1. Record Nr. UNINA9910616390103321

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Titolo	Solid State Physics / / by Vimal Kumar Jain
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2022
ISBN	9783030960179 9783030960162
Edizione	[3rd ed. 2022.]
Descrizione fisica	1 online resource (550 pages)
Collana	Physics and Astronomy Series
Disciplina	530.41
Soggetti	Optical materials Condensed matter Quantum theory Semiconductors Solid state physics Optical Materials Condensed Matter Physics Quantum Physics Electronic Devices
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Crystal Structure -- Chemical Bonding in Solids -- Defects in Solids -- Elecments of Quantum Mechanics -- X-Ray Diffraction -- Lattice Vibrations -- Thermal Properties of Solids -- Free Electron Theory of Metals -- Band Theory -- Semiconductors -- Dielectric Properties of Solids -- Magnetic Properties of Matter -- Magnetic Resonance -- Superconductivity -- Nanomaterials -- Optical Properties -- Semiconductor Devices.
Sommario/riassunto	The book has been designed as a textbook for graduate and postgraduate students of physics, material science, and engineering. This is the third edition of the textbook, that is updated to reflect recent works in the field. In this edition, some new topics have been introduced while some of the existing topics like phonons, Drude – Lorentz model, Fermi levels, electrons, and holes, etc. are modified.

Moreover, the book has complete information on semiconductor devices like tunnel diode, Gunn diode, photodiode, photoconductive diode, varactor diode, solar cell, LED, semiconductor lasers, and semiconductor detectors. All the chapters have been supplemented by solved and unsolved examples. Some of the chapters illustrate areas of current interest in solid-state physics to give the student practical working knowledge of the subject text in a simple and lucid manner. There is a fair amount of detail in the examples and derivations given in the text. Each section of the book has exercises toreinforce the concepts, and problems have been added at the end of each chapter. The detailed coverage and pedagogical tools make this an ideal textbook for students and researchers enrolled in graduate and postgraduate courses of physics, material science, and engineering.