DESCRIPTION

The first part of Semiconducting Polymer Composites describes the principles and concepts of semiconducting polymer composites in general, addressing electrical conductivity, energy alignment at interfaces, morphology, energy transfer, percolation theory and processing techniques. In later chapters, different types of polymer composites are discussed: mixtures of semiconducting and insulating or semiconducting and semiconducting components, respectively. These composites are suitable for a variety of applications that are presented in detail, including transistors and solar cells, sensors and detectors, diodes and lasers as well as anti-corrosive and anti-static surface coatings.

ABOUT THE AUTHOR

Xiaoniu Yang is the Head of the Center for Polymer Composite Engineering at the Changchun Institute of Applied Chemistry (CIAC) of the Chinese Academy of Sciences (CAS). Having obtained his academic degrees from CIAC, he spent a few years in Germany and the Netherlands before taking up his present appointment at CIAC. Professor Yang has authored more than sixty scientific publications, filed sixteen patents and received the National Science Foundation Award for Distinguished Young Scholars of China in 2009. He is also a member of the commission for Applied Chemistry of the Chinese Chemical Society.