the countries of Australia, Austria, Canada, England, France, Germany, Holland, Hungary, India, Japan, Northern Ireland, Russia and the United States of America.

The papers are classified into five chapters entitled: I, Chemistry and Physics of Solid Catalysts; II, Homogeneous Catalysis and Related Effects; III, Surface Chemistry and Its Relation to Catalysis; IV, Techniques and Technology of Catalysis; and V, Special Topics in Catalysis.

Most of the modern techniques of catalytic chemistry are represented, including infrared spectroscopy as applied to the adsorbed complex, catalytic reactions confined to single crystallographic faces, surface area measurement, differential thermal data on solid state reactions, magnetic measurements to determine the duration of electron transfer during chemisorption, tracer techniques in mechanism determination, and X-ray and electron diffraction methods for catalyst structure determination.

Systems described include the chromia–alumina cyclization catalysts, silica–alumina cracking catalysts, platinum reforming catalysts, ruthenium, rhodium, palladium and platinum hydrogenation catalysts, alumina and silica–alumina catalysts for the dehydrogenation of alcohols, cobalt carbonyl catalysts for oxonation, molybdena reforming catalysts, and metal chelate hydrogenation catalysts.

Fifty-seven pages of critical discussion from the original conference meetings are included. Well organized author and subject indices (16 pages and 4 pages, respectively) provide a reference system to the contents.

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The Relativistic Gas. By J. L. SYNGE, School of Theoretical Physics, Dublin Institute for Advanced Studies. Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1957. xi + 108 pp. 15.5 × 23 cm. Price, $4.50.

"This little book may be regarded as a supplement to a recent book (by the same author, "Relativity: The Special Theory" (1956)) with the same notation and the same emphasis on Minkowskian geometry. . . . The purpose of this book is to develop in a simple way some formulae for a relativistic gas. . . . It is written for the relativist who wants to know about the behavior of a relativistic gas, rather than for the expert in statistical mechanics" (who wants to know about relativity).

This quotation from the preface fairly states this book's prerequisites, intended audience and aim. Synge limits himself to consideration of classical gases of point particles interacting with zero mean free path (physically contradictory as he notes). The formulae which are derived are not new, but they are derived in a direct and relativistically covariant way. In addition to the distribution function of the ideal relativistic gas, the book treats shock waves with proofs of their causality and irreversibility. In an appendix, Synge shows how his methods can be applied to a more physical system, namely, radiation plus moving matter. An idealized model is used (2 level "atoms," which have no relative motion) and the formulae for the stress tensor which are derived are equated to those of L. H. Thomas.

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Fortschritte der Physikalischen Chemie. Band 1. Diffusion. Methoden der Messung und Auswertung. By Prof. DR. W. JOST, Direktor des Institutes für Physikalische Chemie der Universität Göttingen. Verlag Dr. Dietrich Steinkopff, Holzhofallee 35, Darmstadt, Germany. 1957. x + 177 pp. 15.5 × 23 cm. Price, DM 25, —.

This volume considers both theoretical and experimental aspects of the measurement of diffusion. In his selection of topics, the author has achieved a compact presentation of basic material. The contents of this volume parallel closely the corresponding parts of the author's earlier and more comprehensive treatise ("Diffusion in Solids, Liquids, Gases," by W. Jost, Academic Press, Inc., New York, 1952). However some new material is included to describe recent developments, and the bibliographies at the ends of the chapters include a large number of recent publications which have appeared since the previous volume went to press.

The first chapter, occupying slightly more than half of the book, deals with the differential equations of diffusion and their solutions subject to various initial and boundary conditions. This chapter omits a few topics considered in the corresponding chapter of the author's 1952 book and introduces some new material; examples of the latter include further consideration of concentration-dependent diffusion coefficients and a brief discussion of diffusion in systems containing more than two components. The remaining four chapters are shorter, and deal with the specific cases of diffusion in solids, diffusion in gases, diffusion in liquids, and thermal diffusion. Brief descriptions of experimental procedures for studying these cases of diffusion are given, and tables containing some representative data are included which illustrate the results.

Even a reader who may prefer reading the author's 1952 treatise in English to obtain a survey of the subject of diffusion will find the list of references in the present volume very helpful as a guide to recent literature.

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Volumetric Analysis. Volume III. Titration Methods: Oxidation-Reduction Reactions. I. M. KOLTHOFF, Professor and Head, Division of Analytical Chemistry, University of Minnesota, Minneapolis, Minn., and R. BELCHER, Reader in Analytical Chemistry, the University of Birmingham, Birmingham, England, with the coöperation of V. A. STENGER, Analytical Research Chemist, The Dow Chemical Co., Midland, Mich., and G. MATSUYAMA, Senior Research Chemist, Research Department, Union Oil Co. of California, Brea, Calif. Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1957. ix + 714 pp. 15.5 × 23.5 cm. Price, $15.00.

Because thirty years have elapsed since the last edition of this book, and since no equivalent monograph has appeared in the interim, we can heartily agree with the opening sentence in the Preface, "This third and last volume of "Volumetric Analysis," dealing with oxidation–reduction titrations, is long overdue." The long wait is rewarded because the present volume perpetuates the high standard set by its progenitor, *Massanalyse*.

Following an introductory chapter on general techniques in redox titrations, separate chapters are devoted to applications of the important titrants permanganate ion, ceric ion and dichromate ion. Next follow three chapters on iodometric methods, and separate chapters *seriatim* on the Karl Fischer water titration, potassium iodate titrations, determination of organic compounds with periodate, potassium bromate titrations and titrimetry with hypohalites. Reductometric titrations are then discussed in a separate chapter, and the text concludes with a chapter on miscellaneous titrants.

This arrangement emphasizes the applications of various titrants, rather than the various methods that are available for the determination of a particular element or substance. The latter must be located *via* the Subject Index.

The coverage is not restricted to inorganic analyses, and includes the determination of organic substances and functional groups.

The treatment is comprehensive and critical, and, in general, sufficient procedural detail is given so that the methods can be applied without recourse to the original literature. Not the least of this book's virtues is that the literature has been made a real, living part of the text, as it should be, by placing the citations as footnotes on the pages, where they can be most effectively used. The comprehensiveness of the literature coverage is reflected by the Author Index of more than 2700 names. However the essence of the book's excellence stems not from mere comprehensiveness, but rather from the authoritative manner in which this huge literature has been critically assessed and correlated. Every page reflects the high order of analytical sagacity which characterized the previous editions of this work.