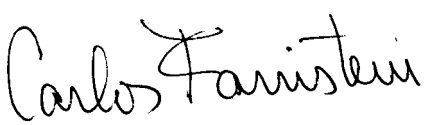
EXPERIMENTAL CRYOPHYSICS

Edited by

F. E. HOARE
Reader in Physics, University of Leeds

L. C. JACKSON
Professor of Physics, Royal Military College, Kingston, Ontario, Canada

N. KURTI
Reader in Physics, University of Oxford; Senior Research Fellow, Brasenose College, Oxford



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PREFACE

This volume is the result of a co-operative effort on the part of the editors and contributors to collect together discussions of many technical problems of interest to those working in the field of low temperature physics. Mathematical investigations related to design problems are given in sufficient detail to make the principles clear and so allow them to be applied to specific problems with ease. Experimental results quoted are those of interest in the design of apparatus and of experiments for low temperature investigations; no attempt is made to review results in this field as a whole. It is recognized that the selection of topics for inclusion, and the degree of detail with which they are treated, is unlikely to meet the requirements of al1 workers. However, the references throughout the book should prove to be good starting points in any literature search on related techniques. We hope, therefore, that these review articles will be of use not only to the newcomer to the field but also to the established experimental worker.

Since the word 'cryophysics' is so economically expressive, and has gained general acceptance since its first use (in this context see *Physics Today*, 1958, volume 11, No. 3, page 19), it was considered appropriate to adopt it in the title of the present work.

The preparation of the book has taken much more time than was expected when it was begun four years ago, and our sincere apologies are due to al1 the authors, and especially to those who made their contributions early. Thanks to their patient and good natured co-operation the articles were revised and added to at the proof stage, so that while much of the text and literature coverage dates from 1957, some important recent developments up to about 1960 could also be included.

The main topics of this book are listed in the table of contents. Some overlap between chapters was found to be unavoidable but it is hoped that this will neither cause confusion nor detract from the usefulness of the book. To facilitate cross reference an identification scheme for sections, equations, figures and tables has been adopted as follows. Three numbers are given in each case; the first is that of the chapter and the second refers to the main subdivision of the chapter. The final number refers to the further division of the text in the case of sections and in the others to the sequential numbering in the chapter; except for sections the final number is enclosed in brackets. The identification number of figures and tables are printed in italic type.

The chief reason for the delay, for which we, the editors, must take the blame, was our desire to make the book a homogeneous entity in which the several chapters and sections are similar in scope and character. We are deeply grateful to al1 our contributors for listening so patiently to our comments, and for adopting so graciously many of our suggestions.

Finally, we would like to record our appreciation of the great courtesy and forbearance shown to us by al1 of Butterworths, often in the most difficult circumstances.

THE EDITORS

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