Record Nr. UNINA9910862090003321 Autore Tian Limei Titolo Bioinspired Antifouling Surfaces: From Marine Applications to Biomedical Protections / / Rujian Jiang, Limei Tian, Huichao Jin, Wei Bing, Jie Zhao Les Ulis:,: EDP Sciences,, [2023] Pubbl/distr/stampa ©2023 **ISBN** 2-7598-2942-1 Edizione [1st ed.] Descrizione fisica 1 online resource (162 p.) Collana **Current Natural Sciences Series** Disciplina 620.44 Soggetti Fouling - Prevention Protective coatings Surfaces (Technology) MEDICAL / Biotechnology Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto Frontmatter -- Contents -- Foreword -- Chapter 1 Introduction to Biofouling and Bionics -- Chapter 2 Marine Biofouling and Surface Properties -- Chapter 3 Bioinspired Textured Surfaces for Marine Antifouling -- Chapter 4 Natural Antifoulants for Antifouling Surfaces -- Chapter 5 Other Nature-Inspired Marine Antifouling Surfaces --Chapter 6 Bioinspired Medical Surfaces -- Chapter 7 Bioinspired SLIPS for Medical Antifouling -- Chapter 8 Superhydrophobic Surfaces for Medical Antifouling -- Chapter 9 Bioinspired Mechanical Bactericidal Surfaces -- Chapter 10 Bioinspired Medical Drug-Delivery Surfaces --Conclusion Sommario/riassunto Biofouling on marine vessels and bacterial growth on biomedical surfaces bring huge economic loss to our society. Traditional antifouling and antibacterial surfaces contain toxic substances or antibiotics, which can threaten the environments and raise the risk of inducing drug-resistance strains. In the long-term evolution process of natural organisms, they present multiple functions through the joint action of their own morphology, structure, and other factors to achieve

the maximum adaptation to the environment. Many of natural

organisms have developed antifouling and antibacterial strategies. Inspired by these strategies, lots of artificial surfaces have been fabricated and tested. They are highly efficient and environmental-compatibility, and they have potential to achieve enhanced antifouling capabilities and desirable properties by combining the characteristics of novel materials. This book focuses on the research and application of bioinspired antifouling surfaces in the two major fields—marine industry and biomedical field. It is intended for mechanical manufacturing and biomedical researchers, enthusiasts and students.