

Preface

The field of research into advanced metallic and ceramic thin film materials for energy and environmental applications has been rapidly moving forward. This book provides the latest information of the developments in the field. It also gives the perspective of future research. This book collects the contributions by several established worldwide researchers from academia, industry, and a government research laboratory. The book covers the fundamental mechanisms, processing, and applications of advanced thin film and coating materials.

The book covers a broad range of topics related to thin film and coating materials, including overview of advanced ceramic and metallic coatings, surface modification, magnetic materials, thermoelectric materials, solar energy materials, solid oxide fuel cells, coatings in solid-phase microextraction process, and modeling and simulation of thin film materials.

This book is primarily aimed at researchers in thin film and coating fields in both academia and industry. It can be used as a reference book for graduate and undergraduate students in materials science and mechanical engineering.

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