Applied Nanotechnology

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Abstrak

Applied Nanotechnology: The Conversion of Research Results to Products, Third Edition, takes an integrated approach to the scientific, commercial and social aspects of nanotechnology, exploring the relationship between nanotechnology and innovation, the changing economics and business models required to commercialize innovations in nanotechnology, and product design challenges that are investigated through case studies. Applications in various sectors, including composite materials, energy and agriculture are included, as is a section on the role of the government in promoting nanotechnology. In addition, the potential future of molecular self-assembly in industrial production is discussed, along with the ethics and social implications of nanotechnology. This new edition begins a concise introduction to nanotechnology, carefully explaining the relationships between science, technology, wealth and innovation. Next, it focuses on actual products and processes, including the big three areas of application, health, IT and energy. Different types of nanobusiness (upstream, downstream, ancillary etc.), are also carefully delineated, and aspects such as design and realization (e.g., actual fabrication) are also covered, amongst other timely topics. This book offers a vision of the role of nanotechnology in confronting the challenges facing humanity, from healthcare to climate change. Written by an author who has direct, hands-on experience working in a large nanotechnology-based company, in academia as a professor and chair of nanotechnology, and as the co-owner and director of a nanotechnology-based start-up Presents comprehensive coverage in an integrated fashion, not wasting space on trivial details that, if not already known to the reader, can be readily found in generic sources Thoroughly revised, reflecting advances in the field Includes areas that have been expanded into nanotechnology, such as health, and the safety of nano products and processes