

<<物理化学实验指导>>

图书基本信息

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内容概要

《物理化学实验指导》由崔黎丽主编，为全国高等学校药学专业第七轮规划教材物理化学的配套教材。

本书分为三个部分：（1）绪论，主要介绍物理化学实验课程的目的和要求、实验报告书写规则、实验室安全知识、误差理论和有效数字、实验数据的表示与处理，以及物理化学实验的设计思想；（2）实验部分，在汲取参编院校长期实验教学经验的基础上，选编了热力学、相平衡、电化学、动力学、表面和胶体化学等物理化学分支中有代表性且较成熟的实验。此外，还编写了部分综合、设计性实验，在强化基础知识、基本技能训练的基础上，培养学生动手能力、创新思维能力和科学素养，培养学生分析问题和解决问题的能力；（3）附录部分，收录一些常用数据表以便查阅，以及本书编写过程中的参考文献。

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版权页：插图：(4) If the leading digit is equal to or greater than 8, increase the number of significant figure by one. For example, we can take the number of 9.15 as 4 significant figures in calculation. (5) In addition and subtraction, retain as many decimal figures as are given in the number having the fewest decimals. In multiplication and division, the result should be retained to have the same number of significant figures as in the components with the least number of significant figures.

5. Data reporting Most commonly, the data obtained in physical chemistry are presented in the form of tables, graphs or equations.

5.1. Tables After experiment, organize the data observed into a table according to the relationship between independent variables and dependent variables. It is easy to create a table and make comparison among a list of data. The primitive data are commonly presented in a table. There are some guidelines for creating a good table. (1) The table should have a title that provides a short description of the table's purpose. (2) The columns and rows should be labeled and the physical name and units must be indicated. (3) The data reported in table should be in their simplest form. If a same power of ten is used, it should be indicated in the column heading. (4) The decimal point of the numbers in a column should be aligned. (5) In general, the condition of experiment or surroundings should be specified in table, such as room temperature, atmospheric pressure, date and time of the measurement. Presenting the data in the form of table holds the advantages of simple. It is easier for comparison and reference. The raw data from the experiment are usually given in the form of a table.

5.2. Graphs

5.2.1. Use of graphs The use of graphs in presenting experiment data is called graphic methods. Graphing techniques are very useful in experimental physical chemistry mainly to (1) give a pictorial presentation of the variance regularity of the data; (2) reveal maxima, minima, inflection points, or other significant features; (3) perform direct differentiation by drawing tangents to a curve, accomplish integration, and so on. Some examples of uses of graphs are as follows. (1) Interpolation method Use the raw data from the experiment to plot the graph. The curve shows the relationship between dependent variable and independent variable. An intermediate value of one variable (dependent or independent), can be obtained from the curve. For example, in drawing a phase diagram of a binary liquid system of cyclohexane and ethanol, the composition of vapor and liquid at equilibrium are obtained by interpolation method.

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