



Book

MXene Nanocomposites

Design, Fabrication, and Shielding Applications

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ABSTRACT

MXenes offer single step processing, excellent electrical conductivity, easy heat dissipation behavior, and capacitor-like properties and are used in photodetectors, lithium-ion batteries, solar cells, photocatalysis, electrochemiluminescence sensors, and supercapacitors. Because of their superior electrical and thermal conductivities, these composites are an ideal choice in electromagnetic interference (EMI) shielding. *MXene Nanocomposites: Design, Fabrication, and Shielding Applications* presents a comprehensive overview of these emerging materials, including their underlying chemistry, fabrication strategies, and cutting-edge applications in EMI shielding.

- Covers modern fabrication technologies, processing, properties, nanostructure formation, and mechanisms of reinforcement
- Discuss biocompatibility, suitability, and toxic effects
- Details innovations, applications, opportunities, and future directions in EMI shielding applications

This book is aimed at researchers and advanced students in materials science and engineering and is unique in its detailed coverage of MXene-based polymer composites for EMI shielding.

Editor Biographies

Dr. Poushali Das is a senior postdoctoral research fellow at McMaster University in Canada. She completed a PhD from the Indian Institute of Technology in Kharagpur. She has more than 45 research publications in reputed international journals.

Dr. Andreas Rosenkranz is Professor of Materials-Oriented Tribology and New 2D Materials in the Department of Chemical Engineering, Biotechnology and Materials at the University of Chile. He has published more than 100 peer-reviewed journal publications, is a fellow of the Alexander von Humboldt Foundation, and acts as a scientific editor for different well-reputed scientific journals, including *Applied Nanoscience* and *Frontiers in Chemistry*.

Dr. Sayan Ganguly is a senior postdoctoral researcher at University of Waterloo, Canada. He obtained his PhD from the Indian Institute of Technology in Kharagpur. He has published more than 70 papers and chapters in international journals and books.