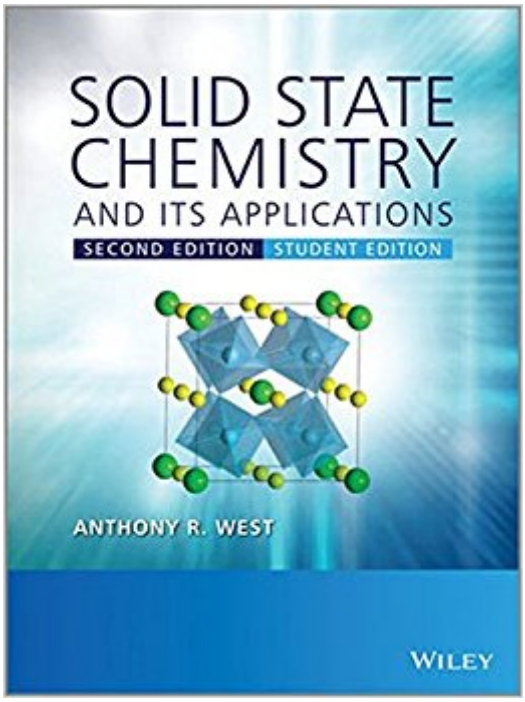
Solid State Chemistry And Its Applications



Synopsis

Solid State Chemistry and its Applications, 2nd Edition: Student Edition is an extensive update and sequel to the bestselling textbook Basic Solid State Chemistry, the classic text for undergraduate teaching in solid state chemistry worldwide. Solid state chemistry lies at the heart of many significant scientific advances from recent decades, including the discovery of high-temperature superconductors, new forms of carbon and countless other developments in the synthesis, characterisation and applications of inorganic materials. Looking forward, solid state chemistry will be crucial for the development of new functional materials in areas such as energy, catalysis and electronic materials. This revised edition of Basic Solid State Chemistry has been completely rewritten and expanded to present an up-to-date account of the essential topics and recent developments in this exciting field of inorganic chemistry. Each section commences with a gentle introduction, covering basic principles, progressing seamlessly to a more advanced level in order to present a comprehensive overview of the subject.Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â This new Student Edition includes the following updates and new features: Expanded coverage of bonding in solids, including a new section on covalent bonding and more extensive treatment of metallic bonding. Synthetic methods are covered extensively and new topics include microwave synthesis, combinatorial synthesis, mechano-synthesis, atomic layer deposition and spray pyrolysis. Revised coverage of electrical, magnetic and optical properties, with additional material on semiconductors, giant and colossal magnetoresistance, multiferroics, LEDs, fibre optics and solar cells, lasers, graphene and quasicrystals. Extended chapters on crystal defects and characterisation techniques. Published in full colour to aid comprehension. Extensive coverage of crystal structures for important families of inorganic solids is complemented by access to CrystalMakerÃ Â® visualization software, allowing readers to view and rotate over 100 crystal structures in three dimensions. Solutions to exercises and supplementary lecture material are available online. Solid State Chemistry and its Applications, 2nd Edition: Student Edition is a must-have textbook for any undergraduate or new research worker studying solid state chemistry.

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Customer Reviews

Solid State Chemistry and its Applications, 2nd Edition: Student Edition is an extensive update and sequel to the bestselling textbook Basic Solid State Chemistry, the classic text for undergraduate teaching in solid state chemistry worldwide.Ã Â Solid state chemistry lies at the heart of many significant scientific advances from recent decades, including the discovery of high-temperature superconductors, new forms of carbon and countless other developments in the synthesis, characterisation and applications of inorganic materials. Looking forward, solid state chemistry will be crucial for the development of new functional materials in areas such as energy, catalysis and electronic materials. This revised edition of Basic Solid State Chemistry has been completely rewritten and expanded to present an up-to-date account of the essential topics and recent developments in this exciting field of inorganic chemistry. Each section commences with a gentle introduction, covering basic principles, progressing seamlessly to a more advanced level in order to present a comprehensive overview of the subject.Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â Ã Â This new Student Edition includes the following updates and new features: Expanded coverage of bonding in solids, including a new section on covalent bonding and more extensive treatment of metallic bonding. Synthetic methods are covered extensively and new topics include microwave synthesis, combinatorial synthesis, mechano-synthesis, atomic layer deposition and spray pyrolysis. Revised coverage of electrical, magnetic and optical properties, with additional material on semiconductors, giant and colossal magnetoresistance, multiferroics, LEDs, fibre optics and solar cells, lasers, graphene and quasicrystals. Extended chapters on crystal defects and characterisation techniques. Published in full colour to aid comprehension. Extensive coverage of crystal structures for important families of inorganic solids is complemented by access to CrystalMakerÃ Â® visualization software, allowing readers to view and rotate over 100 crystal structures in three dimensions. Solutions to exercises and supplementary lecture material are

available online. Solid State Chemistry and its Applications, 2nd Edition: Student Edition is a must-have textbook for any undergraduate or new research worker studying solid state chemistry.

Anthony West is Professor of Electroceramics and Solid State Chemistry in the Department of Materials Science & Engineering at Sheffield University. Having spent most of his academic career at the University of Aberdeen, where he developed a lifetime interest in the then-emerging field of solid state chemistry with special interest in synthesis of new oxide materials, their crystal structures and electrical properties, Professor West moved to Sheffield University in 1999 as Head of Department, a post he held until 2007. In addition to writing several bestselling books on Solid State Chemistry, Tony was founding editor of the Journal of Materials Chemistry and founding Chairman of the Materials Chemistry Forum of the Royal Society of Chemistry. He is a former President of the Inorganic Chemistry Division of IUPAC.Professor West is a Fellow of the RSC, the Institute of Physics, the Institute of Materials, Mineral and Mining, and the Royal Society of Edinburgh. He previously received an Industrial Award in Solid State Chemistry from the RSC, 1996, the Griffiths Medal and Prize from the IOM3, 2008, the Epsilon de Oro Award from the Spanish Society of Glass and Ceramics, 2007, and the Chemical Record Lectureship from the Chemical Societies of Japan, 2009. He has been awarded the 2013 RSC John B. Goodenough Award in Materials Chemistry, a lifelong recognition award for his contributions to the field.

This book is an excellent and up-to-date survey of the field of solid-state chemistry. The text is readable, and essentially free of typos and other distractions. The sections on crystal lattices and structure are very well illustrated -- an especially important feature, since an understanding of crystal chemistry requires the student to have a good grasp of 3-D features. The section on bonding develops material at the detailed atomic level, and then uses the concepts of Molecular Orbitals (MOs), HOMOs, and LUMOs to explain bonding concepts. The sections on Electrical Properties, Magnetic Properties, and Optical Properties are well-done (and again well-illustrated), and would provide excellent material for understanding semiconductors, dielectrics, and lasers. All in all, a superb addition to the chemistry professional’s bookshelf.

Some time ago, I got the previous edition of this book by Anthony R. West, and in that lapse, it clearly satisfy my demands on the topics of the solid state chemistry. What I really love about this new edition (that I’m currently using for my classes) is that is colored. Believe me, that visuals are important in these kind of topics if you really wish to appreciate all the details in crystal structures.

Good textbook for inorganic chemistry!

Great textbook for solid state chemistry.

good

I like it very much

Book was in good condition but man is it a hard read

got what i expected

Monographs on Analytical Chemistry and Its Applications)