

<<近代物理学>>

图书基本信息

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## &lt;&lt;近代物理学&gt;&gt;

## 前言

本书是为修完基于微积分的物理课程的理工科学生编写的近代物理学教材。

全书共分16章，包括两部分内容：从第1章到第10章主要是讲述相对论、量子理论和统计物理学理论；从第11章到第16章主要是介绍量子理论在分子、固体、原子核及粒子物理方面的一些基本应用，其中第16章（宇宙论）的内容上载在本书配套的网站。

因此，本书覆盖了在科学和技术中广泛应用的近代物理学方面的基本内容。

在讲法上，本书避免复杂的数学推导，突出物理本质和物理图像，使用了大量的图表，简单明了地阐述了近代物理学中的基本概念和基本规律。

书中对教学内容的难点和疑点，均作了深入浅出的剖析，并配备了足够数量的具有针对性的例题。

书中注重介绍近代物理学知识的现代应用，回答了近代物理学中的一些基本问题，例如：是什么让分子结合在一起？

电子是如何穿透势垒的？

固体中的电子是怎样运动的？

超导体中的电流为什么能维持无限大？

本书通过引入20世纪物理学发展的一些重要历史资料，包括著名科学家的照片及其原创性成果介绍，还有一些实验装置的照片，增强了物理学理论的真实感和生动感。

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## 内容概要

《近代物理学（第3版）》是为修完基于微积分的物理课程的理工科学生编写的近代物理学教材。

全书共分16章，包括两部分内容：从第1章到第10章主要是讲述相对论、量子理论和统计物理学理论；从第11章到第16章主要是介绍量子理论在分子、固体、原子核及粒子物理方面的一些基本应用，其中第16章（宇宙论）的内容上载在《近代物理学（第3版）》配套的网站。

因此，《近代物理学（第3版）》覆盖了在科学和技术中广泛应用的近代物理学方面的基本内容。

在讲法上，《近代物理学（第3版）》避免复杂的数学推导，突出物理本质和物理图像，使用了大量的图表，简单明了地阐述了近代物理学中的基本概念和基本规律。

书中对教学内容的难点和疑点，均作了深入浅出的剖析，并配备了足够数量的具有针对性的例题。

书中注重介绍近代物理学知识的现代应用，回答了近代物理学中的一些基本问题。

《近代物理学（第3版）》还通过引入20世纪物理学发展的一些重要历史资料，包括著名科学家的照片及其原创性成果的介绍，还有一些实验装置的照片，增强了物理学理论的真实感和生动感。

## 作者简介

作者：(美国)塞尔维 (Serway.R.A.) (美国)摩西 (Moses.C.J) (美国)摩尔 (Moyer.C.A) Raymond.A. Serway received his doctorate at Illinois Institute of Technology and is Professor Emeritus at James Madison University. Dr. Serway began his teaching career at Clarkson University, where he conducted research and taught from 1967 to 1980. His second academic appointment was at James Madison University as Professor of Physics and Head of the Physics Department from 1980 to 1986. He remained at James Madison University until his retirement in 1997. He was the recipient of the Madison Scholar Award at James Madison University in 1990, the Distinguished Teaching Award at Clarkson University in 1977, and the Alumni Achievement Award from Utica College in 1985. As Guest Scientist at the IBM Research Laboratory in Zurich, Switzerland, he worked with K. Alex Müller, 1987 Nobel Prize recipient. Dr. Serway also held research appointments at Rome Air Development center from 1961 to 1963, at IIT Research Institute from 1963 to 1967, and as a visiting scientist at Argonne National Laboratory, where he collaborated with his mentor and friend, Sam Marshall. In addition to earlier editions of this textbook, Dr. Serway is the co-author of Physics for Scientists and Engineers, 6th edition, Principles of Physics, 3rd edition, College Physics, 6th edition, and the high-school textbook Physics, published by Holt, Rinehart, and Winston. In addition, Dr. Serway has published more than 40 research papers in the field of condensed matter physics and has given more than 60 presentations at professional meetings. Dr. Serway and his wife Elizabeth enjoy traveling, golfing, fishing, and spending quality time with their four children and seven grandchildren. Clement J. Moses is Emeritus Professor of Physics at Utica College. He was born and brought up in Utica, New York, and holds an A.B. from Hamilton College, an M.S. from Cornell University, and a Ph.D. from State University of New York at Binghamton. He has over 30 years of science writing and teaching experience at the college level, and is a co-author of College Physics, 6th edition, with Serway and Faughn. His research work, both in industrial and university settings, has dealt with defects in solids, solar cells, and the dynamics of atoms at surfaces. In addition to science writing, Dr. Moses enjoys reading novels, gardening, cooking, singing, and going to operas. Curt A. Moyer has been Professor and Chair of the Department of Physics and Physical Oceanography at the University of North Carolina-Wilmington since 1999. Before his appointment to UNC-Wilmington, he taught in the Physics Department at Clarkson University from 1974 to 1999. Dr. Moyer earned a B.S. from Lehigh University and a Ph.D. from the State University of New York at Stony Brook. He has published more than 45 research articles in the fields of condensed matter physics and surface science. In addition to being an experienced teacher, Dr. Moyer is an advocate for the uses of computers in education and developed the Web-based QMTools software that accompanies this text. He and his wife, V. Sue, enjoy traveling and the special times they spend with their four children and three grandchildren.

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