PHYSICAL PROPERTIES OF HIGH TEMPERATURE SUPERCONDUCTORS I

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Editor

Donald M. Ginsberg

Professor of Physics

University of Illinois at Urbana-Champaign

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This book is dedicated to the many scientists and students who have risen to the high T_c challenge.

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PREFACE

The discovery in 1986 of high temperature superconductivity has produced a flood of experimental and theoretical publications, approximately 10,000 of them. This book maps out some of the main currents in an ocean of papers. We concentrate on the experimentally determined physical properties of these materials, and compare these properties with the predictions of theoretical models.

It was not easy to choose the topics for this book, which is necessarily limited in size. Chapters which would have been desirable include nuclear magnetic and quadrupole resonance, magnetic ordering, microstructure, electron tunneling, photoemission, and thermoelectric properties in the mixed state. We expect this book to be the first in a series of volumes to be published by World Scientific on the physical properties of high temperature superconductors. Later volumes will incorporate some of the missing subjects, as well as further developments in some of the topics which are covered here.

The authors of this book have made a significant sacrifice, taking time from their own research during a period of very great activity. They have done a job which is extremely difficult because of the deluge of preprints and articles. There is no way the authors could be aware of all the worthy manuscripts which have been written, and certainly it has been impossible for them to include references to all the literature in the field. Indeed, only by leaving out a great deal could they give each chapter a form which can be readily grasped. We ask you, the reader, to be understanding of these problems if you discover that some of your own work has gone unmentioned.

Donald M. Ginsberg
Urbana, Illinois
Nov. 1, 1988

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