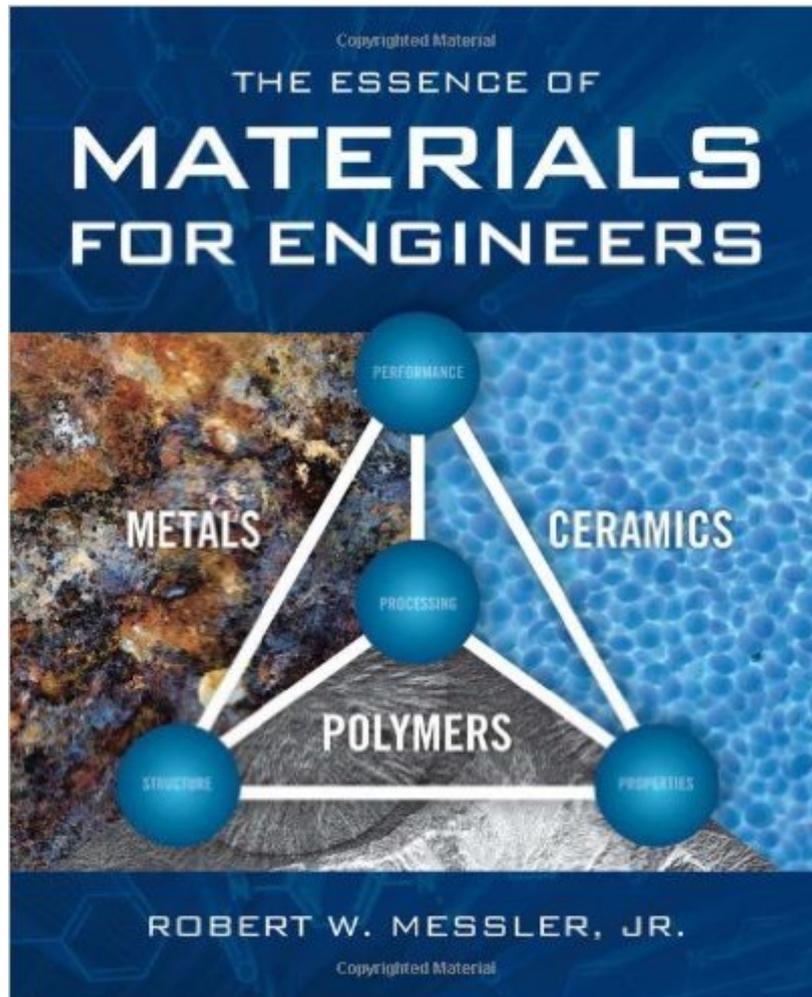


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# The Essence Of Materials For Engineers



## Synopsis

This text is designed for the introductory, one semester course in materials science or as a reference for professional engineers. It addresses what is essential for all engineers to know about the relationship between structure and properties as affected by processing in order to obtain all-important required performance. The organization of topics reflects this key interrelationship, and presents those topics in an order appropriate for students in an introductory course to build their own mental construct or hierarchy. Modern advances in polymers, ceramics, crystals, composites, semiconductors, etc. are discussed with an emphasis on applications in industry.

## Book Information

Hardcover: 562 pages

Publisher: Jones & Bartlett Learning; 1 edition (June 10, 2010)

Language: English

ISBN-10: 0763778338

ISBN-13: 978-0763778330

Product Dimensions: 7.5 x 1.3 x 9.2 inches

Shipping Weight: 2.4 pounds (View shipping rates and policies)

Average Customer Review: 5.0 out of 5 stars [See all reviews](#) (2 customer reviews)

Best Sellers Rank: #786,982 in Books (See Top 100 in Books) #306 in [Books > Business & Money > Management & Leadership > Industrial](#) #1147 in [Books > Engineering & Transportation > Engineering > Materials & Material Science](#) #5224 in [Books > Science & Math > Technology](#)

## Customer Reviews

A thing being designed, be it made of plastic, steel or some exotic space age material has to take into account that the material being used is adequate for the task it is being designed to perform. Indeed we tend to classify the ages of humanity by materials, i.e. Stone Age, Bronze Age, Iron Age and on to the semi-conductor age and the uranium age that we live in now. Somewhere in this it would be good if we could combine these ages with a ceramic age and a polymer (plastic) age. This book covers all of these, beginning with an introduction to atomic structure which really defines the material. The author has deliberately avoided much of the math normally found in materials books. To be sure, there is a bit of math, but it is at the level that the first year engineering student is probably taking concurrently. I do not see the differential equations and quantum physics that the student has not even seen yet. As such the book provides a good basic understanding of materials while leaving the more complex aspects to the materials major who will go on to the more advanced

topics later in his education. This is also good for the rest of us who took differential equations more than just a few years ago.

Messler has done a wonderful job with this book. It reads more like a magazine article, easy and personable. The book really feels like someone is in front of you speaking to you, rather than the typical dull textbook tone, but it still delivers the information you need to develop a very thorough understanding of the material. I highly recommend this book to any professor teaching an introductory materials science class, and even to any student who may be in a class which uses a different book that may be less readable and desires a really thorough, real-world perspective on the field of materials science.

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