

## Preface

Functional materials are generally characterized as those materials which possess particular native properties and functions of their own, including electrical, magnetic, optical, thermionic, acoustic, mechanic, chemical, biological functions.

Functional materials are found in all classes of materials: ceramics, metals, polymers and organic molecules. Functional materials are often used in information engineering, bioengineering, energy conversion and storage, environmental engineering, space engineering, and so forth.

The development of functional materials is at the heart of technological needs and the forefront of materials research. This book provides a comprehensive and up-to-date treatment of functional materials. There are seven chapters in this book: Metallic, Magnetic and Electric Functional Materials, Nano and Inorganic Functional Materials, Organic and Polymer Functional Materials, Functional Materials for Storage and Conversion of Energy, Thin Film, Membrane and Coating Materials, Functional Materials for Biomedical Engineering and Biotechnologies, Environment and Building Functional Materials.

This book aims to collect the up-to-date reports of functional materials research achievements. The book would appeal to researchers who work on functional materials study. The readers of this book could find wide range of topics in functional materials field.

The contribution of every author to this book should be highly appreciated. Moreover, the book could not be successfully published without the hard work of all the editors. Thanks to all the contributors and supporters of this book. Any suggest or criticism for the shortcomings of this book would be welcomed.