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*“This book is a great introduction to energy materials, and I would certainly recommend it to my students. With simple prose, useful diagrams, and essential equations, this book is not a mere summary of current energy materials applications, but a tool for students and for those working in the field. This book explores how the fundamental materials research fields of energy generation, energy storage, and energy conversion are interlinked in a complex relationship, and how this relationship must adapt to a landscape of ever-increasing world energy consumption.”*

**Dr. Suman-Lata Sahonta**  
University of Cambridge, UK

*“This book is a comprehensive collection of the latest advancement in the materials science research for energy applications. It comes at a unique point in time when the search for sustainable alternative sources of energy could not be more relevant. This is an interesting introduction to both conventional and exotic applications written by recognized authors in the field and also provides a solid background and in-depth discussion of various topics.”*

**Dr. Giorgio Ercolano**  
Université de Montpellier, France

Increasing energy demand worldwide has led to enormous research efforts in the development of sustainable energy technologies. Functional materials are essential components of any such technology, and improving their performance is key for these technologies to succeed. The purpose of this book is to give a unified and comprehensive presentation of the fundamentals behind the functional materials that are employed in a wide range of sustainable energy applications, i.e., conversion, storage, transmission and consumption. The chapters are primarily written by distinguished young researchers actively working in relevant fields, and are conceived to be readily adapted into teaching material.



**Xavier Moya** is a Royal Society University Research Fellow in the Department of Materials Science & Metallurgy at the University of Cambridge. He is interested in phase transitions in functional materials whose structural, magnetic, electrical, and thermal properties display strong coupling. His research focuses primarily on caloric materials for cooling applications and magnetoelectric materials for data storage.



**David Muñoz-Rojas** is a CNRS researcher at the Laboratoire des Matériaux et du Génie Physique in Grenoble, France. His research focuses on using and developing cheap and scalable chemical approaches for the fabrication of novel functional materials for electronic and optoelectronic applications. In particular, he has pioneered the development of the novel spatial atomic layer deposition (SALD) technique for the deposition of active components for optoelectronic devices. He is currently further developing SALD to extend the possibilities and fields of application of this exciting technique.



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