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# Antimicrobial/Anti-Infective Materials

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# Antimicrobial/Anti-Infective Materials

## Principles, Applications and Devices

Edited by  
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Intelligent Biocides



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## Preface

The ongoing battle of human against microbe has a legacy starting from the dawn of man and heightened by the knowledge that germs are the basis of much disease. Though we have many friendly interactions with microorganisms, there is generally little fondness for these invisible cohabitants.

The goal of this book is to pool the many creative ideas, being developed or investigated, under one platform and deal with the subject of antimicrobial/anti-infective materials for a variety of applications. Most readers will likely be interested in the use of such materials as coatings for medical devices and general healthcare applications. Indeed, this is a well-documented area where much human suffering and death result, with enormous associated costs to healthcare organizations worldwide. The concepts and approaches delineated in this book can also be used in many other non-healthcare applications. For instance, antimicrobial surfaces or treatments have been employed in diverse products such as food cutting boards, kitchen sponges, carpet cleaners and deodorizers, textiles for clothing, writing instruments, dish and hand washing soaps, toothpaste, virtually anywhere humans come into contact with microorganisms.

As our consciousness of microbes increases, it appears our desire to control our interactions with germs also increases in proportion. This is clearly demonstrated by examining the incredible growth in the number and sales volume of consumer products with antimicrobial claims. A product category that was all but nonexistent just a few years ago in the United States and other parts of the world, now accounts for the fastest growing segment of many consumer product lines in recent years. Such awareness and demand by consumers is but



one of many reasons warranting the necessity of a book providing a platform of ideas and applications to further initiate growth and innovation in this field.

The chapters were prepared by leading authors in specific fields. They address, and provide detailed insight into, the issues associated with infectious disease, devices and new materials to overcome these problems, testing methods, and antimicrobial strategies, and human health.

As our perception of the relationship of microbes and humans intensifies, a debate has developed in the (academic) community concerning the "excessive" use of antimicrobial compounds that lead to the disruption of the "natural" relationship between microbes and humanity. Various issues dealt with in this book will help the reader to judge the advantages and consequences of employing these materials versus human suffering. Consequently, our book will have met its objective if the reader is persuaded to join the quest for a deeper understanding of this intriguing field.

We would like to express our sincere thanks and appreciation to the authors for their cooperation and contributions in making this book a successful one. Last but not the least, we would like to thank our family members for their immense support in this interesting project, as in every walk of our lives.

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