# <<徐祖耀文选>>

## 图书基本信息

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## 内容概要

承袭前集《徐祖耀文选》，《徐祖耀文选（续）》这本书系统精选徐祖耀近10年来在材料科学领域发表的68篇英文学术论文，集中反映其在马氏体与贝氏体相变、超高强度结构钢、纳米材料的结构稳定性与相变机制、形状记忆材料等方面的进一步探索及创新性成果，以为同仁提供宝贵的借鉴。

《徐祖耀文选（续）》可供从事材料科学、金属学、固体物理、机械等方向的研究人员及相关专业的高校师生参考。

## 书籍目录

## 章节摘录

版权页：1.IntroductionIt is well known that the γ → ε transformation in Fe-Mn-Si based shape memory alloys is associated with stacking faults (SF), while the stacking fault tetrahedron(SFT) plays an important role in the SF initiation [1, 2].The stacking faults have been extensively investigated on various aspects, such as the thermodynamic calculation of SF energy [3, 4], the XRD measurement of SF probability (Psf) [5] and the CTEM and HRTEM observations of SF and SFT [6, 7]. However, only little work was done on their symmetry characteristics till now. On the other hand, their momechanical training as an effective method to improve the shape memory effect (SME) may lead to formation of transition phases of which some have been examined by internal friction experiment in Fe-26.4Mn-6.0Si-5.2Cralloy [8] and characterized by TEM in Fe-30Mn-6Si alloy [9], but the others are still not identified. The group theory will be used to describe the symmetry characteristics of the SF and SFT, to predict the possible transition phases in Fe Mn-Si based alloys and to evaluate their stabilities based on thermodynamic consideration.2.Symmetry of planar stacking faultsStacking fault as a kind of planar defects is not a simple plane, but actually is a three-dimensional-structured plane with two-dimensional period. Because of its very low SFE (several mJ/m2) and, thus, its rather wide extension in Fe-Mn-Si based alloys, the stacking fault belongs to this kind of specific plane. Therefore, the layer group in symmetry groups can be suitably used for studying the symmetry characteristics of such stacking faults.2.1.Layer groupCrystal symmetry group includes point group, plane group, layer group and space group besides staff group, color group and so on. Among them, layer group describes the symmetry group of two-plane objects with double-layer structure which is different from two-dimensional plane group. For the two-dimension situation, 17 kinds of plane groups can be deduced by means of operations including rotation transformation (one- to six-fold axes except the five-fold one), reflected plane (m) and translation. When a single plane changes into double, an inversion center (i) and a rotating inversion as new operations lead to 80 kinds of layer groups with the definition of space group on the basis of plane group. All these layer groups attributing to four crystal systems (rectangle, rhemble, tetragonal and hexagonal)

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