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Titolo	Handbook on synthesis strategies for advanced materials . Volume-II Processing and functionalization of materials // A. K. Tyagi, Raghumani S. Ningthoujam, editors
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Edizione	[1st edition.]
Descrizione fisica	1 online resource (856 pages) : (XVII, 846 p. 368 illus., 305 illus. in color.)
Collana	Indian Institute of Metals Series.
Disciplina	668.42
Soggetti	Synthetic products
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1 --Shape forming and sintering of ceramics --Chapter 2 -- Size and shape engineering of nanoparticles by chemical methods -- Chapter 3 --Growth of single crystals for nuclear radiation detection -- Chapter 4 --Techniques for thin film of advanced materials --Chapter 5 --Inkjet printing of nanomaterials and nanoinks --Chapter 6 -- Synthesis of porous materials --Chapter 7 --Synthesis of highly ordered nanoporous templates and template-based nanomaterials -- Chapter 8 --Synthesis aspects of nanoporous and quasi 1-dimensional thin film architecture photoelectrodes for artificial photosynthesis -- Chapter 9 --Synthesis of foams of inorganic materials --Chapter 10 -- Exfoliation routes to the production of nanoflakes of graphene analogous 2D materials and their applications --Chapter 11 --Drying of tiny colloidal droplets: A Novel synthesis strategy for Nano- structured Micro-granules --Chapter 12- Hot injection method for nanoparticle synthesis: Basic concepts, examples and applications -- Chapter 13 --Amphiphilic self-assembly in the synthesis and processing of nanomaterials --Chapter 14- Synthesis and Surface Functionalization of Nanostructured Biomaterials.
Sommario/riassunto	This book presents state-of-the-art coverage of synthesis of advanced functional materials. Unconventional synthetic routes play an important

role in the synthesis of advanced materials as many new materials are metastable and cannot be synthesized by conventional methods. This book presents various synthesis methods such as conventional solid-state method, combustion method, a range of soft chemical methods, template synthesis, molecular precursor method, microwave synthesis, sono-chemical method and high-pressure synthesis. It provides a comprehensive overview of synthesis methods and covers a variety of materials, including ceramics, films, glass, carbon-based, and metallic materials. Many techniques for processing and surface functionalization are also discussed. Several engineering aspects of materials synthesis are also included.
