



Metallurgical Science for Failure Analysis and Nde Engineers (Including Descriptive Thermodynamics) (Hardback)

By J W Bell

Dog Ear Publishing, United States, 2013. Hardback. Book Condition: New. 280 x 216 mm. Language: English . Brand New Book ***** Print on Demand *****. This text is intended for use in a one-semester, undergraduate course in metallurgy. The goal is to provide simple but practical explanations of the scientific principles which govern metallurgy through the use of abundant illustrations. Beginning with a concise review of key concepts, the first section covers the atom's structure (the planetary model through cursory concepts of quantum mechanics), the arrangement of the periodic table of elements, and concludes with an explanation of atomic bonding. The second section examines the three primary metallic crystals, Miller/Miller-Bravais directions and indices, crystalline imperfections, and the important topic of phase diagrams. Mechanical metallurgy leads off the final section, followed by ferrous metallurgy, before ending with a brief overview of electrochemical corrosion. Also included in this revised edition is a descriptive explanation of thermodynamics and an optional section on statistical quality control. And yet, while many formulas are presented, only a basic understanding of algebra is required; just as the more involved concepts of chemistry and thermodynamics have been kept to a minimum. J .W. Bell did undergraduate studies in...

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