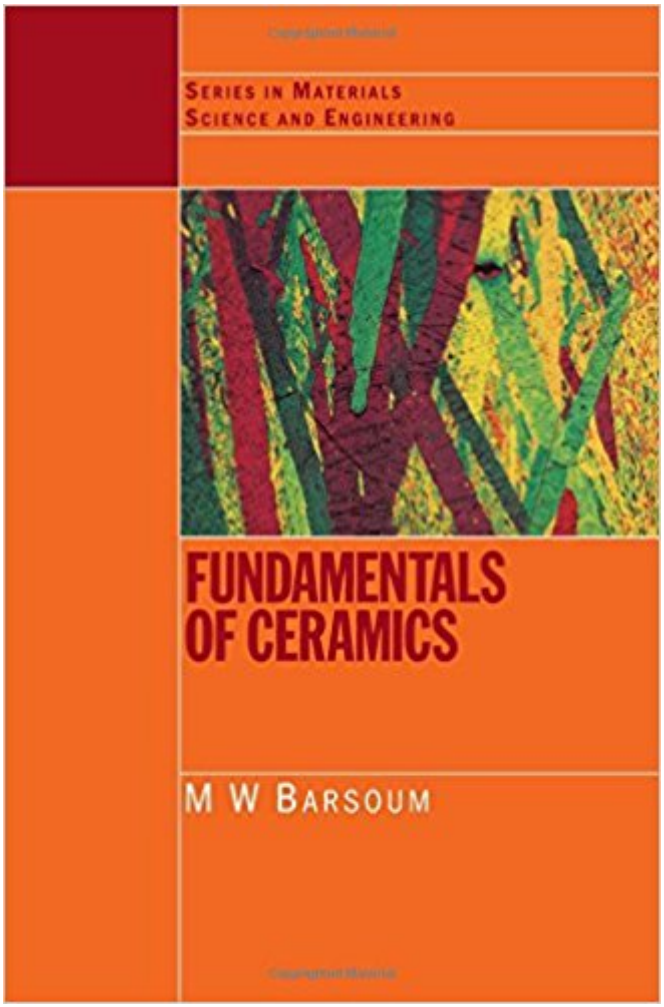
Fundamentals Of Ceramics (Series In Materials Science And Engineering)



Synopsis

Updated and improved, this revised edition of Michel Barsoum’s classic text Fundamentals of Ceramics presents readers with an exceptionally clear and comprehensive introduction to ceramic science. Barsoum offers introductory coverage of ceramics, their structures, and properties, with a distinct emphasis on solid state physics and chemistry. Key equations are derived from first principles to ensure a thorough understanding of the concepts involved.The book divides naturally into two parts. Chapters 1 to 9 consider bonding in ceramics and their resultant physical structures, and the electrical, thermal, and other properties that are dependent on bonding type. The second part (Chapters 11 to 16) deals with those factors that are determined by microstructure, such as fracture and fatigue, and thermal, dielectric, magnetic, and optical properties. Linking the two sections is Chapter 10, which describes sintering, grain growth, and the development of microstructure.Fundamentals of Ceramics is ideally suited to senior undergraduate and graduate students of materials science and engineering and related subjects.

Book Information

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Customer Reviews

"We have been using this text for our juniors ever since its first publication. While the focus of the text is ceramics, the treatment of the kinetics of materials process is highly understandable and easily applied to other materials systems. It is an excellent introduction to mass transport and phase transformations in materials."Ã¢â ¬â ¢Lisa C. Klein, Rutgers University "Updated and improved,

this revised edition present readers with an exceptionally clear and comprehensive introduction to ceramic science."Ã¢â ¬â ¢Materials World, February 2003

I bought this book for an introduction class to ceramics. The book is ok, but it has different sections that are not clear. It is the section of the Young's module. It was not a matter of no being able to understand the material of that section, it is simple no clear. Two of the instructors that I know worked with this book were confused too regarding the given explanations. All the other sections are fine, and it does help you to learn about ceramics.

Excellent textbook, no prior knowledge of ceramics required.

Awful book. would not recommend

I am not an engineer. In fact I know nothing about ceramics. In my mind ceramics is a hobby your Grandma does with her friends. In fact I ordered this book for one of our department's professors. I admittedly didn't read the book, but I did browse through it before handing it over to the professor. Thus, I feel qualified to write this review.My general assessment? It's quite a simple one ... simply put ...THIS BOOK NEEDS MORE PICTURES!!!!!(You know this review swayed your decision on this book, admit it).

Excellent undergraduate level textbook for engineers. Many things are much better explained than Physical Ceramics by Yet Ming-Chiang, which I used for a different course during my B.S.

This text is very clearly written, and an absolute must as a reference for the fundamentals of ceramics. The text ties basic priciples of physics to the structure and behavior of ceramics. The text is ideal for late undergrad, early graduate studies - and is also perfect for scientists and engineers without a background in Materials Engineering *because* it draws on basic physics to clearly cover the topic. Especially useful are the numerous examples within the chapters to highlight important ideas, and the last six chapters - which give important infrmation on electrical, optical, and mechanical properties of ceramics.

Barsoum's text, "Fundamentals of Ceramics", is the best theoretical treatment of materials science that I am familiar with. He provides in-depth coverage of many mat-sci principles and derivations,

from the elementary to the advanced. Caveat emptor, however, as there are also many mistakes in this book. Barsoum would do a great service to the mat-sci community by updating this text and publishing a new edition that corrects the mistakes and provides a more thorough explanation of experimental principles to compliment his theoretical information.

Dr. Barsoum has covered all the bases in this well thought out and beautifully organized book! The author makes the field of ceramics interesting even to people new to the field. This book was used in a course I took, and I will not sell it because it is such an authoritative reference source. There are no other books that compare to Fundamentals of Ceramics.