

<<聚变能原理>>

图书基本信息

书名：<<聚变能原理>>

13位ISBN编号：9789812380333

10位ISBN编号：9812380337

出版时间：2000-12

出版时间：Penguin Group (USA)

作者：Miley, G. H.

页数：295

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

## &lt;&lt;聚变能原理&gt;&gt;

## 内容概要

This textbook accommodates the two divergent developmental paths which have become solidly established in the field of fusion energy: the process of sequential tokamak development toward a prototype and the need for a more fundamental and integrative research approach before costly design choices are made. Emphasis is placed on the development of physically coherent and mathematically clear characterizations of the scientific and technological foundations of fusion energy which are specifically suitable for a first course on the subject. Of interest, therefore, are selected aspects of nuclear physics, electromagnetics, plasma physics, reaction dynamics, materials science, and engineering systems, all brought together to form an integrated perspective on nuclear fusion and its practical utilization. The book identifies several distinct themes. The first is concerned with preliminary and introductory topics which relate to the basic and relevant physical processes associated with nuclear fusion. Then, the authors undertake an analysis of magnetically confined, inertially confined, and low-temperature fusion energy concepts. Subsequently, they introduce the important blanket domains surrounding the fusion core and discuss synergetic fusion-fission systems. Finally, they consider selected conceptual and technological subjects germane to the continuing development of fusion energy systems. --This text refers to an out of print or unavailable edition of this title.

## &lt;&lt;聚变能原理&gt;&gt;

## 书籍目录

PrefacePART CONTEXT, PHENOMENA, PROCESSES 1 Introduction 1.1 Matter and Energy 1.2 Matter and Energy Accounting 1.3 Component Energies 1.4 Fusion Fuels 1.5 Fusion in Nature Problems 2 Physical Characterizations 2.1 Particles and Forces 2.2 Thermal Kinetics 2.3 Distribution Parameters 2.4 Power and Reaction Rates 2.5 Sigma-V Parameter Problems 3 Charged Particle Scattering 3.1 Collisional Processes 3.2 Differential Cross Section 3.3 Debye Length 3.4 Scattering Limit 3.5 Bremsstrahlung Radiation ProblemsPART CONFINEMENT, TRANSPORT, BURN 4 Fusion Confinement 4.1 Necessity of Confinement 4.2 Material Confinement 4.3 Gravitational Confinement 4.4 Electrostatic Confinement 4.5 Inertial Confinement 4.6 Magnetic Confinement Problems 5 Individual Charge Trajectories 5.1 Equation of Motion 5.2 Homogeneous Electric Field 5.3 Homogeneous Magnetic Field 5.4 Combined Electric and Magnetic Field 5.5 Spatially Varying Magnetic Field 5.6 Curvature Drift 5.7 Axial Field Variations 5.8 Invariant of Motion 5.9 Cyclotron Radiation Problems 6 Bulk Particle Transport 6.1 Particle Motion 6.2 Continuity and Diffusion 6.3 Particle-Fluid Connection 6.4 Particle Kinetic Description 6.5 Global Particle Leakage Problems 7 Fusion Burn 7.1 Elementary D-T Burn 7.2 Comprehensive D-T Burn 7.3 Identical Particle Burn 7.4 D-D Burn Modes 7.5 D-3He Fusion 7.6 Spin Polarized Fusion 7.7 Catalyzed Fusion ProblemsPART ENERGETICS, CONCEPTS, SYSTEMS 8 Fusion Reactor Energetics 8.1 System Energy Balance 8.2 Plasma Heating 8.3 Lawson Criterion 8.4 Ignition and Break-Even Problems .....PART COMPONENTS, INTEGRATION, EXTENSIONSPART APPENDICESBibliographyIndex

<<聚变能原理>>

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>