

Nanotechnology

[Nanotechnology Handbook](#)

Author: H. Panda

Format: Paperback

Book Code: NI222

Pages: 680

ISBN: 9788178331249

Price: Rs. 1,675.00 US\$ 150.00

Nanoscience is an interdisciplinary field that have encompassed physics, biology, engineering chemistry and computer science, among others, the prefix nano appears with increasing frequency in scientific journals and the news. Thus, as we increase our ability to fabricate computer chips with smaller features and improve our ability to cure disease at the molecular level, nanotechnology is at the doorstep. Scientists and engineers believe that the fabrication of nanomachines, nanoelectronics, and other nanodevices will help to solve numerous problems faced by mankind today related to energy, health, and materials development. In nanoelectronics there are two opposing developments: the lithographic scaling down of semiconductor components tending towards the sub10 nanometer region to supramolecular self assembling macroscopic structure with new properties. Currently the trends are mixed and one can build a variety of structures of all scales. For example one can build large scale supramolecular structures serving as templates for building circuits with nanoscale components. On the nanoelectronics architecture side, there have also been many interesting developments trying to cope with the increasing density and smallness of components and the needs of self assembly and fault tolerance. In the emerging field of nanotechnology, the production of nanostructures having special physical and chemical properties with respect to those of bulk materials is an objective due to their limited size and high density of corner or edge surface sites. Metal nanoparticles have received significant scientific and technological interest because of their use in applications such as catalysis, electronics, optics, optoelectronics, biological and chemical sensing and SERS. Nanotechnology is now creating a growing sense of excitement in the life sciences, especially biomedical devices and biotechnology, as there is an immense opportunity to arrange and rearrange molecular structures. The global market for nanotechnology products is worth an estimated compound annual growth rate (CAGR) of 11.1% from 2010 to 2015. The largest segment of the market, made up of nanomaterials, is expected to increase at a 5 year CAGR of 14.7% The book contains polymeric nanofibres, synthesis of nanostructure, analysis of electron currents through nanojunctions, water soluble carbon nanotubes, nanoelectronic switching networks, growth of

silica nanorods, magnetic nanostructures, nanomachining of microscope tips and carbon nanotubes, nanocrystalline semiconductors and many more. The present book is a sincere attempt to make the readers aware of the evolutionary trends underlying modern engineering practice which are grounded not only on the tried & true principles & techniques of the past, but also on more recent & current advances. This book will be an invaluable resource to technocrats, researches new entrepreneurs, technical institutions & introduction to this field.

NANOSCIENCE AND NANOTECHNOLOGY HANDBOOK

Author: H. Panda

Format: Paperback

Book Code: NI225

Pages: 608

ISBN: 9788178331263

Price: Rs. 1,675.00 US\$ 150.00

Nanotechnology is the engineering of functional systems at the molecular scale. In its original sense, nanotechnology refers to the projected ability to construct items from the bottom up, using techniques and tools being developed today to make complete, high performance products. In this rising world of rapid technological developments, the role of state of art materials & composites is pivotal in frontier applications like aerospace, aviation, automobile, defense, electronics, chemical, biomedical, energy & nuclear sectors etc. with the advent of 21st century & initiation of Nanotechnology the atomic & molecular structures of materials is redefined. This shall result in new smart materials namely nanoparticles, powder, wires, rods, carbon nano tubes & so on.

Nanotechnology is very diverse, ranging from novel extensions of conventional device physics, to completely new approaches based upon molecular self-assembly, to developing new materials with dimensions on the nanoscale, even to speculation on whether we can directly control matter on the atomic scale. Potential of nanotechnology to manipulate and program matter with atomic precision has invited the attention of scientists to explore innumerable applications of nanotechnology was an inspiration for the benefit of researchers, academicians and industries associated with this field. The global market for nanotechnology products is worth an estimated compound annual growth rate (CAGR) of 11.1% from 2010 to 2015. The largest segment of the market, made up of nanomaterials, is expected to increase at a 5 year CAGR of 14.7%. This book basically deals with design of protein based nanomachines, metastabilities in nanocrystalline, nanoscale characterization of nanowires, thermopower measurements on nickel nanowires, a nanoporous tio₂ electrode, nanoscale in investigation of ultrathin, silicone oxide thermal decomposition, cylindrical nanodot arrays, nanocrystalline silicon films, dispersion of carbon nanotubes, electrical conductivity study of nanocomposite films, magnetic properties of nanospheres, generation spectroscopy of nanoparticle monolayer, au nanoparticles on light emitting polymers, etc. This handbook deals with the technology frontiers, its applications, the current & future challenges etc. This book will be an invaluable resource to all academicians, industrialists, scientists, upcoming entrepreneurs &

technocrats.

About NIIR

NIIR PROJECT CONSULTANCY SERVICES (NPCS) is a reliable name in the industrial world for offering integrated technical consultancy services. NPCS is manned by engineers, planners, specialists, financial experts, economic analysts and design specialists with extensive experience in the related industries.

Our various services are: Detailed Project Report, Business Plan for Manufacturing Plant, Start-up Ideas, Business Ideas for Entrepreneurs, Start up Business Opportunities, entrepreneurship projects, Successful Business Plan, Industry Trends, Market Research, Manufacturing Process, Machinery, Raw Materials, project report, Cost and Revenue, Pre-feasibility study for Profitable Manufacturing Business, Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Business Opportunities, Investment Opportunities for Most Profitable Business in India, Manufacturing Business Ideas, Preparation of Project Profile, Pre-Investment and Pre-Feasibility Study, Market Research Study, Preparation of Techno-Economic Feasibility Report, Identification and Section of Plant, Process, Equipment, General Guidance, Startup Help, Technical and Commercial Counseling for setting up new industrial project and Most Profitable Small Scale Business.

NPCS also publishes various process technology, technical, reference, self employment and startup books, directory, business and industry database, bankable detailed project report, market research report on various industries, small scale industry and profit making business. Besides being used by manufacturers, industrialists and entrepreneurs, our publications are also used by professionals including project engineers, information services bureau, consultants and project consultancy firms as one of the input in their research.

NIIR PROJECT CONSULTANCY SERVICES , 106-E, Kamla Nagar, New Delhi-110007, India. **Email:** npcs.india@gmail.com **Website:** NIIR.org

Sun, 21 Oct 2018 13:53:29 +0530