DESCRIPTION

This book is a comprehensive source of information on various aspects of ceramic matrix composites (CMC). It covers ceramic and carbon fibers; the fiber-matrix interface; processing, properties and industrial applications of various CMC systems; architecture, mechanical behavior at room and elevated temperatures, environmental effects and protective coatings, foreign object damage, modeling, life prediction, integration and joining. Each chapter in the book is written by specialists and internationally renowned researchers in the field. This book will provide state-of-the-art information on different aspects of CMCs. The book will be directed to researchers working in industry, academia, and national laboratories with interest and professional competence on CMCs. The book will also be useful to senior year and graduate students pursuing degrees in ceramic science and engineering, materials science and engineering, aeronautical, mechanical, and civil or aerospace engineering.

• Presents recent advances, new approaches and discusses new issues in the field, such as foreign object damage, life predictions, multiscale modeling based on probabilistic approaches, etc.

• Caters to the increasing interest in the application of ceramic matrix composites (CMC) materials in areas as diverse as aerospace, transport, energy, nuclear, and environment. CMCs are considered an enabling technology for advanced aeropropulsion, space propulsion, space power, aerospace vehicles, space structures, as well as nuclear and chemical industries.

• Offers detailed descriptions of ceramic and carbon fibers; fiber-matrix interface; processing, properties and industrial applications of various CMC systems; architecture, mechanical behavior at room and elevated temperatures, environmental effects and protective coatings, foreign object damage, modeling, life prediction, integration/joining.
Dr. Narottam P. Bansal is a Senior Research Scientist in the Ceramic and Polymer Composites Branch, Materials and Structures Division, at NASA Glenn Research Center. Previously, he was a post-doctoral fellow at the University of Alberta in Edmonton, Alberta, Canada and research associate at Rensselaer Polytechnic Institute in Troy, New York. He is the author or editor of six books, 37 conference proceedings, six invited chapters, and three review articles. Dr. Bansal has to date published over 230 papers, including more than 100 peer-reviewed journal papers on glass, ceramics, and composites and holds seven US patents.

Dr. Jacques Lamon is Director of Research at CNRS (National Centre of Scientific Research). He recently joined the Laboratory for Mechanics and Technology (LMT) at Ecole Normale Supérieure Cachan (Paris, France). Before that he was Group Leader at LCTS (Laboratory for Thermostructural Composites, University of Bordeaux/CNRS, France), and Professor at the University of Bordeaux, France. He earned his PhD in materials science and engineering in 1978 from Ecole Nationale Supérieure des Mines. He is the author of one book, twelve invited chapters, fourteen conference proceedings, and three journal special issues. He has written over 200 articles on ceramics and ceramic matrix composites.

For additional product details, please visit https://www.wiley.com/en-us