

# Metal Oxides Series

Series Editor  
Ghenadii Korotcenkov

## Metal Oxide Defects

Fundamentals, Design, Development  
and Applications

Edited by  
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# Metal Oxides Series

## Metal Oxide Defects

### Fundamentals, Design, Development and Applications

*Metal Oxide Defects: Fundamentals, Design, Development and Applications* provides a broad perspective on the development of advanced experimental techniques to study defects and their chemical activity and catalytic reactivity in various metal oxides. This book highlights advances in characterization and analytical techniques to achieve better understanding of a wide range of defects, most importantly, state-of-the-art methodologies for controlling defects. The book provides readers with pathways to apply basic principles and interpret the behavior of metal oxides.

After reviewing characterization and analytical techniques, the book focuses on the relationship of defects to the properties and performance of metal oxides. Finally, there is a review of the methods to control defects and the applications of defect engineering for the design of metal oxides for applications in optoelectronics, energy, sensing, and more. This book is a key reference for materials scientists and engineers, chemists, and physicists.

#### Key Features

- Reviews advances in characterization and analytical techniques to understand the behavior of defects in metal oxide materials
- Introduces defect engineering applied to the design of metal oxide materials with desirable properties
- Discusses applications of defect engineering to enhance the performance of materials for a wide range of applications, with an emphasis on optoelectronics

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