1. Record Nr. UNINA9910978383503321

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Titolo	Engineering Crystal Habit : Applications of Polymorphism and Microstexture Learning from Nature / / edited by Fumitaro Ishikawa, Hiroaki Ohfuji, Jun Kawano, Tetsuya Tohei
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2024
ISBN	9789819602667 9819602661
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (289 pages)
Collana	Topics in Applied Physics, , 1437-0859 ; ; 152
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Disciplina	530.411
Soggetti	Condensed matter Materials Solid state physics Crystallography Structure of Condensed Matter Materials for Devices Electronic Devices Crystallography and Scattering Methods
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Morphological and textural variety of natural minerals – pyrite as an example -- Strange mineral crystals found in volcano and mining sites -- Growth and modifications of crystals on airless surfaces -- Recent insights into the formation mechanisms of aluminium and iron oxides in aqueous solution -- Visualization of pH and ionic concentration for dissolving/forming crystals -- Crystal structure control technology for organic and biomaterials using light -- Microtexture and polymorphism observed during the molecular-beam epitaxial growth of group III–V semiconductor nanostructures -- Crystal phase engineering in self-assisted GaAs Nanowires -- Exploration of nanowire photonics towards advent of ultra-smart societies -- Phase-selective synthesis of oxide

materials via mist chemical vapor deposition -- Crystalline microstructure and versatile resistive switching property in rutile TiO2-x four-terminal memristors.

Sommario/riassunto

This book compiles reviews of both fundamental and applied research in physics and materials science, focusing on the existence, formation mechanisms, and artificial synthesis of versatile, nature-inspired crystals. It aims to highlight the development and application of advanced crystals with novel polymorphism and microtextures, resulting in the innovation of completely new and unexpected functionality. The book encompasses five main topics; the first three focus on fundamental research in mineralogy in the areas of polymorphism and microtexture in biological environments, crystallographic structure, and nucleation and growth. The last two parts address applied research devoted to microtexture and polymorphism in electronics and photonics applications. The featured topics comprise contributions from international groups of active researchers in the field. The book is a valuable tool for a wide readership ranging from graduate students to researchers and engineers. The broad coverage of topics is attractive to readers from diverse fields including crystal engineering, drug development, electronic materials, electronic devices, and mineralogy.