第一图书网, tushu007.com

<<磁性半导体中的巨大磁致电阻及相分离COLO>>

图书基本信息

书名:<<磁性半导体中的巨大磁致电阻及相分离COLOSSAL MAGNETORESISTANCE AND PHASE SEPARATION IN MAGNETIC SEMICONDUCTORS>>

13位ISBN编号:9781860942952

10位ISBN编号: 1860942954

出版时间:2002-12

出版时间:Aspen Publishers

作者: Nagaev, Eduard L.

页数:457

版权说明:本站所提供下载的PDF图书仅提供预览和简介,请支持正版图书。

更多资源请访问:http://www.tushu007.com

第一图书网, tushu007.com <<磁性半导体中的巨大磁致电阻及相分离COLO>>

内容概要

Colossal magnetoresistance materials, to which manganites and conventional ferromagnetic semiconductors belong, draw great attention because of their intriguing physical properties and the excellent prospects for their practical applications in electronic devices. In addition, magnetic semiconductors are basic materials for high-temperature conductors, and it is impossible to construct a theory of the latter without elucidating properties of the former. This book presents theoretical and experimental results on manganites and conventional magnetic semiconductors, with emphasis on the former. It is addressed mainly to researchers dealing with manganites or high-temperature super-conductors, but is also useful for undergraduate and graduate students.

第一图书网, tushu007.com

<<磁性半导体中的巨大磁致电阻及相分离COLO>>

书籍目录

AppreciationPrefaceChapter 1 Introduction and Necessary Information about Non-magnetic Semiconductors and Insulating Magnetic Systems 1.1. Introduction 1.1.1. Colossal magnetoresistance against giant magnetoresistance 1.1.2. Colossal magnetoresistance materials and other magnetic semiconductors 1.1.3. Magnetic semiconductors as strongly correlated electron systems. The simple and double exchange 1.1.4. From antiferromagnetic semiconductors to ferromagnetic semiconductors. Phase separation 1.1.5. The magnetoimpurity theory for the colossal magnetoresistance of ferromagnetic semiconductors 1.1.6. The resistivity peak and colossal magnetoresistance in the manganites 1.2. Some basic notions of semiconductor 1.2.1. The single-electron approach 1.2.2. Polarons 1.2.3. Mott delocalisation of charge physics 1.2.4. Degenerate semiconductors 1.3 Some basic notions of the physics of magnetic phenomena carriers 1.3.1. Magnetic Hamiltonians for orbitally non-degenerate and Jahn-Teller insulating systems 1.3.2. Properties of ferromagnets 1.3.3. Collinear and canted antiferromagnetic systems 1.3.4. Antiferromagnetic systems in magnetic field. Metamagnetism and "antimetamagnetism". Chapter 2 Principles of Theory of Conducting Magnetic Systems 2.1. Magnetic Hamiltonians of conducting magnetic systems ... 2.2. Effect of magnetic ordering on energy of charge carders. 2.3. Double exchange 2.3.1. Classical spins 2.3.2. Quantum spins 2.4. RKKY indirect exchange 2.5. Non-Heisenberg exchange in magnetic semiconductorsChapter 3 Non-degenerate Ferromagnetic Semiconductors 3.1. Experimental data 3.1.1. Magnetic and crystallographic properties 3.1.2. Optical properties 3.1.3. Conductivity and colossal magnetoresistance 3.2. Theory: free charge carrier energy spectrum and giant optical red shift 3.2.1. Spin 3.2.2. The vicinity of the Curie point and the paramagnetic region (simple exchange) wave region ... Chapter 4 Non-degenerate Antiferromagnetic Semiconductors and Self-trapped StatesChapter 5 Degenerate Ferrmagnetic Semiconductors Chapter 6 Degenerate Antiferronmagnetic Semiconductiors and Phase SeparationChapter 7 Lanthanum ManganitesChapter 8 Other ManganitesChapter 9 Specific Effects and Theory of ManganitesAppendix A Double exchange Hamiltonian for quantum spinsBibliography Index

第一图书网, tushu007.com

<<磁性半导体中的巨大磁致电阻及相分离COLO>>

版权说明

本站所提供下载的PDF图书仅提供预览和简介,请支持正版图书。

更多资源请访问:http://www.tushu007.com