图书基本信息

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内容概要

Formation of microcolonies on surfaces is an important bacterial survival strategy. These so-called biofilms occur on both inert and living systems, making them important to a wide range of scientific disciplines. For instance, biofilms have important engineering implications, such as in mining industries, the corrosion of pipelines and pure and waste water industries. Biofilms have medical significance when associated with the mouth, urinary tract, and urinogenital tract. In addition, they form in plant root systems and in animals, such as in the ruminant digestive tract, and so are agriculturally important. This book is unique in that it is one of the first to cover the medical, industrial, and ecological aspects of this field. The first section provides an analysis of the chemical, ecological and physical processes involved with the development of biofilms and their interactions with surfaces. The next section deals with biofilms on non-living surfaces. The final section examines interactions with living surfaces.

书籍目录

Introduction Part . Structure, Physiology and Ecology of Biofilms: 1. The formation of microcolonies and functional consortia within biofilms 2. Dynamics of bacterial biofilm formation 3. Cultivation and study of 4. Genetic responses to bacteria at surfaces 5. Biochemical reactions and the biofilm communities establishment of gradients within biofilms 6. Mechanisms of the protection of bacterial biofilms from antimicrobial agents Part . Biofilms and Inert Surfaces: 7. Biofilm development in purified water systems 8. Mineralized bacterial biofilms in sulphide tailings and in acid mine drainage systems 9. Biofilms and microbially 10. Microbial consortia in industrial waste water treatment influenced corrosion 11. Heterogeneous mosaic biofilm - a haven for water borne pathogensPart . Biofilms on the Surfaces of Living Cells: 12. The rhizosphere 13. Biofilms of the ruminant digestive tract 14. The immune response to bacterial biofilms as a biofilm 15. Bacterial biofilms in the biliary system 16. Biofilm-associated urinary tract infections 17. The role of the urogenital flora in probiotics 18. Dental plaqueIndex

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