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Nota di contenuto	Frontmatter -- Preface -- Contents -- List of Contributing Authors -- Editors' Biography -- 1. Fabrication of functionally graded materials: A review / Zindani, Divya / Kumar, Kaushik / Davim, J. Paulo -- 2. Manufacturing of aluminium composite materials: A review / Abdulrahman, Kamardeen O. / Akinlabi, Esther T. / Mahamood, Rasheedat M. -- 3. Advanced manufacturing of compositionally graded composite materials: An overview / Mahamood, R. M. / Akinlabi, E. T. / Owolabi, G. M. / Abdulrahman, K. O. -- 5. Natural fiber composites as functionally graded materials for advanced applications / Alaaeddin, M. H. / Sapuan, S. M. / Yusoff, M. Z. M. / Zainudin, E. S. / Al-Oqla, Faris M. -- 6. Temperature distribution in functionally graded longitudinal fins of varying geometry / Subramaniam, Savita K. / Gaba, Vivek Kumar / Bhowmick, Shubhankar -- 7. Analytic approach for transient response of functionally graded rectangular plates including the higher-order shear deformation effects / Hien, Ta Duy -- 8. Fuzzy-based frequency response function analysis of functionally graded plates / Karsh, P. K. / Mukhopadhyay, T. / Dey, S. -- 9. Transmission efficiency of glass fiber-filled functionally graded material-based PA66 composite spur gears / Singh, Akant Kumar / Siddhartha / Singh, Prashant Kumar --

10. Approximate solution of functionally graded thick cylinders /
Sondhi, Lakshman / Sanyal, Subhashis / Saha, Kashinath / Bhowmick,
Shubhankar -- Index

Sommario/riassunto

Hierarchical Composite Materials provides an in-depth analysis of a class of advanced composites that have properties that are anisotropic due to structural organization at different length scales. Chapters address how ordering occurs from the atomic-scale up to the microstructure and how control of these factors leads to the final materials' properties. Manufacturing procedures, properties, and applications of different functionally graded materials are discussed in detail. This book is ideal for materials scientists, mechanical engineers, chemists and physicists.