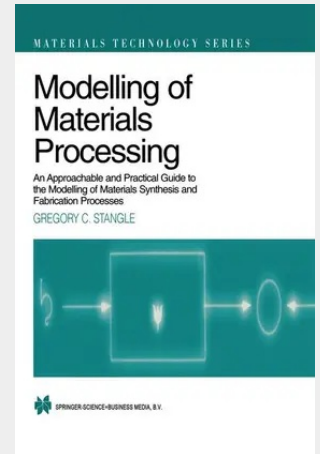


Modelling of Materials Processing

An approachable and practical guide

This is a book about mathematical modelling. It focuses on the modelling of the preparation of materials. Materials are important, of course, in an economic sense: the "goods" of goods-and-services are made of materials. This provides a strong incentive to produce good materials and to improve existing materials. Mathematical modelling can help in this regard. Without a doubt, modelling a materials processing operation is not strictly necessary. Materials synthesis and fabrication processes certainly existed before the invention of mathematics and computers, and well before the combined use of mathematics and computers. Modelling can, however, be of assistance--if done properly--and if used properly. The mathematical modelling described in this book is, at its root, a rather formal, structured way of thinking about materials synthesis and fabrication processes. It requires looking at a process as a whole. It requires considering everything that is or might be important. It requires translating the details of a given physical process into one or more mathematical equations. It requires knowing how to simplify the equations without over-simplifying them.

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320,99 €

299,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9781461376644

Medium: Buch

ISBN: 978-1-4613-7664-4

Verlag: Springer

Erscheinungstermin: 26.02.2014

Sprache(n): Englisch

Auflage: Erscheinungsjahr 2014

Serie: Materials Technology Series

Produktform: Kartoniert

Gewicht: 1410 g

Seiten: 928

Format (B x H): 155 x 235 mm

