

<<电气工程与自动化专业英语>>

图书基本信息

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前言

随着我国国际交往的日趋加强和深化，专业英语作为科技工作者进行国际学术交流的主要语言，在国际交往中扮演着越来越重要的角色。

大学生在校期间的各类科技活动和在未来的工作中，不可避免地要利用到自身掌握的专业英语知识。加强培养大学生的专业英语阅读和写作能力，是其了解世界专业领域前沿知识以及撰写科技文章参与国际交流的迫切要求，也是整个人才培养知识体系中的重要环节。

本书可作为高等院校电气工程与自动化专业的专业英语教材，也可供工程技术人员参考阅读。本书参考学时为60学时，不同院校可根据自身的人才培养方向和课时安排选取本书的部分章节作为学习的内容，剩余部分也可作为学生的自学阅读材料。

本书注重从实际应用的角度培养大学生的专业英语水平。编者结合多年来从事专业英语教学的经验和体会，编写了内容难度适中、表述规范的文章作为本书的阅读材料。

书中涵盖了电气工程与自动化专业的主要知识点内容，覆盖面广。

书中所涉及的专业词汇和句型具有较强的专业特色和代表性，也是了解相关专业领域内容的基础。

全书共包括电气工程基础（第1~5章）、控制理论与技术（第6~11章）、电机与电器设备（第12-16章）和电力系统（第17-20章）4个部分。

本书由北京石油化工学院、沈阳工业大学、太原理工大学、中原工学院等几所高校多年从事专业英语教学工作的老师联合编写。

其中，第1~5章由王伟老师编写，第6、7章由马景兰老师编写，第8-10章由裴素萍老师编写，第11-15章由张艳丽老师编写，第16-20章由韩肖清老师编写。

全书由王伟和马景兰老师统稿。

此外，北京石油化工学院李伟、万京生、郭屹松，太原理工大学王鹏敏和上海应用技术学院裴素鹏等老师也参与了本书的部分资料编辑和整理工作。

北京理工大学邓甲昊教授负责本教材的审阅，并提出了许多宝贵意见，在此表示衷心的感谢。

由于编者水平和经验有限，书中难免存在疏漏和不足之处，敬请读者批评指正。

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内容概要

本书分为电气工程基础、控制理论与技术、电机与电器设备、电力系统4大部分，共20章。为便于学生对文章的正确理解，每章后均补充了必要的专业英语词汇、短语及句子注释。本书涵盖了电气工程与自动化专业的主要专业基础理论内容，注重从实际应用出发培养学生的专业英语阅读和写作能力。

本书既可作为高等院校电气工程与自动化及相关专业高年级学生的专业英语教材，也可作为从事电气信息类各专业工程技术人员的参考用书。

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章节摘录

2. Electronic Circuits Current flow takes place in electronic circuits. A circuit is a path for electric current flow. Electric current flows only when it has a complete , or closed-circuit , path. There must be a source of electrical energy to cause current to flow along a closed path. 4 The electrical energy is converted into more useful energy , for example , the light energy. Electric current cannot flow if a circuit is open. An open circuit does not provide a complete path for current flow. Free electrons of the conductor would no longer move from one atom to another. An example of an open circuit is a "burned-out" light bulb. Actually , the filament (the part that produces light) has become open. The open filament of a light bulb stops current flow from the source of electrical energy. This causes the bulb to stop burning , or producing light. Another common circuit term is a short circuit. A short circuit , which can be very harmful , occurs when a conductor connects directly across the terminals of an electrical energy source. For safety purposes , a short circuit should never happen because short circuits cause too much current to flow from the source. If a wire is placed across a battery , a short circuit occurs. The battery would probably be destroyed and the wire could get hot or possibly melt due to the short circuit.

1.3.2 Voltage Water pressure is needed to force water along a pipe. Similarly , electrical pressure is needed to force current along a conductor. If a motor is rated at 220 V , it requires 220 V of electrical pressure applied to the motor to force the proper amount of current through it. More pressure would increase the current flow and less pressure would not force enough current to flow. The motor would not operate properly with too high or too low voltage. An electrical energy source such as a battery or generator produces current flow through a circuit. As voltage is increased , the amount of current in the circuit is also increased. Voltage is also called electromotive force (EMF).

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