



Metal Matrix Composites

By Nikhilesh Chawla, Krishan K. Chawla



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This work focuses on the fundamentals of MMCs for engineers and designers. The new edition addresses new issues and developments in the areas of automotive, aerospace, electronics and consumer applications. These include continuous fiber reinforced MMCs for cables in power transmission, high temperature superconducting wires, particulate MMCs in civilian aircraft and automotive applications, and high volume fraction, high thermal conductivity substrates for electronic packaging. The coverage is thorough and cohesive, and emphasizes the synergistic relationships among processing, structure and properties of metal matrix composites.

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Editorial Review

Review

-- I am familiar with the first edition of the book and have used it as recommended reading in one of my courses. Dr. N. Chawla is a recognized authority in the field of computational materials science and has conducted extensive work in the area of image based finite element analysis.

-- Metal matrix composites field is currently underserved for textbooks and reference books. A revised second edition will be great for students.

-- This will be one of the best books in the field, even better than the author's earlier book on composites.

-- The strength in this book pertains to the balanced nature taken toward elucidation of the subject for both students and professionals to learn from on a convenient basis. Unlike other books in the general field, this book is also a one-stop-pick-up-all-you-can tool for anyone doing work related to the field - this contributes to its high rank in the field, also because of the authors' significant professional reputations in the field.

-- This book is very thorough. Many books will not go into detail about crystallography, dislocation types, other basic materials science concepts, and assume the audience knows or if they don't, they will look things up. Students (undergrad and grad), post docs, researchers, and professors would all benefit from this book.

-- The book contains a lot of information. In my opinion, the work ranks among the best in the field.

From the Back Cover

Metal Matrix Composites (MMCs) have progressed from “niche” materials to high performance applications in aerospace, electronic packaging, automotive, and recreational products. This book focuses on the synergistic relationships among processing, microstructure, and properties of metal matrix composites. The authors include chapters on reinforcements, common matrix materials, processing of MMCs, interface characterization and techniques for obtaining interfacial properties, monotonic mechanical and physical properties, cyclic fatigue, creep, wear resistance, corrosion, and applications of MMCs. This, 2nd edition, builds on the text of the previous edition, by adding new and contemporary coverage of nanocomposites, corrosion, new applications, and new characterization techniques such as x-ray tomography and micropillar compression.

About the Author

Nikhilesh Chawla is Fulton Professor of Materials Engineering at Arizona State University. He's the recipient of the 2013 Brimacombe Medalist Award from TMS; 2011 Distinguished Lectureship given by Tsinghua University, China; 2009 Raymond Award for Best Paper by the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME); 2004 Bradley Stoughton Award for Young Teachers, given by ASM International; and the 2006 TMS Young Leaders Tutorial Lecture. He's also won the National

Science Foundation Early Career Development Award and the Office of Naval Research Young Investigator Award.

Krishan Chawla is Professor of Materials Science and Engineering at the University of Alabama at Birmingham, USA. Among his other awards are: Distinguished Researcher Award at New Mexico Tech, Distinguished Alumnus Award from Banaras Hindu University, Eshbach Society Distinguished Visiting Scholar award at Northwestern University, Faculty Fellow award at Oak Ridge National Laboratory.

Users Review

From reader reviews:

Thomas Obrien:

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Wendy Hartnett:

The book untitled Metal Matrix Composites contain a lot of information on the item. The writer explains her idea with easy approach. The language is very clear to see all the people, so do not really worry, you can easy to read the idea. The book was compiled by famous author. The author gives you in the new age of literary works. You can read this book because you can continue reading your smart phone, or gadget, so you can read the book throughout anywhere and anytime. In a situation you wish to purchase the e-book, you can wide open their official web-site as well as order it. Have a nice study.

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