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| Livello bibliografico   | Monografia  |
| Nota di contenuto       | Chapter1: Structural and mechanical characterization of supported model membranes by AFM -- Chapter2: To image the orientation and spatial distribution of reconstituted Na <sup>+</sup> ,K <sup>+</sup> -ATPase in model lipid membranes -- Chapter3: Asymmetric Model Membranes: Frontiers and Challenges -- Chapter4: Modelling of Cell Membrane Systems -- Chapter5: Molecular Dynamics Studies of Nanoparticle Transport Through Model Lipid Membranes -- Chapter6: Investigation of Cell Interactions on Biomimetic Lipid Membranes -- Chapter7: Tethered lipid membranes as platforms for biophysical studies and advanced |

biosensors -- Chapter8: Biomedical Applications: Liposomes and Supported Lipid Bilayers for Diagnostics, Theranostics, Imaging, Vaccine Formulation, and Tissue Engineering -- Chapter9: Lipid Bilayers and Liposomes on Microfluidics Realm: Techniques and Applications -- Chapter10: Biomimetic Model Membranes as Drug Screening Platforms -- Chapter11: Biomimetic Membranes as an Emerging Water Filtration Technology -- Chapter12: Applications of lipid membranes based biosensors for the rapid detection of food toxicants and environmental pollutants.

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Sommario/riassunto

This book compiles the fundamentals, applications and viable product strategies of biomimetic lipid membranes into a single, comprehensive source. It broadens its perspective to interdisciplinary realms incorporating medicine, biology, physics, chemistry, materials science, as well as engineering and pharmacy at large. The book guides readers from membrane structure and models to biophysical chemistry and functionalization of membrane surfaces. It then takes the reader through a myriad of surface-sensitive techniques before delving into cutting-edge applications that could help inspire new research directions. With more than half the world's drugs and various toxins targeting these crucial structures, the book addresses a topic of major importance in the field of medicine, particularly biosensor design, diagnostic tool development, vaccine formulation, micro/nano-array systems, and drug screening/development. Provides fundamental knowledge on biomimetic lipid membranes; Addresses some of biomimetic membrane types, preparation methods, properties and characterization techniques; Explains state-of-art technological developments that incorporate microfluidic systems, array technologies, lab-on-a-chip-tools, biosensing, and bioprinting techniques; Describes the integration of biomimetic membranes with current top-notch tools and platforms; Examines applications in medicine, pharmaceutical industry, and environmental monitoring.

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