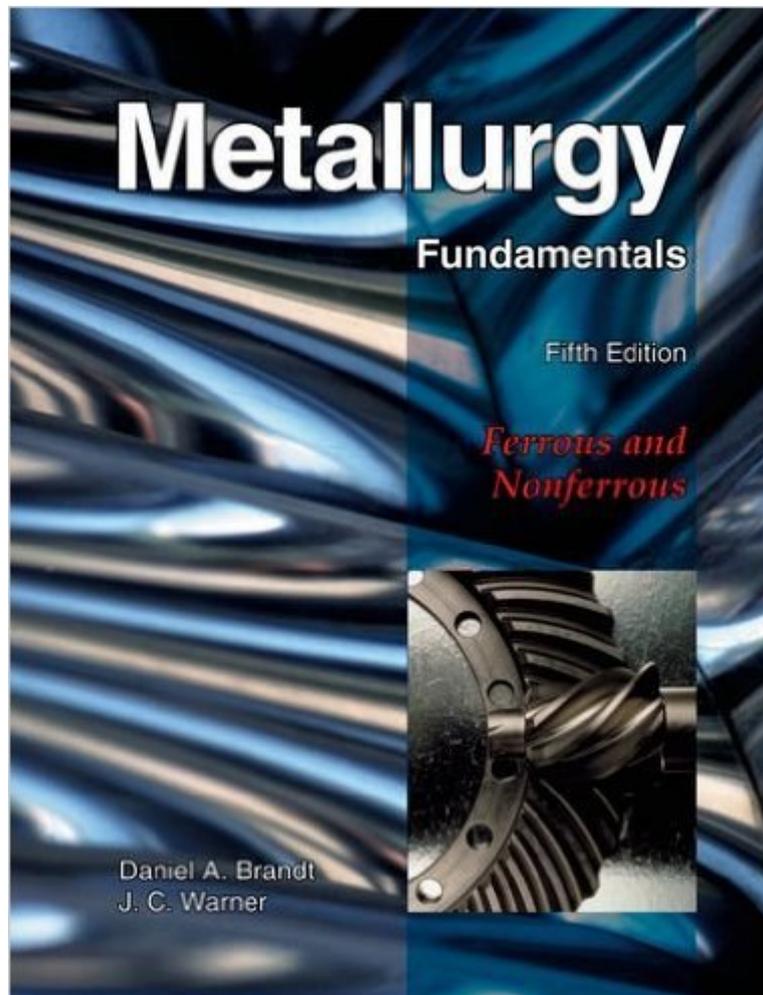


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# Metallurgy Fundamentals



## Synopsis

Metallurgy Fundamentals provides the student with instruction on the basic properties, characteristics, and production of the major metal families. Clear, concise language and numerous illustrations make this an easy-to-understand text for an introductory course in metallurgy. Over 450 tables, diagrams, and photographs show both the theoretical and practical aspects of metallurgy.

## Book Information

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## Customer Reviews

This book was a disappointment. The overall tone of the writing is childish - as if it were written for high-school or even middle-school students. It has a number of errors (they refer to aluminum hydroxide as alumina - alumina is aluminum oxide - and this is a serious error because the mixup comes during the description of a process which ALSO includes aluminum oxide). My copy had several pages out of order (this is the fifth edition, so you'd think they would have sorted out things like this by now). However, the biggest flaw in this book is that their explanations lack any depth and leave glaring questions unanswered. For example, when talking about steelmaking, they refer numerous times to a "Basic Oxygen Furnace", without once explaining why it is called "basic". I went to the Wikipedia article on the topic and immediately found the answer: strong alkaline chemicals are typically added to such a furnace as fluxes. This kind of information helps to form connections among the different subject areas which a student learns, in turn making sense out of an otherwise confusing subject. On the plus side, the book does avoid complex jargon or math which makes it easy reading. I did learn a few things from it, but that's because I knew little about metallurgy before I began reading it. I could have learned more from a few evenings spent reading

related Wikipedia articles.

This book is a nice introduction to the subject of metallurgy. It's well written and clear. Although it's not an in depth treatment of the subject, it should be a good introductory text for the technologist.

I am a highschool student who has begun to get into blacksmithing due to a love of ferrous metals. Interested in studying metallurgy in order to understand the way and will of metal, I got this book (through my library though =P) and was very captivated by it. Basically, the majority of it explained the different types of metals, how they are processed into their forms, heat treating, annealing, some detail on lattice cells and units, and a lot of other stuff. Some of it I knew already but what I didn't know was very interesting to learn. Although I am hoping to find a book that goes into greater depth on the atoms and structure of the metal, and how it is further affected when heated and such, this book proved very well worth the checking out, and I finished it within a matter of two weeks on my own studying. I would rate it 5 stars. It is very enjoyable, informative, and comprehensible. The author writes very well and clearly.

Overall, I enjoyed this book. The treatment of all steps of the steel-making process is thorough, and well-written for a new-comer to the topic. I especially liked the numerous photos/diagrams and step-by-step explanations and examples for how to read the various graphs (I-T, phase diagrams, etc.). These are items which are core to understanding, and where much of the knowledge/learning is embedded, but which often receive insufficient discussion in more-advanced texts (true for many disciplines). In general, the earlier sections of the book devoted to steel were better-written, while the later sections on non-ferrous metals seemed less complete in terms of explaining the extraction/manufacture process steps. In particular, I would have liked a little more labels on photos, especially for machinery, so that the components can be understood in terms of their contribution to overall function. Most of the photos are labeled adequately (overwhelmingly so), but sometimes it seemed like a picture was being shown for filler rather than discussion. List: Fig. 1-6, demonstration of tool wear Fig. 6-25, oxygen lance Fig. 6-40, reversing slab mill Figs. 11-1,2, annealing furnaces Figs. 15-6,9,12, pack-carburizing furnace Fig. 15-15, flame hardening system Fig. 17-4, pipe extrusion Fig. 19-6 galvanization Fig. 19-11, die casting Fig. 19-13, wave soldering To sum up: this book is easy enough to follow to be a fun read, but contains enough depth to serve as a pretty good reference. Happy with my purchase!

I found Metallurgy Fundamentals to be an excellent resource for myself. While not overly technical it covers the basic principles and theory of metal making in clear and straightforward language. I recommend it for persons in drafting, quality, design, or purchasing.

This is a well written and useful textbook. Of course, metallurgy is an endlessly deep subject but this is a nice first or second book to study it. The only thing that I find annoying is a statement early on that iron and carbon do not chemically react. Often they do not, but often they do in iron carbide - the deciding factors are heat treating and other alloying components. This statement should be corrected.

I'm teaching myself blacksmithing and welding and I like to understand the why and the how behind the concepts and book does a nice job of explaining the how and why metals "work" and gives a really decent description of what is happening to the metal when you perform different heat treating processes. Not an in depth technical or scientific explanation but a good explanation written in easy to understand terms with a good use of pictures. Definitely an intro-level look at metals and metallurgy but for someone that doesn't have a strong chemistry background this might help understand some of the concepts in a way that makes sense.

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