

Gas Plasma Sterilization in Microbiology

Theory, Applications, Pitfalls and New Perspectives

Edited by

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Contents

	Contributors	v
	Preface	vii
	Acknowledgements	viii
1	Introduction Hideharu Shintani	1
2	Theoretical Background and Mode of Action of Gas Plasma Sterilization Hideharu Shintani	5
3	Concomitant Achievement of a Sterility Assurance Level of 10^{-6} with Material and Functional Compatibility by Gas Plasma Sterilization Hideharu Shintani	13
4	Current Progress in Advanced Technology of Nitrogen Gas Plasma for Remote Sterilization and Clarification of Sterilization Hideharu Shintani, Naohiro Shimizu, Yuichiro Imanishi, Akikazu Sakudo, Takuya Uyama and Eiki Hotta	25
5	Current Progress in the Inactivation of Endotoxin and Lipid A by Exposure to Nitrogen Gas Plasma Hideharu Shintani	41
6	Current Progress in Advanced Research into Tetrodotoxin Inactivation by Gas Plasmas Toshihiro Takamatsu, Hidekazu Miyahara, Takeshi Azuma and Akitoshi Okino	51
7	Current Progress in Advanced Research into Fungal and Mycotoxin Inactivation by Cold Plasma Sterilization Pervin Başaran Akocak	59

8	Current Progress in the Sterilization of Spores and Vegetative Cells by Exposure to Gas Plasma: Sterilization, Disinfection and Antimicrobial Activity Hideharu Shintani	75
9	Current Progress in Advanced Research into the Inactivation of Fungi and Yeasts by Gas Plasma Gyungsoon Park	91
10	Current Progress in Advanced Research into the Inactivation of Viruses by Gas Plasma: Influenza Virus Inactivation by Nitrogen Gas Plasma Akikazu Sakudo	103
11	Current Technology and Applications of Gas Plasma for Disinfection of Agricultural Products: Disinfection of Fungal Spores on <i>Citrus unshiu</i> by Atmospheric Pressure Dielectric Barrier Discharge Yoshihito Yagyu and Akikazu Sakudo	111
12	Current Progress in Seed Disinfection by Gas Plasma: Disinfection of Seed-borne Fungi and Bacteria by Plasma with Alternating Current High-voltage Discharge Terumi Nishioka, Tomoko Mishima, Yoichi Toyokawa, Tatsuya Misawa and Akikazu Sakudo	121
13	Validation of Gas Plasma Sterilization (Importance of ISO documents, ISO TC 198 and 194) Hideharu Shintani	131
14	Misinterpretation of Microbiological Data on Gas Plasma Sterilization: Avoiding the Pitfalls Hideharu Shintani	141
15	Future Perspectives and Trends in Gas Plasma Sterilization Hideharu Shintani	147
	Index	151

Preface

Gas plasma is the fourth state of matter, alongside solid, liquid and gas. There are many naturally occurring events and man-made products related to gas plasma including aurora and thunderstorms, and high-intensity discharge (HID) headlamp bulbs, oxonizers, semiconductors and solar battery panels. As a result, gas plasma technology is increasingly important in our life.

Among the various technologies, particular attention should be paid to the use of gas plasma in sterilization and disinfection. Gas plasma treatment has helped to minimize the contamination of medical instruments with infectious pathogens and toxins and, thus, the prevention of hospital-acquired infection.

The purpose of this book is to bring together information on the current status and future prospects of the state-of-art physical technique of gas plasma sterilization. The chapters cover basic information on this method of sterilization, applications of gas plasma technology to the inactivation of toxins and pathogens, possible mechanisms of gas plasma sterilization, and verification and validation of the sterilization efficiency of gas plasma, as well as discussing the challenges, limitations, and advantages of gas plasma sterilization, as well as future research perspectives.

This book will provide a standard reference and indispensable roadmap of gas plasma sterilization for students, engineers, and laboratory scientists. I hope that readers will enjoy this book, obtain useful information for their own research, and be inspired by new ideas for future research on gas plasma sterilization.

Akikazu Sakudo

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Hideharu Shintani

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Akikazu Sakudo

Background and principles of gas plasma sterilisation including applications and common data-interpretation errors. Recommended reading: Brewing Microbiology "a must read book" (SIMB News). Gas Plasma Sterilization in Microbiology: Theory, Applications, Pitfalls and New Perspectives | Book. "a nice state of the art compilation" (Doodys). Publisher: Caister Academic Press Edited by: Hideharu Shintani and Akikazu Sakudo Chuo University, Tokyo, Japan and University of the Ryukyus, Nishihara, Japan; respectively Pages: viii + 158 Paperback: Publication date: January 2016 ISBN: 978-1-910190-25-8 Price: GB £159 or US \$319 Add to cart Ebook: Publication date: January 2016 ISBN: 978-1-910190-26-5 Gas plasma sterilisation is a promising alternative for low-temperature sterilisation of medical devices. Although penetration is reduced compared with traditional EO, gas plasma offers generally good material compatibility and shorter cycle times. Cold plasma is a partially ionised gas comprising ions, electrons, ultraviolet photons and reactive neutrals such as radicals, excited and ground-state molecules. Read instantly in your browser. Gas Plasma Sterilization in Microbiology: Theory, Applications, Pitfalls and New Perspectives 1st Edition. by Hideharu Shintani (Editor), Akikazu Sakudo (Editor). ISBN-13: 978-1910190258. "of particular interest to (those) involved in sterilization and disinfection, whether they are students, researchers, lab personnel, or engineers" from SIMB News. Read more. Product details.