DESCRIPTION

A wealth of information in one accessible book. Written by international experts from multidisciplinary fields, this in-depth exploration of oxide ultrathin films covers all aspects of these systems, starting with preparation and characterization, and going on to geometrical and electronic structure, as well as applications in current and future systems and devices.

From the Contents:

• Synthesis and Preparation of Oxide Ultrathin Films
• Characterization Tools of Oxide Ultrathin Films
• Ordered Oxide Nanostructures on Metal Surfaces
• Unusual Properties of Oxides and Other Insulators in the Ultrathin Limit
• Silica and High-K Dielectrics Thin Films in Microelectronics
• Oxide Passive Films and Corrosion Protection
• Oxide Films as Catalytic Materials and as Models of Real Catalysts
• Oxide Films in Spintronics
• Oxide Ultrathin Films in Solid Oxide Fuel Cells
• Transparent Conducting and Chromogenic Oxide Films as Solar Energy Materials

• Oxide Ultrathin Films in Sensor Applications

• Ferroelectricity in Ultrathin Film Capacitors

• Titania Thin Films in Biocompatible Materials and Medical Implants

• Oxide Nanowires for New Chemical Sensor Devices

---

**ABOUT THE AUTHOR**

Prof. Gianfranco Pacchioni is the Vice-Director of the Department of Materials Science at the University of Milano Bicocca. He received his degree in Chemistry from the University of Milan and was awarded his Ph. D. in Physical Chemistry from the Freie Universität Berlin, Germany. Prof. Pacchioni’s research activity is directed towards theoretical aspects of surface science and materials science, with particular emphasis on the properties of oxide materials, oxide ultrathin films and supported metal nanoclusters. He is author of about 400 papers, has edited a number of books and is on the editorial board of several journals.

Prof. Sergio Valeri is Director of the Department of Physics at the University of Modena and Reggio Emilia. He received his degree in Physics from the University of Bologna, Italy. Prof. Valeri’s research concentrates on solid surfaces and interfaces and low dimensional systems with emphasis on structural and electronic characterization of metal-semiconductor, metal-metal and metal-oxide thin and ultrathin films and interfaces, on the interaction of energetic particles with solid surfaces, and on the development of electron spectroscopies. Prof. Valeri has authored ca 200 papers in international refereed scientific journals.

---

For additional product details, please visit [https://www.wiley.com/en-us](https://www.wiley.com/en-us)