1. Record Nr. UNINA9910686500803321

Titolo	1D semiconducting hybrid nanostructures : synthesis and applications in gas sensing and optoelectronics / / edited by Arvind Kumar, Dinesh K. Aswal, Nirav Joshi
Pubbl/distr/stampa	Weinheim, Germany : , : Wiley-VCH GmbH, , [2023] ©2023
ISBN	3-527-83764-7 3-527-83766-3
Descrizione fisica	1 online resource (365 pages)
Disciplina	730
Soggetti	Nanostructured materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover -- Title Page -- Copyright Page -- Contents -- Preface -- Chapter 1 One-Dimensional Semiconducting Hybrid Nanostructure: Gas Sensing and Optoelectronic Applications -- 1.1 Introduction -- 1.2 Synthesis of 1D Hybrid Nanostructures -- 1.2.1 Top-Down Approach -- 1.2.2 Bottom-Up Approach -- 1.2.2.1 Nanotubes -- 1.2.2.2 Nanowires -- 1.2.2.3 Nanorods -- 1.3 Applications of 1D Hybrid Nanostructures -- 1.3.1 Gas Sensing -- 1.3.1.1 Safety Monitoring of Exhaust Gases in Automobile -- 1.3.1.2 Health Monitoring -- 1.3.1.3 Environmental Monitoring -- 1.3.2 Optoelectronic Application -- 1.3.2.1 Photodetector -- 1.3.2.2 Solar Cell -- 1.3.2.3 Light-Emitting Diode -- 1.4 Conclusions -- Acknowledgment -- References -- Chapter 2 Synthesis and Gas-Sensing Application of 1D Semiconducting Hybrid Nanostructures -- 2.1 Introduction -- 2.2 Noble Metal-Functionalized 1D Metal Oxide Semiconductors for Gas Sensors -- 2.3 1D Metal Oxide/Metal Oxide Heterojunctions-Based Gas Sensors -- 2.4 Conducting Polymer/1D Metal Oxide Nanocomposites for Gas Sensors -- 2.5 Hybrid Conducting Polymer/Carbon Nanotube-Based Gas Sensors -- 2.6 Conclusion and Future Perspectives -- Acknowledgment -- References -- Chapter 3 Room-Temperature Gas-Sensing Properties of Metal Oxide Nanowire/Graphene Hybrid Structures -- 3.1 Introduction -- 3.2