Polymer and Biopolymer Brushes: for Materials Science and Biotechnology
Omar Azzaroni (Editor), Igal Szleifer (Editor)


DESCRIPTION

Serves as a guide for seasoned researchers and students alike, who wish to learn about the cross-fertilization between biology and materials that is driving this emerging area of science

This book covers the most relevant topics in basic research and those having potential technological applications for the field of biopolymer brushes. This area has experienced remarkable increase in development of practical applications in nanotechnology and biotechnology over the past decade. In view of the rapidly growing activity and interest in the field, this book covers the introductory features of polymer brushes and presents a unifying and stimulating overview of the theoretical aspects and emerging applications. It immerses readers in the historical perspective and the frontiers of research where our knowledge is increasing steadily—providing them with a feeling of the enormous potential, the multiple applications, and the many up-and-coming trends behind the development of macromolecular interfaces based on the use of polymer brushes.

*Polymer and Biopolymer Brushes: Fundamentals and Applications in Materials* offers chapters on: Functionalization of Surfaces Using Polymer Brushes; Polymer Brushes by ATRP and Surface-Mediated RAFT Polymerization for Biological Functions; Electro-Induced Copper Catalyzed Surface Modification with Monolayer and Polymer Brush; Polymer Brushes on Flat and Curved Substrates; Biomimetic Anchors for Antifouling Polymer Brush Coating; Glycopolymer Brushes Presenting Sugars in Their Natural Form; Smart Surfaces Modified with Phenylboronic Acid-Containing Polymer Brushes; DNA Brushes; Polymer Brushes as Interfacial Materials for Soft Metal Conductors and Electronics; and more.

• Presents a comprehensive theory/simulation section that will be valuable for all readers
Polymer and Biopolymer Brushes: Fundamentals and Applications in Materials is aimed at both graduate students and researchers new to this subject as well as scientists already engaged in the study and development of polymer brushes.

ABOUT THE AUTHOR

OMAR AZZARONI, P HD, is currently the head of the Soft Matter Laboratory of INIFTA. His research interests include new applications of polymer brushes, nanostructured hybrid interfaces, supra- and macromolecular materials science, and soft nanotechnology.

IGAL SZLEIFER, P HD, is the Christina Enroth-Cugell Professor of Biomedical Engineering and Professor of Chemistry, Chemical and Biological Engineering and Medicine at Northwestern University. He is a fellow of the American Physical Society and of the American Institute of Medical and Biological Engineers.

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