1. Record Nr. UNINA9910829009103321

Autore	Allhoff Fritz
Titolo	What is nanotechnology and why does it matter : from science to ethics / / Fritz Allhoff, Patrick Lin, and Daniel Moore
Pubbl/distr/stampa	Malden, MA, : Wiley- Blackwell, 2010
ISBN	0-470-08416-2 9786612455582 1-4443-1800-4 1-282-45558-3 1-4443-1799-7
Edizione	[1st ed.]
Descrizione fisica	1 online resource (305 p.)
Altri autori (Persone)	LinPatrick MooreDaniel <1979->
Disciplina	620.5
Soggetti	Nanotechnology Nanotechnology - Moral and ethical aspects
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	What Is Nanotechnology and Why Does It Matter?; Contents; Preface; Unit I What Is Nanotechnology?; 1 The Basics of Nanotechnology; 1.1 Definitions and Scales; 1.2 The Origins of Nanotechnology; 1.3 The Current State of Nanotechnology; 1.4 The Future of Nanotechnology; 1.5 Nanotechnology in Nature and Applications; 2 Tools of the Trade; 2.1 Seeing the Nanoscale; 2.2 Basic Governing Theories; 3 Nanomaterials; 3.1 Formation of Materials; 3.2 Carbon Nanomaterials; 3.3 Inorganic Nanomaterials; 4 Applied Nanotechnology; 4.1 Using Nanomaterials; 4.2 Nanotechnology Computing and Robotics 4.3 Predicting the Future of TechnologyUnit II Risk, Regulation, and Fairness; 5 Risk and Precaution; 5.1 Risk; 5.2 Cost-Benefit Analysis; 5.3 Precautionary Principles; 5.4 Evaluating the Precautionary Principle; 6 Regulating Nanotechnology; 6.1 The Stricter-Law Argument; 6.2 Learning from History; 6.3 Objections to the Stricter-Law Argument; 6.4 An Interim Solution?; 6.5 Putting the Pieces Together; 7 Equity and Access; 7.1 Distributive Justice; 7.2 Nanotechnology and the Developing World; 7.3 Water Purification; 7.4 Solar Energy; 7.5

Medicine

7.6 Nanotechnology, the Developing World, and Distributive JusticeUnit III Ethical and Social Implications; 8 Environment; 8.1 Society, Technology, and the Environment; 8.2 Environmental Risks of Nanotechnology; 8.3 Nanotechnology Solutions to Environmental Problems; 8.4 Overall Assessments: Risk and Precaution; 9 Military; 9.1 The Military and Technology; 9.2 A Nano-Enabled Military; 9.3 A Nano-Enabled Defense System; 9.4 Ethical Concerns; 10 Privacy; 10.1 Historical and Legal Background; 10.2 Philosophical Foundations; 10.3 Radio Frequency Identity Chips; 10.4 Item-Level Tagging
10.5 Human Implants10.6 RFID-Chipped Identification; 10.7 Is RFID a Threat to Privacy?; 11 Medicine; 11.1 The Rise of Nanomedicine; 11.2 Diagnostics and Medical Records; 11.3 Treatment; 11.4 Moving Forward; 12 Human Enhancement; 12.1 What is Human Enhancement?; 12.2 Defining Human Enhancement; 12.3 The Therapy-Enhancement Distinction; 12.4 Human Enhancement Scenarios; 12.5 Untangling the Issues in Human Enhancement; 12.6 Restricting Human Enhancement Technologies?; 13 Conclusion; 13.1 Chapter Summaries; 13.2 Final Thoughts and Future Investigations; References; Index

Sommario/riassunto

Ongoing research in nanotechnology promises both innovations and risks, potentially and profoundly changing the world. This book helps to promote a balanced understanding of this important emerging technology, offering an informed and impartial look at the technology, its science, and its social impact and ethics.Nanotechnology is crucial for the next generation of industries, financial markets, research labs, and our everyday lives; this book provides an informed and balanced look at nanotechnology and its social impactOffers a comprehensive background discussion on