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Nota di bibliografia	Includes bibliographical references at the end of each chapters and indexes.
Nota di contenuto	Advanced Ceramics and Novel Processing; Preface, Committees and Sponsors; Table of Contents; Advanced Ceramics; Synthesis and Characterization of Hafnium Carbide Based Ceramics; Grain Boundary Segregation-Induced Phase Transformation and Grain Growth in Y <sub>2</sub> O <sub>3</sub> -Stabilized ZrO <sub>2</sub> Polycrystals; A Model for Estimating Internal Stress during Sintering of Ceramic Multiphase Laminates; Fabrication of Nitride Ceramics by Electric Current Assisted Sintering; Effect of Initial Alpha-SiC Content on Thermal Conductivity of Silicon Carbide Ceramics Fabrication of Carbon Nanotube Reinforced Boron Carbide Composite by Hot-Pressing Following Extrusion Molding Consolidation of SiC Powder Coated with SiO <sub>2</sub> Nanolayer by Spark Plasma Sintering; High-Speed Deposition of SiC Thick Film by Halide Precursor; Lamellar and Rod-Like Eutectic Growth of TiB <sub>2</sub> -TiC-TiN Composites by Arc-Melting;

Preparation of Zirconium Phosphate Bonded Silicon Nitride Ceramic Coatings by Cold Spray and Pressureless Sintering; Consolidation of Titanium Carbide with Zirconium Carbide by Spark Plasma Sintering  
Influence of the Process Temperature of Spark Plasma Sintering on Microstructure and Nanoindentation Hardness/Young's Modulus of WC-8wt% CoEffect of pH on the Microstructure and Purity of Copper-Coated Tungsten Composite Powders Prepared by Electroless Plating; Fabrication and Properties of W-Cu Functionally Graded Material by Tape-Casting; Synthesis of S and N Co-Doped Mesoporous Titanium Oxide by Anodization Processs; A Wettability Tunable Surface of Nafion® with Controlling the Flip-Flop Property by DC Applied Voltage  
Interlayer Surface Modification of Layered Perovskite  $\text{HLaNb}_2\text{O}_7\text{-xH}_2\text{O}$  with Diol Compounds Possessing Ethylene Oxide Chains TL Properties of Pure  $\text{Al}_2\text{O}_3$  Grown by the Micro-Pulling down Method; Optical and Scintillation Properties of Cr Doped  $\text{Y}_3\text{Ga}_5\text{O}_12$  Crystal for Infra-Red Scintillators; Growth and Luminescence Properties of Ce and Ca Co-Doped  $\text{LiGdF}_4\text{-LiF}$  Eutectic Scintillator; Effect of Annealing Temperature on Structure and Mechanical Property of Magnetron Sputtered c-BN Films; Electroceramics  
Engineering of Lead-Free Piezoelectrics in Alkali Niobate Ceramic System: Improvement in Density by Two-Step Mixing Process Iron Composite Anodes for Fabricating All-Solid-State Iron-Air Rechargeable Batteries; Chemical Reactivity and Cathode Properties of  $\text{LaCoO}_3$  on Lanthanum Silicate Oxyapatite Electrolyte; Preparation of Layered Double Hydroxide and its Graphene Composite Films as Electrodes for Photoelectrochemical Cells; Mesoporous Hollow Carbon Derived from Soft-Templated Hydrothermal Process for Supercapacitor Electrode  
Highly (004)-Oriented Texture of  $-\text{LiAlO}_2$  Films by Laser Chemical Vapor Deposition

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#### Sommario/riassunto

Materials science is an interdisciplinary and integrated research field, concerning the relationship among microstructure, processing and property of materials. Although ceramics were anciently invented, modern ceramics are advancing rapidly, leading into new fields far beyond the conventional image of ceramics. The properties of materials, in particular ceramics, are strongly affected by processing, and thus a new processing can produce new materials which can trigger significant development of society. The present book comprises 58 peer-reviewed scientific papers presented to the 5th Interna

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