DESCRIPTION

This textbook introduces the reader to the elementary chemistry on which materials science depends by discussing the different classes of materials and their applications. It shows the reader how different types of materials are produced, why they possess specific properties, and how they are used in technology. Each chapter contains study questions to enable discussions and consolidation of the acquired knowledge.

The new edition of this textbook is completely revised and updated to reflect the significant expansion of the field of materials chemistry over the last years, covering now also topics such as graphene, nanotubes, light emitting diodes, extreme photolithography, biomedical materials, and metal organic frameworks.

From the reviews of the first edition:

"This book is not only informative and comprehensive for a novice reader, but also a valuable resource for a scientist and/or an industrialist for new and novel challenges." (Materials and Manufacturing Process, June 2009)
"Allcock provides a clear path by first describing basic chemical principles, then distinguishing between the various major materials groups, and finally enriching the student by offering a variety of special examples." (CHOICE, April 2009)

"Proceeding logically from the basics to materials in advanced technology, it covers the fundamentals of materials chemistry, including principles of materials synthesis and materials characterization methods." (Internationale Fachzeitschrift Metall, January 2009)

ABOUT THE AUTHOR

HARRY R. ALLCOCK, P HD, is an Evan Pugh Professor of Chemistry at The Pennsylvania State University. His research interests include applications of chemical synthesis to polymer chemistry, materials science, energy research, and biomedicine; and the correlation of molecular structure with properties for hybrid inorganic-organic macromolecules and materials.

To purchase this product, please visit https://www.wiley.com/en-us/9781119341192