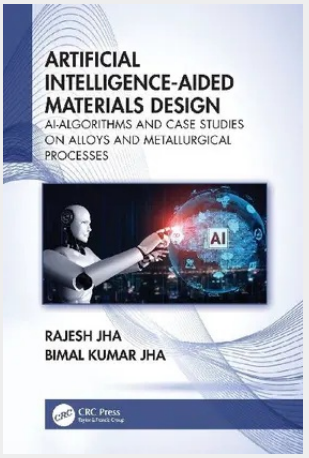
Jha

Artificial Intelligence-Aided Materials Design

AI-Algorithms and Case Studies on Alloys and Metallurgical Processes



This book describes the application of artificial intelligence (AI)/machine learning (ML) concepts to develop predictive models that can be used to design alloy materials, including hard and soft magnetic alloys, nickel-base superalloys, titanium-base alloys, and aluminum-base alloys. Readers new to AI/ML algorithms can use this book as a starting point and use the MATLAB® and Python implementation of AI/ML algorithms through included case studies. Experienced AI/ML researchers who want to try new algorithms can use this book and study the case studies for reference. - Offers advantages and limitations of several AI concepts and their proper implementation in various data types generated through experiments and computer simulations and from industries in different file formats - Helps readers to develop predictive models through AI/ML algorithms by writing their own computer code or using resources where they do not have to write code - Covers downloadable resources such as MATLAB GUI/APP and Python implementation that can be used on common mobile devices - Discusses the CALPHAD approach and ways to use data generated from it - Features a chapter on metallurgical/materials concepts to help readers understand the case studies and thus proper implementation of AI/ML algorithms under the framework of data-driven materials science - Uses case studies to examine the importance of using unsupervised machine learning algorithms in determining patterns in datasets This book is written for materials scientists and metallurgists interested in the application of AI, ML, and data science in the development of new materials.

This book describes the application of artificial intelligence (AI)/machine learning (ML) concepts to develop predictive models that can be used to design alloy materials. It will appeal to readers who are both new to and experienced with the use of AI/ML algorithms in data-driven materials science.

79,50 €
79,50 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9780367765286
Medium: Buch
ISBN: 978-0-367-76528-6
Verlag: CRC Press
Erscheinungstermin: 04.10.2024
Sprache(n): Englisch
Auflage: 1. Auflage 2024
Produktform: Kartoniert
Gewicht: 550 g
Seiten: 362
Format (B x H): 156 x 234 mm

Kundenservice Verlag Dr. Otto Schmidt KG
Neumannstraße 10, 40235 Düsseldorf | kundenservice@otto-schmidt.de | 0221-93738-997 (Inland)