法。《先进功能材料力学(英文版)》可以作为相关学科的研究生和研究人员的主要参考书。

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