

## **FUNCTIONAL AND SMART MATERIALS -Structural evolution and structure analysis**

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### **Editorial Reviews**

*From Book News, Inc.*

Describes several crystal structure systems that are frequently observed in oxide functional materials, examining basic modules that are the building blocks of all related structures. Links the structural evolution of each system with mixed valences of rare-earth and transitional metal elements. Early chapters describe structure types such as rock, salt, and rutile, with an emphasis on connection among different structure systems. Later chapters are devoted to soft chemistry and to techniques and technologies for studying these compounds and their properties. Includes some 330 b&w figures, and FORTRAN codes for calculation of crystal structure data and electron energy-loss spectra. For researchers and graduate students in materials science, solid-state chemistry and physics, mineralogy, and electron microscopy. *Book News, Inc.*®, *Portland, OR*

"Both new in concept and timely in publication....Bring together, for the first time, the fundamental of atomic scale crystal structure and chemistry... A cutting-edge text at the forefront of the modern materials revolution"

**- Professor David B. Williams, Lehigh University, USA**

"Unique...focuses specifically on the intrinsic connections among several crystal structure systems and their evolution behavior...Fills a gap left in the field ... This book will be a basic reference in the domain of oxides which are to be the basis of functional and smart materials"

**- Professor C. Boulesteix, Universite Aix-Marseille, France.**

"In materials science the spotlight is on functional and smart materials, since they are important components for electronic devices. The textbook by Wang and Kang summarizes all types of known functional materials and describes the structure evolution problems. A large section of the book is devoted to structural characterization focusing on transmission electron microscopy, the main field of expertise of the author. The book is extremely valuable for materials scientists working on functional oxide materials, studying the structure, structure evolution and defects. It may serve also as an interesting textbook for teaching since it gives a good overview of this field which is of increasing importance. The clarity of its writing style should make it ideally suited for graduate students."

**- Professor Manfred Ruhle, Institute of Werkstoffwissenschaft, Germany**