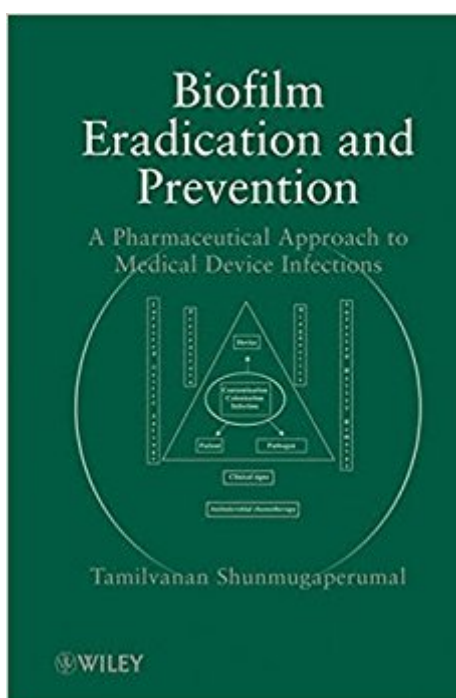


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# Biofilm Eradication And Prevention: A Pharmaceutical Approach To Medical Device Infections



## Synopsis

Biofilm Eradication and Preventions presents the basics of biofilm formation on medical devices, diseases related to this formation, and approaches pharmaceutical researchers need to take to limit this problem. Split into three parts, the first deals with the development and characterization of biofilm on the surfaces of implanted or inserted medical devices. Questions as to why biofilms form over medical device surfaces and what triggers biofilm formation are addressed. In the second section, the author discusses biofilm-mediated chronic infections occurred in various organs (eyes, mouth, wounds) and pharmaceutical and drug delivery knowledge gained from research in these area. The third part explores pharmaceutical approaches like lipid-and polymer-based drug delivery carriers for eradicating biofilm on device-related infections. In addition, this section also explores the topic of novel small molecule (like iron and its complexes/metal chelators) and a quorum-sensing inhibitors to control medical biofilm formation.

## Book Information

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New pharmaceutical approaches to managing infectious biofilm formation on medical devices As the use of implanted medical devices has grown, researchers have discovered that the non-shedding surfaces of medical devices often provide ideal substrata for colonization by biofilm-forming microbes. As a result, the incidence of biofilm-associated diseases among patients with implanted devices has also grown. In response, this book examines new and emerging pharmaceutical approaches to prevent or eradicate the formation of infectious biofilms on medical

devices. It also examines non-device-related biofilm infections. Moreover, the book offers the most current understanding of biofilm structure, composition, organization, and activities. Biofilm Eradication and Prevention is divided into three parts: Part 1, "Development and Characterization of Biofilm," explores what triggers biofilm formation and why biofilms form over medical device surfaces as well as human tissue and organs. Part 2, "Biofilm-Related Infections in Various Human Organs (Non-Device-Related Chronic Infections)," examines the latest pharmaceutical and drug delivery research into biofilm-related infections that develop on the eye, mouth, skin wounds, and lungs. Part 3, "Drug Delivery Carriers to Eradicate Biofilm Formation on Medical Devices," explains pharmaceutical approaches such as lipid- and polymer-based drug delivery carriers to eradicate biofilm infection on medical devices; it ends with a discussion of novel small molecule control of bacterial biofilm formation. With its coverage of biofilm formation, diseases related to biofilm formation on medical devices and human organs, as well as pharmaceutical solutions, this book is an essential reference for researchers in the pharmaceutical and medical device industry as well as clinicians who treat patients with medical devices.

TAMILVANAN SHUNMUGAPERUMAL, PhD, works in the Department of Pharmaceutical Technology at the International Medical University in Kuala Lumpur, Malaysia. His current research seeks to exploit the potential of lipid- and polymer-based drug delivery carriers to eradicate infectious biofilm formation associated with both medical devices and human organs.

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