<<普适弛豫定律>>

图书基本信息

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前言

Fifty years ago, I was sitting in a class at Jiaotong University inShanghai, China taking a course called "DIELECTRICPHYSICS" lectured by the late Professor Chen Jidan. I was oneof the thirty students sitting in his class taking the course. Thiswas the first time DIELECTRIC study was introduced toChinese Universities. Since then, dielectric study became one ofthe major concerns of the science and technology community ofChina in developing its electrical and electronic engineering.Fifty years past, thousands of students, graduate students,professors, scientists and engineers have been engaged in thestudies and applications of dielectrics in this country. In the pastfifty years, the Xi'an Jiaotong University, Shanghai JiaotongUniversity, Electronic Science and Technological University,Shandong University, Zhongshan University, SichuanUniversity, Nanjing University, Tongji University and theShanghai Institute of Ceramics, the Beijing Institute of Physicsof the Chinese Academy of Sciences were heavily involved indielectric studies and gave their various contributions to thedevelopment of dielectric study in China. Now, China isprobably one of the most important countries in dielectric studiesamong the list of the ex Soviet Union and the United Kingdom.Late Professor Chen was the pioneer and founder ofDIELECTRIC studies in China. The staidness, sureness andsolemnness of his academic attitude are the invaluable treasureof the Chinese dielectric community. I would like to take the chance of writing this preface to pay my sincere respect to the late Professor Chen.

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内容概要

本书是作者所著《固体中的介电弛豫》一书的姊妹篇，其内容是前作的延续和深化，被电介质领域的许多研究者奉为经典。
作者在对普适介电弛豫进行系统描述的基础上，将其概念外推到其他传统电介质研究不涉及的弛豫过程中。
书中介绍了“普适性”的含义、“平坦”的介电响应和低频介电弥散现象，讨论了半导体中的介电响应，以及发光、化学反应和力学弛豫等非介电过程的弛豫现象，并从理论角度对上述实验现象进行了解释。
本书可作为物理、电子、材料、电气等相关专业的教师、研究生和科研人员的参考书。

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作者简介

A.K.琼克（A.K.Jonscher，1922-2005），生于波兰华沙，1949年在伦敦大学玛丽皇后学院以一级荣誉学士学位毕业，并在该校Harry Tropper教授的指导下于1952年获得博士学位，1951年起在GEC研究实验室工作，从事半导体器件物理原理方面的研究工作，1962年以Reader身份加入伦敦大学切尔西学院，1965年成为固态电子学教授，1987年成为伦敦大学皇家霍洛威与贝德福德斯学院荣誉教授，1990年受邀为IEEE“普适介电响应”杰出怀特海荣誉讲席。
琼克教授在介电弛豫研究方面具有很深的造诣，他于1983年和1996年分别出版的分别出版的学术专著《固体中的介电弛豫》和《普适弛豫定律》，在国际学术界享有盛誉。

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书籍目录

章节摘录

DIELECTRICS AND INSULATORSThe use of electrical insulation is as old as the science and technologyof electrical phenomena; it goes back at least a century and a half,while the recognition of specifically electrostatic manifestations ofelectrification goes back to antiquity. Systematic investigations ofdielectric properties may be traced back to the 1870's.The accumulated experimental and theoretical material is vast andfrom an early stage on it was possible to discern two essentiallycomplementary approaches to this wide-ranging subject- the studyand development of insulators and of dielectrics. In this classifi-cation, insulators are materials used to prevent the flow of currentwhere it is not desired, especially in the context of electrical andelectronic engineering, and the principal interest in them lies inachieving the lowest possible electrical conduction coupled with themaximum resistance to destructive breakdown in high electric fields.Other factors such as long life, low cost, chemical inertness and the ability to withstand elevated temperatures may be added to the long list of technical specifications which must be met by modern insulating materials working sometimes under extreme external stresses. It is understandable that engineers and materials scientists searching for insulating materials suitable for specific applications were less concerned with the detailed physical mechanisms gov- erning the behaviour of these materials, provided that their char- acterisation in terms of clearly defined parameters could be achieved reliably and simply. This order of priorities remains true to this day and the chief emphasis in electrical insulation science falls on the synthesis of materials and their characterisation. By contrast with the insulation aspect, dielectric phenomena are at once more general and more fundamental - after all, insulators are dielectrics - and are concerned more intimately with the micro- scopic mechanisms of dielectric polarisation and include, especially, the transient behaviour under time-varying electric fields.

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《普适弛豫定律(影印版)》可作为物理、电子、材料、电气等相关专业的教师、研究生和科研人员的参考书。

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