

<<固态磁性导论>>

图书基本信息

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内容概要

The present greatly enlarged version was mainly written during a sabbatical at the university of Uppsala during 2000. The aim of the book is to present a largely phenomenological introduction to the field of solid state magnetism at a relatively elementary level. The two basic concepts of magnetism in solids namely the localized and the delocalized description are presented as the extreme approaches. The true nature of magnetism lies , as often in life , somewhere in between , sometimes showing a tendency towards the more localized side , sometimes tending to the delocalized side. It is perhaps this mixing of concepts which makes magnetism appear complicated and difficult. Another source of confusion is the different language used by theoreticians and experimentalists. I have tried very hard to clarify these rather more semantic problems and to use a uniform nomenclature throughout the book. It is my belief and my experience that the approach presented here provides a useful introduction not only for the physicist , but also for the interested reader coming from fields like chemistry , electrical engineering or even geo-sciences. The mathematical concepts used are kept rather simple and hardly ever go beyond an undergraduate course in mathematics for physicists , chemists or engineering. Since the book emerged from a lecture course I have given at Vienna University of Technology for the last 15 years , the chapters in the book are not completely self-contained. The first-time reader is thus advised to read the chapters in the sequence that they appear in the book. It is my sincere hope that after having read this book the reader will agree that for once the Encyclopedia Britannica is in error when it states Few subjects in , science are more difficult to understand , than magnetism , (Encyclopedia Britannica , 15th edition 1989) .

The present book does not attempt to cover the whole field of solid state magnetism , but tries to provide an overview by selecting special topics. The idea is to create an interest in this fascinating field in which quantum mechanics , thermodynamics and computer simulations join forces to explain "Magnetism in the Solid State".

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媒体关注与评论

Since this book has been so well received by the scientific community that the first printing has been sold within three years , I was asked 'oy the publishers to produce an updated version for a second printing. I am grateful to all colleagues (mainly students) who reported typos , ambiguous or unclear formulations etc. I considered all of them seriously and thus made a number of changes , which I hope will improve the text. —

—Peter Mohn

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