1. Record Nr. UNINA9910659483403321

Titolo	Advances in Powder and Ceramic Materials Science 2023 / / edited by Bowen Li, Dipankar Ghosh, Eugene A. Olevsky, Kathy Lu, Faqin Dong, Jinhong Li, Ruigang Wang, Alexander D. Dupuy, Elisa Torresani
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2023
ISBN	3-031-22622-4
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (175 pages)
Collana	The Minerals, Metals & Materials Series, , 2367-1696
Disciplina	629.134 620.14
Soggetti	Ceramic materials Composite materials Metals Building materials Materials science Ceramics Composites Metals and Alloys Structural Materials Materials Science
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Intro -- Preface -- Contents -- About the Editors -- Part I Advances in Powder and Ceramic Materials Science -- 1 Design of High-Entropy Ceramics with IGZO-Based Compounds for Electroceramics Applications -- 2 Development of High Voltage Multilayer Ceramic Capacitor -- 3 Development of an Experimentally Derived Model for Molybdenum Carbide (MoC) Synthesis in a Fluidized-Bed Reactor -- 4 Fabrication of Ultra-Lightweight and Highly Porous Alumina Scaffolds by a Novel Sol-Gel/Freeze Casting Hybrid Method -- 5 Effect of Three-Dimensionally Connected Porous Hydroxyapatite Ceramics on Enhancing Heat Storage of Lithium Nitrate Phase Transformation Materials -- 6 Water Gradations Stoichiometrically Resolve Cuprous-

Chloride Tetrahedral Stamps in a Hydrochloric-Acid Smelter -- 7 Phase Equilibria of SiO-CeO-CaO-25wt.% AlO System at 1773 K -- 8 Printed Carbon Nanotube and Graphene Heaters for Drying Ceramics -- 9 Enhancing Reinforcing Efficiency of SiC Particles in Aluminum Matrix Composites with Intercalated Oxygen Atoms -- 10 Weathering Resistance of Post-consumer Glass and Sawdust Reinforced Polyester Composites -- 11 Preparation of FeMnAlSiC Powder by CO-Steel Slag Cooperative Electro Deoxidation -- 12 Thermodynamic Analysis of BN Prepared by Electrodeposition BN Power -- 13 Use of Ceramic Waste in Different Percentages as a Replacement of the Fine Aggregate in Mortars -- Part II Powder Materials Processing and Fundamental Understanding -- 14 Combustion Synthesis of ZrC-TiC Composite Nanoparticle by Self-Propagating High Temperature Synthesis (SHS) in ZrO-TiO-Mg/Al-C System -- 15 Sintering Mechanism for Polycrystalline Diamond -- 16 Combustion Synthesis of BC-TiB Composite Nanoparticle by Self-Propagating High-Temperature Synthesis (SHS) in BO-TiO-Mg-C System -- Author Index -- Subject Index.

Sommario/riassunto

This collection emphasizes the advances of powder and ceramic/glass materials in the fundamental research, technology development, and industrial applications. Ceramic materials science covers the science and technology of creating objects from inorganic, non-metallic materials, and includes design, synthesis, and fabrication of ceramics, glasses, advanced concretes, and ceramic-metal composites. In recent years, the hybrids of ceramic and metallic materials have received plenty of interdisciplinary inspirations and achievements in material processes and functional applications including ionic conductors, catalysis, energy conversion and storage, superconductors, semiconductor, filtrations, etc. Topics cover, but are not limited to:· Silicates, oxides, and non-oxide ceramics and glasses · Synthesis, characterization, modeling, and simulation of ceramic materials · Design and control of ceramic microstructure and properties · Ceramic powders and processing · Catalyst and catalyst support materials · Fundamental understanding of ceramic materials and processes · Novel methods, techniques, and instruments used to characterize ceramics and glasses · High entropy ceramics (and/or entropy stabilized, complex-concentrated, compositionally-complex, multi-principal cation ceramics) · Bioceramics, electronic, magnetic ceramics, and applications · Surface treatment and ceramic thin films, membranes, and coatings · Porous ceramic materials · Hybrid systems of ceramic, metal, and/or polymer composites · Ceramics used for extreme environments · Metallurgical byproducts for ceramic manufacturing.