

1. Record Nr.	UNINA9910634053103321
Titolo	Ferroelectric Random Access Memories [[electronic resource]] : Fundamentals and Applications // edited by Hiroshi Ishiwara, Masanori Okuyama, Yoshihiro Arimoto
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2004
ISBN	3-540-45163-3
Edizione	[1st ed. 2004.]
Descrizione fisica	1 online resource (XIII, 291 p.)
Collana	Topics in Applied Physics, , 0303-4216 ; ; 93
Disciplina	621.39/73
Soggetti	Metals Optical materials Electronic materials Condensed matter Solid state physics Spectroscopy Microscopy Metallic Materials Optical and Electronic Materials Condensed Matter Physics Solid State Physics Spectroscopy and Microscopy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Part I Ferroelectric Thin Films: Overview -- Novel Si-substituted Ferroelectric Films -- Static and Dynamic Properties of Domains -- Nanoscale Phenomena in Ferroelectric Thin Films -- Part II Deposition and Characterization Methods: Sputtering Techniques -- Chemical Approach Using Tailored Liquid Sources to Bi-based Layer-structured Perovskite Thin Films -- Recent Development of Ferroelectric Thin Films by MOCVD -- Materials Integration Strategies -- Characterization by Scanning Nonlinear Dielectric Microscopy -- Part III Fabrication Process and Circuit Design: Current Status of FeRAMs -- Operation

Principle and Circuit Design Issues -- High Density Integration -- Testing and Reliability -- Part IV Advanced-Type Memories: Chain FeRAMs -- Capacitor-on-Metal/Via-stacked-Plug (CMVP) Memory Cell and Application to a Non-volatile SRAM -- FET-type FeRAMs -- Part V Applications and Future Prospects: Application to Future Information Technology World -- Subject Index.

Sommario/riassunto

In fabrication of FeRAMs, various academic and technological backgrounds are necessary, which include ferroelectric materials, thin film formation, device physics, circuit design, and so on. This book covers from fundamentals to applications of ferroelectric random access memories (FeRAMs). The book consists of 5 parts; (1) ferroelectric thin films, (2) deposition and characterization methods, (3) fabrication process and circuit design, (4) advanced-type memories, and (5) applications and future prospects, and each part is further divided in several chapters. Because of the wide range of the discussed topics, each chapter in this book was written by one of the best authors knowing the specific topic very well. Thus, this is a good introduction book of FeRAM for graduate students and new comers to this field, as well as it helps specialists to understand FeRAMs more deeply.
