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Descrizione fisica	1 online resource (VI, 570 p. 337 illus., 238 illus. in color.)
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Soggetti	Nanotechnology Mechanical engineering Electronics Microelectronics Manufactures Nanotechnology and Microengineering Mechanical Engineering Electronics and Microelectronics, Instrumentation Manufacturing, Machines, Tools, Processes
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Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Introduction -- Aligned Nanowire Growth -- Taxane formulations: From plant to clinic -- Nanotechnology and its Applications in Knee Surgery -- Advanced Characterisation Techniques for Nanostructures -- TiO ₂ –Graphene Based Composites: Synthesis, Characterization and Application in Photocatalysis of Organic Pollutants -- A Short Introduction to the Molecular Dynamics Simulation of Nanomaterials. - Development of a nanopaint for polymeric auto components.- Atomic Force Microscopy for Microbial Cell Surfaces.- Silicon Micro/Nanomachining and Applications.- Solid-State Micropores for Living Cell Detection and Discrimination -- Iron Pyrite (FeS ₂): Sustainable Photovoltaic Material.- Application of Nanomaterials in Dentistry.- Electrical Conductivity of CVD diamond Thin Films. - Synthesis and Characterisation of Magnetic Nanoparticles in Medicine.

- A review on the application of nanofluids in coiled tube heat exchangers.- 3D Printing of pharmaceuticals.- Manufacturing, Numerical and Analytical Model limitations in developing fractal microchannel heat sinks for cooling MEMS, microelectronics and aerospace components -- Microvascular coaptation methods: device manufacture and computational simulation.

Sommario/riassunto

This book is a comprehensive treatment of micro and nanofabrication techniques, and applies established and research laboratory manufacturing techniques to a wide variety of materials. It is a companion volume to "Micro and Nanomanufacturing" (2007) and covers new topics such as aligned nanowire growth, molecular dynamics simulation of nanomaterials, atomic force microscopy for microbial cell surfaces, 3D printing of pharmaceuticals, microvascular coaptation methods, and more. The chapters also cover a wide variety of applications in areas such as surgery, auto components, living cell detection, dentistry, nanoparticles in medicine, and aerospace components. This is an ideal text for professionals working in the field, and for graduate students in micro and nanomanufacturing courses.
