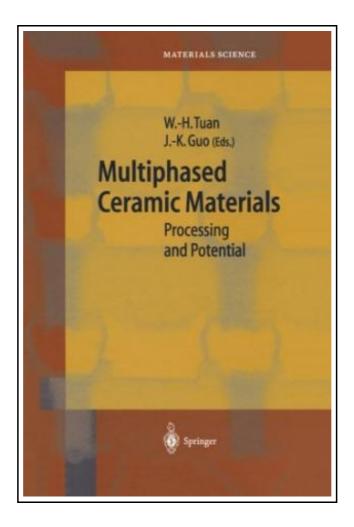
Multiphased Ceramic Materials



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Reviews

Complete information! Its such a excellent study. It is filled with knowledge and wisdom I realized this publication from my dad and i advised this publication to find out.

(Geovanny Grimes)

MULTIPHASED CERAMIC MATERIALS



Book Condition: New. Publisher/Verlag: Springer, Berlin | Processing and Potential | Summary of the recent progress in ceramics research. Several novel concepts for materials selection and microstructural design are presented, as are experimental results that substantiate the ideas. | 1 Multi-phase Materials.- 1.1 Introduction.-1.2 The Basic Concept of Multi-phase Materials.- 1.2.1 Blurring the Boundaries Between Various Phases.- 1.2.2 Applying Nano-technology.- 1.2.3 Applying Advanced Fabrication Processes.- 1.2.4 Marketability and Reliability.-1.2.5 Material Design.- 1.3 The Need for Multi-phase Materials.- 1.4 Research Objectives.- References.- 2 New Concepts in the Design of Tough Ceramics.- 2.1 Introduction.- 2.2 Experiments.- 2.3 Results and Discussion.- 2.3.1 Transformation Toughening Mechanism.- 2.3.2 Plastic Deformation Mechanism.- 2.3.3 Interactions Between Transformation and Toughening Plastic Deformation.- 2.4 Conclusions.- Acknowledgement.- References.- 3 Interface Design of Tough Ceramics: Si3N4/BN Fibrous Monolithic Ceramic.- 3.1 Introduction.- 3.2 Measurement of Interfacial Toughness.- 3.3 Preparation of Si3N4/BN Fibrous Monolithic Ceramic.- 3.3.1Fabrication of Si3N4/BN Fibrous Monolithic Ceramic.- 3.3.2 Mechanical Properties at Elevated Temperatures.- 3.3.2.1 Creep Resistance.- 3.3.2.2 Thermal Shock Behavior.- 3.4 Conclusions.- Acknowledgement.- References.- 4 Microstructural Design: Si/SiC Composites Derived from Wood.- 4.1 Introduction.- 4.2 Experimental Work.- 4.2.1 Starting Materials.- 4.2.2 Fabrication Process.- 4.2.3 Testing.- 4.3 Results and Discussion.- 4.3.1 XRD Analysis and Phase Composition.- 4.3.2 Microstructure.- 4.3.3 Mechanical Properties.- 4.3.4 Reaction Mechanism.- 4.3.5 Removal of Free Silicon.- Acknowledgements.- References.- 5 Microstructure through Design in-situ Seeding Technique.- 5.1 Introduction.- 5.2 Experimental Work.- 5.2.1 Preparation of ?-Si3N4 Seeds.- 5.2.2 Sample Preparation.- 5.2.3 Microstructural Analysis.- 5.2.4 Characterization.- 5.3 Results and Discussion.- 5.4 Summary and Conclusions.- Acknowledgements.- References.- 6 Directional Solidification: ZrB2-LaB6 Eutectic Composites.- 6.1 Introduction.- 6.2 Experimental Work.- 6.3 Results and Discussion.- 6.4 Conclusions.-Acknowledgements.- References.- 7 A Co-Sedimentation Technique to Fabricate Continuous Gradient Composites.- 7.1 Introduction.- 7.2 Physical Modeling.- 7.3 Numerical Modeling.- 7.3.1 The Continuum Equation.-7.3.2 Initial Conditions. - 7.3.3 Mathematical Model Based on Co-sedimentation. - 7.4...



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