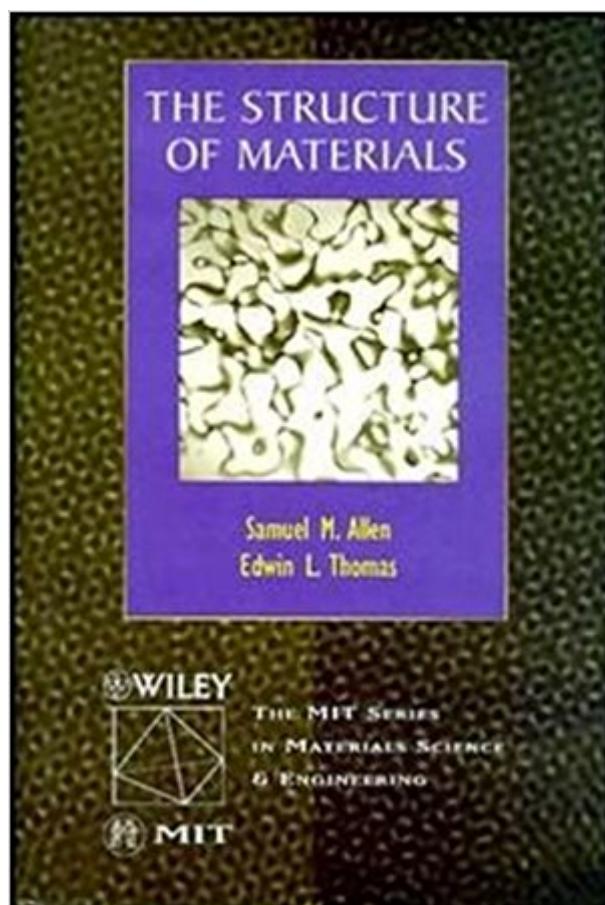


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# The Structure Of Materials (Mit Series In Materials Science And Engineering)



## Synopsis

Are You Looking for a Unified and Concise Approach to Teaching and Learning the Structure of Materials? Allen and Thomas present information in a manner consistent with the way future scientists and engineers will be required to think about materials' selection, design, and use. Students will learn the fundamentals of three different states of condensed matter-glasses, crystals, and liquid crystals-and develop a set of tools for describing all of them. Above all, they'll gain a better understanding of the principles of structure common to all materials. Key concepts, such as symmetry theory, are introduced and applied to provide a common viewpoint for describing structures of ceramic, metallic, and polymeric materials. Structure-sensitive properties of real materials are introduced. The text also includes a variety of worked example problems. Other texts available in the MIT Series: Thermodynamics of Materials, Vol I, Ragone, 30885-4 Thermodynamics of Materials, Vol II: Kinetics, Ragone, 30886-2 Physical Ceramics: Principles for Ceramics Science and Engineering, Chiang, Birnie, Kingery, 59873-9 Electronic Properties of Engineering Materials, Livingston, 31627-X

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## Customer Reviews

In The Structure of Materials, Allen and Thomas develop universal structural descriptors for the states of condensed matter that comprise materials: liquids, glasses, crystals, liquid crystals, and quasicrystals. They present and copiously illustrate many examples of detailed atomic

arrangements and bonding for both organic and inorganic materials. Structure's connection to material properties and processing is treated along with important technological applications. Hierarchical structures spanning the nano- to macro-scale and their relevance in commercial materials are depicted. The authors describe in detail all forms of symmetry and their consequences for physical properties. Imperfections in both crystalline and liquid-crystalline materials and their strong influence on properties are also discussed. The hundreds of illustrations, worked example problems, and numerous exercises demonstrate the application of the principles of structure to a variety of material types. All readers-from students to researchers newly entering the field of materials science and engineering-will benefit from the broad coverage of topics, extensive references, and additional reading suggestions.

Are You Looking for a Unified and Concise Approach to Teaching and Learning the Structure of Materials? Allen and Thomas present information in a manner consistent with the way future scientists and engineers will be required to think about materials' selection, design, and use. Students will learn the fundamentals of three different states of condensed matter-glasses, crystals, and liquid crystals-and develop a set of tools for describing all of them. Above all, they'll gain a better understanding of the principles of structure common to all materials. Key concepts, such as symmetry theory, are introduced and applied to provide a common viewpoint for describing structures of ceramic, metallic, and polymeric materials. Structure-sensitive properties of real materials are introduced. The text also includes a variety of worked example problems. Other texts available in the MIT Series: Thermodynamics of Materials, Vol I, Ragone, 30885-4 Thermodynamics of Materials, Vol II: Kinetics, Ragone, 30886-2 Physical Ceramics: Principles for Ceramics Science and Engineering, Chiang, Birnie, Kingery, 59873-9 Electronic Properties of Engineering Materials, Livingston, 31627-X

This book, and especially the visuals, helped me get through thermodynamics at MIT. Highly recommended as a supplemental text!

This book is hard cover, which is better than I have expected. It has a few highlights and writings, but overall, the book is quite new and looks better than those paperbacks. I also would like to mention the delivery of the book. The book was delivered by USPS. The website showed that it was delivered on Sept. 5th. But I waited and waited and nothing happened. Hopefully, I contacted the seller and someone at madsstuff named Madeline helped me solved the problem and I finally

received the book on Sept. 24th. I want to thank him/her for all his/her effort!

The seller said book was in "good" condition, but I don't think it had ever been opened before. Great price for a brand new book.

I used this text for my structures class as an undergraduate. The text is really good, but it lacks examples and depth. I found the problems for each chapter very difficult. I strongly suggest using this text with supporting texts.

I had an opportunity to use this text book in one of my classes and found the material within the book confusing for the most part. There are NOT many examples worked out following the explanations of complex equations and their applications -- I feel this leads to a rather limited understanding of important concepts. I recommend looking elsewhere for a crystallography book if you have an option.

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