

1. Record Nr.	UNINA9910437801003321
Titolo	Metal oxide nanomaterials for chemical sensors // Michael A. Carpenter, Sanjay Mathur, Andrei Kolmakov, editors
Pubbl/distr/stampa	New York, : Springer, 2013
ISBN	1-4614-5395-X
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (558 p.)
Collana	Integrated analytical systems
Altri autori (Persone)	CarpenterMichael A MathurSanjay KolmakovAndrei
Disciplina	661.03 681.2 681/.2
Soggetti	Nanostructured materials
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	pt. I. Understanding, characterization and synthesis of modern metal oxide nanomaterials -- pt. II. Novel morphologies and signal transduction principles in metal oxide-based sensors -- pt. III. New device architectures and integration challenges.
Sommario/riassunto	This book presents a state-of-the-art account and critical analysis of of the science and technology of metal oxide nanomaterials based chemical sensors. It documents the impact of nanotechnology on sensor science by leading research laboratories and the implementation of metal oxide nanomaterial research methodologies for the discovery and optimization of new sensor materials and sensing systems. The book provides a detailed description of (i) The current understanding of metal oxide sensing principles, (ii) Advances in metal oxide nanomaterial synthesis and multi-material architectures as well as the interplay of structure/composition and function (iii) Analysis of techniques utilized for the development of advanced metal oxide nanomaterial sensors, thus enabling a broad impact into sensor applications, (iv) Advances, challenges and insights gained from the in situ/ex situ analysis of reaction mechanisms and miniaturization, and (v) Technical development and materials integration challenges in

the fabrication of sensing arrays and devices.

---