1. Record Nr. UNINA9910780750103321

Autore	Irkhin V. IU (Valentin IUrevich), <1960->
Titolo	Electronic structure, correlation effects and physical properties of d- and f-metals and their compounds [[electronic resource] /] / V.Yu. Irkhin and Yu.P. Irkhin
Pubbl/distr/stampa	Cambridge, : Cambridge International Science Pub., 2007
ISBN	1-907343-60-1 1-904602-96-7
Descrizione fisica	1 online resource (463 p.)
Altri autori (Persone)	IrkhinYu. P <1930-> (Yury P.)
Soggetti	Electronic structure Transition metals Transition metal compounds Free electron theory of metals Energy-band theory of solids
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	""PREFACE""; ""CONTENTS""; ""1. INTRODUCTION""; ""1.1 PARTIALLY FILLED ATOMIC SHELLS AND ELECTRON LOCALIZATION IN TRANSITION METALS""; ""1.2 ATOMIC AND BAND APPROACHES IN THE TRANSITION ELEMENT THEORY""; ""1.3 CRYSTAL FIELD AND ORBITAL MOMENTA IN SOLIDS""; ""2. BAND THEORY""; ""2.1 ORTHOGONALIZED PLANE WAVE METHODAND PSEUDOPOTENTIAL""; ""2.2 AUGMENTED PLANE WAVE (APW) AND KORRINGAa€?KOHNa€?ROSTOKER (KKR) METHODS""; ""2.3 THE HARTREE-FOCK-SLATER AND DENSITY FUNCTIONAL APPROACHES TO THE PROBLEM OF ELECTRON CORRELATIONS""; ""2.4 DISCUSSION OF BAND CALCULATION RESULTS"" ""2.5 EXPERIMENTAL INVESTIGATIONS OF BAND STRUCTURE: SPECTRAL DATA""""2.6 BAND CALCULATIONS OF RARE EARTHSAND ACTINIDES""; ""2.7 FERMI SURFACE""; ""2.7.1 Methods of Fermi surface investigation and de Haas-van Alphen effect""; ""2.7.2 Experimental and theoretical results on the Fermi surfaces""; ""3. THERMODYNAMIC PROPERTIES""; ""3.1 COHESIVE ENERGY AND RELATED PROPERTIES""; ""3.2 CRYSTAL STRUCTURE""; ""3.3 SPECIFIC HEAT""; ""3.3.1 Lattice specific heat"";

""3.3.2 Electronic specific heat""; ""3.3.3 Specific heat of magnetic metals""; ""4. MAGNETIC PROPERTIES""
""4.1 EXCHANGE INTERACTIONS AND THE HEISENBERG MODEL FOR LOCALIZED SPINS"""""4.2 MAGNETIC SUSCEPTIBILITY OF PARAMAGNETICTRANSITION METALS""; ""4.3 ITINERANT ELECTRON FERROMAGNETISM AND THE STONER THEORY""; ""4.4 SPIN-FLUCTUATION THEORIES""; ""4.5 ELECTRONIC STRUCTURE AND PROPERTIES OF HALF-METALLIC FERROMAGNETS""; ""4.6 MAGNETISM OF HIGHLY-CORRELATED d-SYSTEMS""; ""4.7 MAGNETISM OF RARE EARTHS AND ACTINIDES""; ""4.8 MAGNETIC ANISOTROPY""; ""4.8.1 Quenching of orbital momenta by periodic lattice potential and magnetic anisotropy of d-metals""; ""4.8.2 Magnetic anisotropy of rare earths""
""5. TRANSPORT PROPERTIES"""""5.1 GENERAL CLASSIFICATION OF TRANSPORT PHENOMENA""; ""5.2 CALCULATION OF TRANSPORT COEFFICIENTS""; ""5.3 RESISTIVITY""; ""5.3.1 Electrona€?electron scattering""; ""5.3.2 Mott sa€?d scattering mechanism""; ""5.3.3 Resistivity of magnetic metals""; ""5.3.4 Resistivity of transition metal alloys""; ""5.3.5 Two-current model of ferromagnetic metals""; ""5.4 THERMOELECTRIC POWER""; ""5.5 THE HALL EFFECT""; ""5.6 MAGNETORESISTIVITY""; ""5.7 ANOMALOUS TRANSPORT EFFECTS IN FERROMAGNETIC METALS""; ""5.7.1 The extraordinary Hall effect""
""5.7.2 Magnetoresistivity in the presence of spontaneous magnetization"""""5.7.3 Magnetooptical effects""; ""6. THE KONDO EFFECT AND PROPERTIES OF ANOMALOUS d- AND f-COMPOUNDS""; ""6.1 THE ONE-CENTRE KONDO EFFECT""; ""6.2 THE KONDO TEMPERATURE FOR d-IMPURITIES""; ""6.3 SPIN DYNAMICS AND ELECTRONIC PROPERTIES OF KONDO LATTICES""; ""6.4 GROUND STATE OF THE KONDO LATTICES""; ""6.5 INTERMEDIATE VALENCE SYSTEMS""; ""6.6 MAGNETIC ORDERING IN KONDO LATTICES AND HEAVY-FERMION COMPOUNDS""; ""6.7 CURRENT CARRIERS IN A TWO-DIMENSIONAL ANTIFERROMAGNET""
""6.8 SPIN-LIQUID STATE IN SYSTEMS WITH SPIN AND CHARGE DEGREES OF FREEDOM""