

1. Record Nr.	UNINA9910814829503321
Autore	Glazer A. M (Anthony Michael)
Titolo	Space groups for solid state scientists // Gerald Burns, A.M. Glazer
Pubbl/distr/stampa	Amsterdam ; ; Boston, : Elsevier, c2013 Waltham, MA : , : Academic Press, , 2013
ISBN	1-283-94152-X 0-12-394615-8
Edizione	[3rd ed.]
Descrizione fisica	1 online resource (xiii, 408 pages) : illustrations (some color)
Collana	Gale eBooks
Disciplina	530.4/1
Soggetti	Solid state physics Space groups
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Previous ed. by Gerald Burns.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Space Groups for Solid State Scientists; Copyright; Contents; Preface; Chapter 1 Point Symmetry Operations; WHAT IS SYMMETRY?; 1.1. SYMMETRY OPERATIONS; 1.2. POINT SYMMETRY OPERATIONS; 1.3. HEXAGONAL COORDINATES; Chapter 2 Crystal Systems; HAUY'S LEGACY; 2.1. LATTICE; 2.2. UNIT CELL; 2.3. CRYSTAL STRUCTURE; 2.4. CRYSTAL SYSTEMS; 2.5. SUMMARY; Chapter 3 Bravais Lattices; SYMMETRY AND LATTICES; 3.1. CENTERING OF LATTICES; 3.2. THE 14 BRAVAIS LATTICES; 3.3. PRIMITIVE CELLS OF THE 14 BRAVAIS LATTICES; 3.4. THE WIGNER-SEITZ UNIT CELL; 3.5. TWO-DIMENSIONAL LATTICES Chapter 4 Crystallographic Point GroupsINTRODUCTION TO GROUPS; 4.1. DEVELOPMENT OF CRYSTALLOGRAPHIC POINT GROUPS; 4.2. THE POINT GROUPS FOR EACH CRYSTAL SYSTEM; 4.3. THE 32 POINT GROUPS FROM HOLOHEDRIES; 4.4. LAUE CLASSES AND GROUPS; 4.5. POINT GROUP NOTATION; Chapter 5 Development of Space Groups; SPACE GROUP OPERATORS; 5.1. THE SYMMORPHIC SPACE GROUPS; 5.2. NON-SYMMORPHIC OPERATIONS; 5.3. POINT GROUP OF A SPACE GROUP; 5.4. SPACE GROUPS; 5.5. DERIVATION OF SPACE GROUPS; 5.6. SPACE GROUP CLASSIFICATIONS; 5.7. TWO-DIMENSIONAL SPACE GROUPS; 5.8. SUBPERIODIC GROUPS; Chapter 6 Reading the Tables WHAT DOES THE ITA TELL US?6.1. CRYSTAL STRUCTURE AND SPACE

GROUPS; 6.2. 'TYPICAL' PAGES OF THE ITA; 6.3. EXAMPLE PAGES FROM THE ITA; 6.4. SUBGROUPS AND SUPERGROUPS; 6.5. SPACE GROUP SYMMETRY OPERATIONS; 6.6. HALL SPACE GROUP SYMBOLS; Chapter 7 Space Group Applications; AND NOW ATOMS; 7.1. FACE-CENTERED CUBIC STRUCTURES; 7.2. PRIMITIVE CUBIC STRUCTURES; 7.3. BODY-CENTERED CUBIC STRUCTURES; 7.4. DIAMOND STRUCTURE; 7.5. SPINEL STRUCTURE; 7.6. ZINC SULPHIDE STRUCTURE; 7.7. CHALCOPYRITE; 7.8. SEMICONDUCTOR SUPERLATTICES; 7.9. STRUCTURAL PHASE TRANSITIONS IN CRYSTALS; 7.10. DISPLACIVE SPTS
 8.5. BLACK AND WHITE SPACE GROUPS; 8.6. MAGNETIC SPACE GROUPS; 8.7. EXAMPLES OF MAGNETIC STRUCTURES; 8.8. REPRESENTATION METHOD; 8.9. OG/BNS MAGNETIC GROUP SYMBOLS; Appendix 1 Matrices Representing the Symmetry Operations; JONES' FAITHFUL REPRESENTATION SYMBOLS; Appendix 2 Crystal Families, Systems, and Bravais Lattices; Appendix 3 The 14 Bravais Lattices; 24 WIGNER-SEITZ CELLS; Appendix 4 The 32 Crystallographic Point Groups; Appendix 5 Diagrams for the 32 Point Groups; STEREOGRAMS; SOME SHAPES ILLUSTRATING THE 32 POINT GROUPS; Appendix 6 Symbols; SYMBOLS OF SYMMETRY PLANES
 SYMBOLS OF SYMMETRY AXES

Sommario/riassunto

This comprehensively revised - essentially rewritten - new edition of the 1990 edition (described as ""extremely useful"" by MATHEMATICAL REVIEWS and as ""understandable and comprehensive"" by Scitech) guides readers through the dense array of mathematical information in the International Tables Volume A. Thus, most scientists seeking to understand a crystal structure publication can do this from this book without necessarily having to consult the International Tables themselves. This remains the only book aimed at non-crystallographers devoted to teaching them about crystallo
