

《材料概论》

图书基本信息

书名：《材料概论》

13位ISBN编号：9787561823422

10位ISBN编号：7561823428

出版时间：2006-9

出版社：天津大学出版社

作者：袁晓燕

页数：158

版权说明：本站所提供下载的PDF图书仅提供预览和简介以及在线试读，请支持正版图书。

更多资源请访问：www.tushu111.com

《材料概论》

内容概要

本书以各种材料的概述性基础知识及其重要品种的结构与应用为主要内容，涵盖金属材料、无机非金属材料、高分子材料及生物材料和复合材料。是继专业外语之后发展的一门材料类综合性双语教学课程教材。本书内容选自外文书籍、期刊和相关网站。全书共设5章，每章后附有关键词和简答题。

- 本书为高等理工科院校材料科学与工程专业本科公共基础理论课教材，同时也适用于本专业研究生的教学与科研，还可供从事材料方向研究和应用的科研技术人员参考。

《材料概论》

书籍目录

Introduction 1.1 Historical perspective 1.2 Classification of materials 1.3 Structures of metals and ceramics
1.3.1 Structure of metals 1.3.2 Structure of ceramics 1.4 Polymer structures 1.4.1 Macromolecules
1.4.2 Molecular weight 1.4.3 Molecular structures Keywords Problems Selected from2 Metal
Materials 2.1 Structure and properties of steel 2.1.1 Iron-earben alloys 2.1.2 Strength versus carbon
content in steels 2.1.3 Formtions of pearlite 2.1.4 Effect of cooling rate 2.1.5 Alloying dements
2.1.6 Selecting carbon steels 2.2 Heat treatment of steels 2.2.1 Response of steels to heat treatment
2.2.2 Hardenability 2.2.3 Surface hardening 2.2.4 Tempering 2.2.5 Choice of heat treatment 2.3
Stainless steels 2.3.1 Composition, nomenclature and general properties 2.3.2 Common stainless steel
alloy systems 2.3.3 Corrosion behavior of stainless steels 2.4 Nonferrous alloys 2.4.1 Copper and its
alloys 2.4.2 Aluminum and its alloys 2.4.3 Magnesium and its alloys 2.4.4 Titanium and its alloys
2.4.5 Refractory metals 2.4.6 Superalloys 2.4.7 Noble metals 2.4.8 Miscellaneous nonferrous alloys
Keywords Problems Selected from3 Ceramic Materials 3.1 Introduction to ceramics 3.1.1 Definition
of ceramics 3.1.2 Classification of ceramics 3.1.3 Overview of ceramic and glass manufacturing 3.1.4
Structure and properties of ceramics 3.1.5 History of ceramics 3.1.6 Impact on society 3.2 What are
advanced ceramics 3.3 Structural ceramics and its development 3.3.1 Introduction and current status
3.3.2 Trends 3.3.3 Future work strategies 3.4 Electroceramics and its developing directions 3.4.1
What are electroceramics 3.4.2 Common applications for electroceramics 3.4.3 Fundamental research
needs and developing trends for electroceramics 3.5 Bioceramics 3.5.1 Introduction 3.5.2 Bioinert and
bioactive materials 3.5.3 Compatibility between bioeramics and the human environment 3.5.4 Most
common bioeramics 3.5.5 Uses for bioeramics 3.6 Advanced ceramic materials: Summary of possible
applications 3.6.1 Introduction 3.6.2 State of the art 3.6.3 Trends for the future 3.7 Advanced
ceramic materials: Basic research viewpoint 3.7.1 Introduction 3.7.2 State of the art 3.7.3 Trends in
technology 3.7.4 Needs for future basic research
Keywords Problems Selected from4 Polymer Materials
4.1 Introduction 4.1.1 Formation 4.1.2 Classification 4.1.3 Nomenclature 4.1.4 History
4.2 Natural polymers 4.2.1 Polysaccharides 4.2.2 Proteins 4.3 Thermoplastics 4.3.1 Polyethylene
4.3.2 Polypropylene 4.3.3 Polystyrene 4.3.4 Poly(vinyl chloride) 4.4 Engineering plastics and
thermosets 4.4.1 Nylons 4.4.2 Polyesters 4.4.3 Polycarbonates 4.4.4 Polysiloxanes 4.4.5
Epoxy resins 4.5 Applications of polymers 4.5.1 Membrane separations 4.5.2 Biomedical applications
4.5.3 Applications in electronics
Keywords Problems Selected from5 Composite Materials 5.1
Introduction 5.2 Dispersion-strengthened composites 5.3 True particulate composites 5.4 Fiber-reinforced
composites 5.5 Characteristics of fiber-reinforced composites 5.6 Manufacturing fibers and composites 5.7
Fiber-reinforced systems and applications 5.8 Laminar composite materials 5.9 Examples and applications of
laminar composites 5.10 Sandwich structures
Keywords Problems Selected from

《材料概论》

精彩短评

1、这是一本好书，有需要的朋友可以好好看看

《材料概论》

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:www.tushu111.com