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Nota di contenuto	Growth Market Nanotechnology; Table of Contents; Foreword; Contributors; Overall Synopsis; 1 Introduction; 1.1 Initial Situation and Goal of the Study; 1.2 Methodological Procedure; 1.3 Structure of the Report; Acknowledgements; 2 Notes on Nanotechnology; 2.1 Definition of a Complex Term; 2.2 Bottom-up and Top-down Strategies; 2.3 New Effects through Nanoscalability; 2.4 Thematic and Structural Interdisciplinarity; 2.4.1 Nanomaterials, Ultrathin Coatings and Porous Structures; 2.4.2 Nanobiotechnology; 2.4.3 Nanooptics; 2.4.4 Nano-optoelectronics and Spin Systems; 2.4.5 Nanoelectronics 2.4.6 Nanoanalysis2.4.7 Industrial Production; 2.5 Central Players in Germany; 2.5.1 Networks; 2.5.1.1 BMBF-funded Competence Centers (CCN); 2.5.1.2 Other Networks; 2.5.2 Institutional Research Facilities; 2.5.2.1 Wissensgemeinschaft G. W. Leibniz (WGL); 2.5.2.2 Helmholtz Gemeinschaft deutscher Forschungszentren (HGF) (Association of German Research Centers); 2.5.2.3 Max-Planck-Gesellschaft (MPG); 2.5.2.4 Fraunhofer-Gesellschaft (FhG); 2.5.3 Universities and Other

Research Facilities; 2.5.4 Industrial Research and Development
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6.1 Project Funding by the Public Sector; 2.6.1.1 Federal Ministry of Education and Research (BMBF); 2.6.1.2 Federal Ministry of Economics and Technology (BMWi); 2.6.1.3 Institutional Research Funding; 2.6.1.4 Public R&D Funding in Germany; 2.6.1.5 Assessment of the Situation in Germany; 2.6.2 Comparison with International Activities; 2.6.2.1 Conclusions on the International Situation of Germany; 3 Application and Market Prospects of Nanotechnology in Products and Product Groups; 3.1 Notes on Literature Analysis
3.2 Nanomaterials3.2.1 Classification of Nanomaterials; 3.2.2 Nanoparticles/Fibers/Tubes; 3.2.2.1 Metal oxides/Metals; 3.2.2.2 Carbon Particles; 3.2.2.3 Layer Silicates; 3.2.2.4 Organic Nanoparticles; 3.2.3 Nanocomposite Materials; 3.2.3.1 Polymer-based Nanocomposites; 3.2.3.2 Ceramic Matrix Materials; 3.2.3.3 Metal Matrix Materials; 3.2.3.4 Aerogels; 3.2.3.5 Zeolites; 3.2.4 Nanocoating Systems; 3.3 Nanoelectronics; 3.3.1 Si-based Electronics; 3.3.2 Magnetoelectronics; 3.3.3 Alternative Approaches; 3.3.4 Market Prospects; 3.4 Nanooptics; 3.4.1 Ultraprecision Optics
3.4.2 Ultrathin Optical Layers3.4.3 Measurement Technology; 3.4.4 Microscopy; 3.4.5 Photonic Crystals; 3.4.6 Optoelectronic Light Sources - Lasers and Light-emitting Diodes (LED); 3.4.7 Quantum Dot Laser; 3.5 Nanobiotechnology; 3.5.1 Bio2Nano; 3.5.2 Nano2Bio; 3.5.2.1 Basic Biomedical Research; 3.5.2.2 Drug Delivery; 3.5.2.3 Contrast Media in Diagnostics; 3.5.2.4 Biochips; 3.5.2.5 Implants; 3.6 Nanotools and Nanoanalysis; 3.6.1 Creation of Lateral Nanostructures; 3.6.1.1 Optical Lithography; 3.6.1.2 Soft Lithography; 3.6.2 Development of Nanolayer Systems; 3.6.2.1 PVD Process
3.6.2.2 CVD Process

Sommario/riassunto

With its assessment and linking of study reports into a coherent narrative, this book accurately describes the technological and economic opportunities of nanotechnology in all important sectors of industry affected. As such, it provides an in depth-analysis within the context of product groups and lead markets on the international level, with the focus on Germany. Much cited internationally, Gerd Bachmann applies a so-called method mix to avoid the weaknesses of other studies conducted purely using quantitative research methods, which leave too many white spots to enable an accurate analysis.

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Autore	Grunanger Paolo
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Collana	Chemistry of heterocyclic compounds, , 0069-3154 ; ; v. 49
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