

<<物理化学简明双语教程>>

图书基本信息

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作者：何美，周华锋 编

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前言

随着中国与世界的接轨和世界经济一体化的进程，迫切需要大量精通英语的人才。

作为一种培养国际化人才的有效手段，双语教学势在必行。

国家教育部也在2002年提出加强大学本科教学的12项措施中，要求各高校在三年内开设5%-10%的双语课，并引进原版教材和编写双语教材。

开设物理化学双语课，可以帮助学生扩大专业和非专业英语词汇量，提高学生的英语水平，开阔视野。

原版物理化学教材一方面价格很昂贵，另一方面也不完全适合国内大学本科学生的学习。

编写一套在效度、信度、难度各方面都符合教学要求的双语教材，不仅可以减少教师的备课难度和工作量，而且对激发学生专业学习的兴趣也大有帮助。

这本《物理化学简明双语教程》对教学基本要求所规定的内容采用汉语和英语两种语言形式编写，便于教师和学生理解与学习。

本教材各章内容结构如下：第一章气体的pVT性质；第二章热力学第一定律；第三章热力学第二定律；第四章多组分系统热力学；第五章化学平衡；第六章相平衡；第七章电解质溶液；第八章电化学系统；第九章界面现象；第十章化学动力学。

其中，第一至第六章主要由何美编写，第七至第十章主要由周华锋编写。

此外，参与本书编写的还有侯纯明、张丽清、王雅静、李云等老师。

另外，为了与《物理化学简明双语教程》这一教材配套，我们还编写了物理化学双语解题指导：《物理化学双语基础》，以方便学生学习使用本教材。

该解题指导已经由中国石化出版社出版发行。

由于编者水平有限，书中错误和不当之处在所难免，欢迎读者批评指正。

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内容概要

《高等院校“十一五”规划教材：物理化学简明双语教程》编写是为了适应物理化学双语教学这一全新的教学模式，解决物理化学双语教材短缺的问题。

在编写的过程中尽量做到内容精练、简明易懂，并对每一部分重点内容均采用英、汉双语进行编写。

《高等院校“十一五”规划教材：物理化学简明双语教程》共分十章，内容包括：气体的pVT性质；热力学第一定律；热力学第二定律；多组分系统热力学；化学平衡；相平衡；电解质溶液；电化学；界面现象；化学动力学。

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Introduction (绪论) 0.1 Physical chemistry (物理化学) Physical chemistry studies the underlying physical principles that govern the Properties and behavior of chemical systems. It is the subject which start with the connection of physical phenomenon and chemical phenomenon, then utilize physical theories and experimental methods to look for The rules of chemical change. A chemical system can be studies from either a microscopic or a macroscopic viewpoint. The microscopic viewpoint makes explicit use of the concept of molecules. The macroscopic viewpoint studies large-scale properties of matter without explicit use of the molecule concept.

0.1.1 Contents of physical chemistry (物理化学的研究内容) We can divide physical chemistry into four main areas: thermodynamics, quantum chemistry, statistical mechanics, and kinetics. Thermodynamics (热力学) is a macroscopic science that studies the interrelation-ships among the various equilibrium properties of a system. Molecules and the electrons and nuclei that compose them do not obey classical (Newtonian) mechanics; instead their motions are governed by the laws of quantum mechanics. Application of quantum mechanics to atomic structure, molecular bonding, and spectroscopy gives us quantum chemistry (量子化学).

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编辑推荐

《物理化学简明双语教程》既可作为高等院校双语物理化学教学的教材使用，也可以作为非双语物理化学教学的参考教材。

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