

<<测控技术与仪器专业英语>>

图书基本信息

书名：<<测控技术与仪器专业英语>>

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内容概要

《普通高等教育“十二五”规划教材·高等学校专业英语教材：测控技术与仪器专业英语》是普通高等教育“十二五”规划教材，针对测控技术与仪器专业知识体系的经典内容和最新发展，精选国外经典英语原著、国外著名大学最近版本的教材以及IEEE和ACM等机构的TOP期刊与杂志的英文文献，涵盖了测量、电子、控制、机械、网络、计算机等几乎测控技术与仪器专业的全部课程领域。依据典型测控系统结构工作流程脉络组织内容，使专业英语与测控技术与仪器专业知识体系深度有机结合，成为《普通高等教育“十二五”规划教材·高等学校专业英语教材：测控技术与仪器专业英语》的创新点。

全书共6个部分、12个单元，包括综述、信息获取、信息处理、信息传输、信息控制和新技术，分别介绍了测控技术背景、数据采集、测试系统特性、传感技术、信号描述、误差理论、信号处理、通信网络、自动控制、微机原理、软件技术、精密机械，以及虚拟仪器和人工智能等先进测控技术。每个单元包括正文、注释、难句解析和专业术语解释，并配有相关拓展知识的阅读材料。同时，每个部分后面分节介绍了专业英语阅读、翻译和写作技巧。

本书可作为测控技术与仪器，电气工程及其自动化、自动化等相关专业的教材，也可供相关领域的教师、科研人员参考。

同时，本书选材广泛，专业内容难度适中，其他专业的大专生、本科生、研究生及其他从业人员如果希望了解测控技术、自动化技术的概貌和新技术。

可以选择阅读本书的部分内容。

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章节摘录

Control engineering is the engineering discipline that focuses on the modeling of a diverse range of dynamic systems (e.g.mechanical systems) and the design of controllers that will cause these systems to behave in the desired manner.Although such controllers need not be electrical many are and hence control engineering is often viewed as a subfield of electrical engineering.However,the falling price of microprocessors is making the actual implementation of a control system essentially trivial.As a result , focus is shifting back to the mechanical engineering discipline , as intimate knowledge of the physical system being controlled is often desired.

Electrical circuits , digital signal processors and microcontrollers Can all be used to implement control systems.Control engineering has a wide range of applications from the flight and propulsion systems of commercial airliners to the cruise control present in many modern automobiles. In most of the cases , control engineers utilize feedback when designing control systems.This is often accomplished using a PID controller system.For example , in an automobile with cruise control the vehicle ' S speed is continuously monitored and fed back to the system , which adjusts the motor ' S torque accordingly.Where there is regular feedback , control theory Can be used to determine how the system responds to such feedback.In practically all such systems stability is important and control theory Can help ensure stability is achieved. Although feedback is an important aspect of control engineering , control engineers may also work on the control of systems without feedback.This is known as open loop control.A classic example of open loop control is a washing machine that runs through a pre-determined cycle without the use of sensors.

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