



Optical Science Helps All Science

This is a picture of a pair of optical flats, showing the interference fringes discovered by Sir Isaac Newton. These fringes caused by the interference of the reflected rays of light from both contact surfaces, as seen through the optical flat or test glass, permit measurements accurate to 0.000002". This optical principle is applied to the production of all Bausch & Lomb precision optical elements, from microscope objective lenses as small as a pinhead to giant telephoto lenses for aerial cameras. It is also used by science and industry as one of their most precise methods of measurement.

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On the whole, the book is one of the finest of elementary-intermediate texts now in the field and should be one of the easiest from which to teach, except perhaps for three or four less superior chapters out of the thirteen. The present volume suffers somewhat in attractiveness as a result of wartime paper restrictions.

JOHN R. PLATT

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The chemical process industries. R. Norris Shreve. New York: McGraw-Hill, 1945. Pp. xiii + 957. (Illustrated.) \$6.00.

This is a most worthwhile reference text for all chemists, chemical engineers, chemical executives, chemistry and chemical engineering students, and others who are interested in an up-to-date and detailed account of the production methods for the manufacture of most of the more common chemicals and chemical products. Shreve's book is a welcome addition to our industrial chemical references, of which there are several excellent books of recent edition, for it brings together for the first time a closer relationship of the unit operations and unit processes involved with the actual industrial procedures. This is most essential for a better scientific and engineering understanding of these chemical processes.

The book is written from the viewpoint of the teacher and therefore serves well as a text for industrial chemistry courses. A discussion of the fundamental principles of chemical engineering as treated in a general way in the early chapters will provide the student with a better appreciation of the design, operation, and control features of the processes to be discussed later. Instead of arranging the processes in the usual order of sulfuric acid, phosphorus, soda, methyl alcohol, or aniline, the author covers these processes in a more logical fashion under groupings according to related manufacturing industries involving similar raw materials and chemical changes, such as fuels, ceramics, sodium salts, electrolytic products, paints, soaps, plastics, organic intermediates, etc. These are presented from an over-all standpoint to include the fundamental chemistry involved in the transformation of the raw materials into finished products, the process operations with specific conditions required, the essential design and construction features of the equipment, properties and industrial applications of the chemical products, and the economic aspects of the process. Interspersed with the descriptive material are many illustrations of the plant equipment as well as typical flow sheets of the processes which are of help in obtaining a clearer idea of the manufacturing methods. At the end of each chapter are problems and questions concerning the processes under discussion which enable the student or reader to determine in a practical way his mastery of these subjects.

There are few errors to be found in the text, which is a compliment to the author and aides for their careful collection of information, compilation of data, and painstaking presentation of intricate details of so many chemical processes. The only criticism to be offered by the reviewer is the reduced size of the flow sheets, which

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Professor of Nutrition, Cornell University

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