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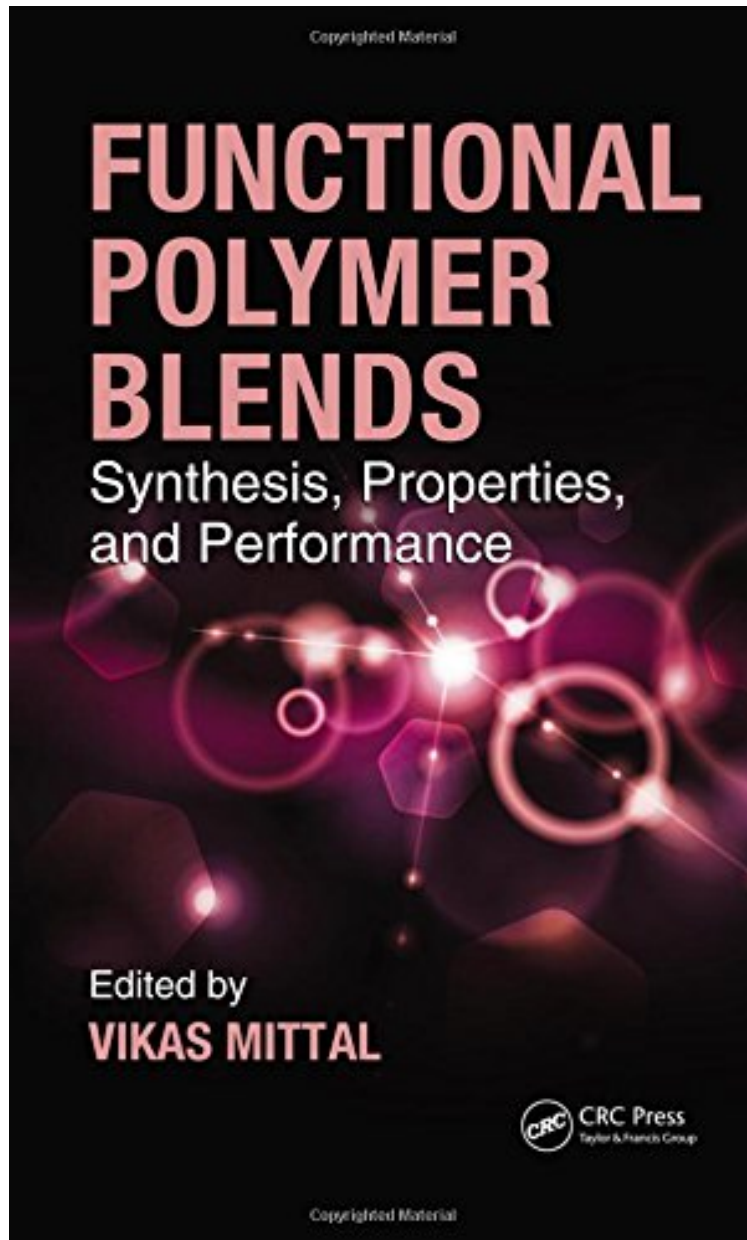
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[FREE] Functional Polymer Blends: Synthesis, Properties, and Performance

Functional Polymer Blends: Synthesis, Properties, and Performance

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With their broad range of properties, polymer blends are widely used in adhesion, colloidal stability, the design of composite and biocompatible materials, and other areas. As the science and technology of polymer blends advances, an increasing number of polymer blend systems and applications continue to be developed. *Functional Polymer Blends: Synthesis, Properties, and Performance* presents the latest synthesis and characterization methodologies for generating polymer blend systems. This one-stop resource brings together both experimental and theoretical material, much of which has previously only been available in research papers. Featuring contributions by eminent international experts, the book:

- Reviews polymer blend systems
- Details miscibility enhancements in polymer blends through multiple hydrogen binding interactions
- Presents the component dynamics in polymer blend systems
- Discusses concepts of shape memory polymer blends
- Considers ethylene methyl acrylate (EMA) copolymer toughened polymethyl methacrylate (PMMA) blends
- Provides theoretical insights through molecular dynamics simulation studies for binary blend miscibility
- Reports on the conformation and topology of cyclic linear polymer blends (CLBs)
- Addresses strain hardening in polymer blends with fibril morphology
- Explores the modification of polymer blends by irradiation techniques
- Examines the directed assembly of polymer blends using nanopatterned chemical surfaces

Combining background and advanced information on technologies, methods, and applications, this practical reference is a must-have for researchers and industry professionals as well as students in materials science, chemistry, and chemical and surface engineering.

"This book is well organized and written for PhD students and professionals in polymer science and technology. Fundamental knowledge on polymer blends is presented with a well-organised introduction to the polymer blend systems and the method for the miscibility enhancement. The audience can gain necessary information on recent progress in the preparation, characterisation, and applications of polymer blends. The introduction on shape memory polymer blends, strain hardening in polymer blends, and directed assembly of polymer blends exhibits active research directions in the field of polymer blends." Professor Mo Song, Loughborough University, Leicestershire, UK " captures several elements missing in other published volumes on polymer blends. Examples are extensive coverage on hydrogen bonding, shape memory polymers, and cyclic linear polymer blends." Sadhan C. Jana, Department of Polymer Engineering, University of Akron, Ohio, USA

About the Author Vikas Mittal is an assistant professor of chemical engineering at The Petroleum Institute in the United Arab Emirates. He is the editor of numerous books on the topic of polymeric materials, including *Polymer Brushes: Substrates, Technologies, and Properties* (CRC Press, 2012), *Advances in Polyolefin Nanocomposites* (CRC Press, 2010), and *Advanced Polymer Nanoparticles: Synthesis and Surface Modifications* (CRC Press, 2010). Dr. Mittal has also worked in industry for BASF SE in Germany and Sun Chemical Group Europe in London. For more information about Dr. Mittal, see The Petroleum Institute website.