
Band Theory and Electronic Properties of Solids (Oxford Master Series in Physics) by John Singleton Paperback $70.00. Temporarily out of stock. Ships from and sold by Amazon.com. Great book for me (in the nanomaterial field). It filled a lot of vacancies in my understanding of the optical properties of the materials. It also seems to be up to date. Read more. 4.4 Optical Properties and the Fermi Surface 99 Problems 106 References and Further Reading 107 Chapter 5 Interband Transitions 5.1 Periodic Perturbation 108 5.2 Direct I; nterband Transitions 110 5.3 Joint Density of States and Critical Points 116 5.4 Direct Transitions in Germanium 122 5.5 Direct Transitions in Silver: Effects of Temperature and Alloying 5.6 Indirect. PREFACE The present book attempts to fill a need for a fundamental textbook which explains the optical properties of solids. It is based on two short courses I gave in the Department of Applied Science and a series of fifteen lectures at Chalmers Tekniska Hogskola, Goteborg, Sweden presented at the invitation of Professors Stig Hagstrom, Gosta Brogren, and H. P. Myers. As far as practicable books will be reviewed in a country different from that of publication. Optical properties of solids. Edited by F. ABEL’S. Pp. The book should be particularly useful to students com-mencing optical work on normal modes of vibration, be-cause the text is unusually clear and gives adequate detail for the student to follow. Unfortunately the book cannot be recommended as pro-viding a broadly based survey of the infrared and Raman spectra of crystals. There are many topics for which infrared and Raman spectra have and do provide vital results but which are not included. Optical Properties of Solids. January 2007. DOI: 10.1007/978-3-540-34933-4_10. In book: Solid State Physics. Authors: James D. Patterson. The physical significance of the quadrupole-electric tensor for the optical properties of nonmagnetic crystals is discussed. Some general symmetry properties between the optical material tensors are derived. As an example it is shown that the quadrupole-electric tensor induces the ellipticity of light which is reflected from crystals of the non centrosymmetric cubic classes 23 and 43m.