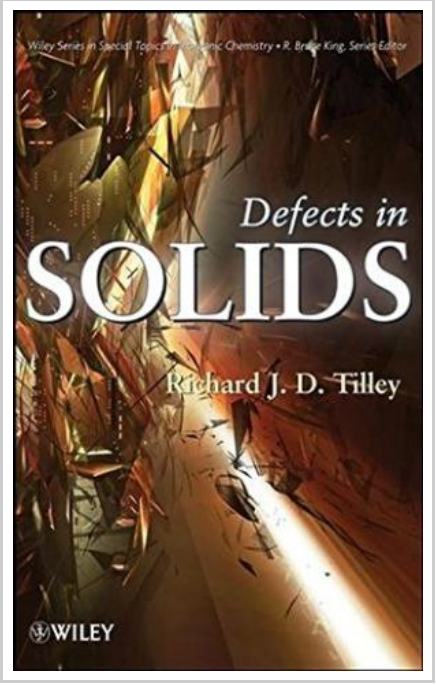

Defects in Solids

By Tilley, Richard J. D.

Wiley-Interscience, 2008. Book Condition: New. Brand New, Unread Copy in Perfect Condition. A+ Customer Service! Summary: Preface.1. Point Defects.1.1 Introduction.1.2 Point and Electronic Defects in Crystalline Solids.1.3 Electronic Properties: Doped Silicon and Germanium as Examples.1.4 Optical Properties: F Centers and Ruby as Examples.1.5 Bulk Properties.1.6 Thermoelectric Properties: The Seebeck Coefficient as an Example.1.7 Point Defect Notation.1.8 Charges on Defects.1.9 Balanced Populations of Point Defects: Schottky and Frenkel Defects.1.10 Antisite Defects.1.11 Defect Formation and Reaction Equations.1.12 Combinations of Point Defects in Pure Materials.1.13 Structural Consequences of Point Defect Populations.1.14 Answers to Introductory Questions.Problems and Exercises.References.Further Reading.2. Intrinsic Point Defects in Stoichiometric Compounds.2.1 Equilibrium Population of Vacancies in a Monatomic Crystal.2.2 Equilibrium Population of Self-Interstitials in a Monatomic Crystal.2.3 Equilibrium Population of Schottky Defects in a Crystal.2.4 Lithium Iodide Battery.2.5 Equilibrium Population of Frenkel Defects in a Crystal.2.6 Photographic Film.2.7 Photochromic Glasses.2.8 Equilibrium Population of Antisite Defects in a Crystal.2.9 Intrinsic Defects: Trends and Further Considerations.2.10 Computation of Defect Energies.2.11 Answers to Introductory Questions.Problems and Exercises.References.Further Reading.3. Extended Defects.3.1 Dislocations.3.2 Edge Dislocations.3.3 Screw Dislocations.3.4 Mixed Dislocations.3.5 Unit and Partial Dislocations.3.6 Multiplication of Dislocations.3.7 Interaction of Dislocations and Point Defects.3.8 Dislocations in Nonmetallic Crystals.3.9 Internal Boundaries.3.10 Low-Angle Grain

Reviews

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