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Preface

Electromagnetics is a discipline developed over centuries, demonstrated by innumerable literatures and versatile applications. Extensive courses and reading assignments may be required to cover all worthy subjects if students or professional engineers try to master this field.

Creative ideas are often inspired by extending concepts over different fields. Comprehensive study over various subjects definitely helps if time allows and efficiency is not of concern. On the other hand, getting a global picture over relevant subjects seems more realistic. In the era of knowledge economy, accumulation of information is accelerating at an amazing rate. Access to literatures has never been so convenient, yet judgment and organization become more critical skills and capabilities. Bearing relevant background knowledge definitely helps to acquire desired information, and hopefully may inspire new ideas more fluently.

This book provides well-organized materials for students or professional engineers to master the field of electromagnetic applications more effectively. This book may also provide them with a sketch to prepare for advanced studies or pursue higher degrees in this field.

Michael Hackett from the Kluwer Academic Publishers is deeply appreciated for inviting me to edit this book. Editing task should become relatively easy as long as a competitive team of contributors can be recruited. Having served as Secretariat of the 2001 Asia-Pacific Microwave Conference, my impression on the participants and their contributions was still fresh at the moment of receiving this invitation. After carefully reviewing the conference proceedings, a candidate list was prepared, which more or less reflected my familiarity with the subject matters. I am very glad that most of the invitees shared my vision and agreed to take part in this book project.

After collecting the first drafts, style issue was immediately brought to my attention. For readers not very familiar with the subject matters, changing style in different Chapters may spoil their appetite and discourage their further exploration. Hence, many efforts were spent to ensure consistent style in all Chapters. Although this endeavor turns out to be more time consuming than I expected, benefits to readers make it worthwhile. Meanwhile, a few Chapters were carefully drafted to bridge some gaps between Chapters. Some of my graduate students were summoned to help collecting and reviewing relevant materials. Occasionally, I attended some short courses or workshops to update knowledge.

Chapters in this book are aligned from concepts to practices, from component design to system architecture, and from small scale to large scale. Each Chapter focuses on specific topic and is organized to be self-sufficient. Each chapter covers concise description of relevant background information, major issues, current trend, future challenges and useful references for further reading. Meanwhile, the terminology is carefully revised to maintain consistency over the whole volume. With these efforts, this book becomes suitable as textbook for senior or graduate courses in microwave engineering because many important and interesting materials are well organized for the disposal of lecturers and students. Many Chapters have been delivered in a graduate course "Applied Electromagnetics" at National Taiwan University by myself to fine-tune the alignment of Chapters.

I would like to express my sincerest appreciation to all the peers who generously provide their knowledge to this book project. I would also like to thank my graduate students who participate in preparing materials for some Chapters, they are Tze-Hsuan Chang, Yuan-Shun Cheng, Ching-I Cho, Hsuan-Sheng Chou, Hsiao-Lun Hsu, Monsen Leu, Chi-Yu Peng, Chun-Wei Wu and Tsung-Sang Yang. My graduate students, Tze-Hsuan Chang, Chih Feng Chou, Jing Je Gau, Cheng Wei Lan and Wen-Zhou Wu, are appreciated for their help to transform files to uniform format, enhance quality of some figures and prepare lecture materials.

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