1. Record Nr. UNINA9911008917503321

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| Autore | Khanna Virat |
| Titolo | Metal Matrix Composites |
| Pubbl/distr/stampa | Sharjah : , : Bentham Science Publishers, , 2024<br>©2024 |
| ISBN | 9789815223439<br>9815223437 |
| Edizione | [1st ed.] |
| Descrizione fisica | 1 online resource (305 pages) |
| Altri autori (Persone) | SharmaPrianka<br>KumarSantosh |
| Soggetti | Metallic composites<br>Composite materials |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di contenuto | Cover -- Title -- Copyright -- End User License Agreement -- Contents -- Preface -- List of Contributors -- Metal Matrix Composites: An Introduction andRelevance to Modern Sustainable Industry -- Structure-Property Correlations in Metal Matrix Composites -- Neeraj Kumar Sharma1,* and Abhimanyu Singh Rana1 -- COMPOSITE MATERIALS -- CLASSIFICATION OF COMPOSITE MATERIALS -- METAL MATRIX COMPOSITES -- ANALYSIS OF COMPOSITE'S BEHAVIOR -- Fabrication and Experimental Characterization of MMCs -- Analytical Models for Composite Analysis -- Hashin and Shtrikman bound -- Analytical Thermo-Elastic Model -- Kerner Model -- Schapery Bounds -- Turner Model -- Finite Element Methods (FEM) -- 2D-FEA USING OOFEM -- Microstructure Modeling Using OOFEM -- Finite Element Mesh Generation -- Nonlinear Analysis Using OOFEM -- OOFEM Analysis for Ni-Alumina Composite -- Thermal-expansion of Interpenetrating Phase Composites -- THREE-DIMENSIONAL FINITE ELEMENT ANALYSIS -- 3D Finite Element Modeling of Al–B4C Composites |
| Sommario/riassunto | This book provides a comprehensive overview of metal matrix composite manufacturing, including fabrication methods, |

characterization techniques, and manufacturing applications. 10 chapters cover fundamental and applied topics on matrix metal composites. The book is a resource for all readers seeking to gain an in-depth understanding of metal matrix composites with its relevance to the modern industry. Key Features - Includes fully referenced contributions by experts in materials science - Provides an introduction to the subject, and a future prospective for a broad range of readers - Reviews current knowledge on fabrication techniques and structure property relationships of metal matrix composites - Includes dedicated chapters for reinforced composites (carbon fiber, carbon nanotubes, aluminium) - Includes guidance on material wear and tear and - Provides an investigation for process optimization for EDM for newly developed composites It is designed to be an essential resource for students and professionals in the field of materials science and engineering, as well as researchers and engineers working on metal matrix composite in manufacturing industries. Readership Students and professionals in the field of materials science and engineering; researchers and engineers working on metal matrix composite in manufacturing industries.