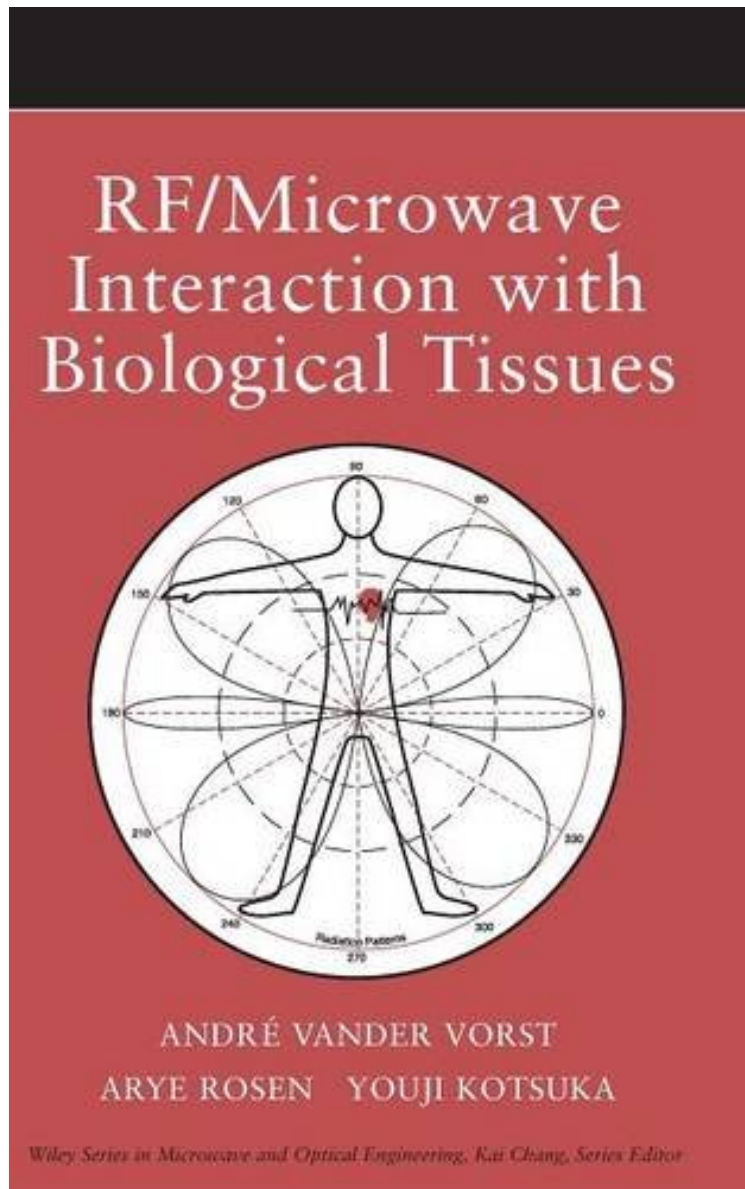


## RF / Microwave Interaction with Biological Tissues

*Andr Vander Vorst, Arye Rosen, Youji Kotsuka*  
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**Andr Vander Vorst, Arye Rosen, Youji Kotsuka : RF / Microwave Interaction with Biological Tissues** before purchasing it in order to gage whether or not it would be worth my time, and all praised RF / Microwave Interaction with Biological Tissues:

From engineering fundamentals to cutting-edge clinical applications This book examines the biological effects of RF/microwaves and their medical applications. Readers will discover new developments in therapeutic applications in such areas as cardiology, urology, surgery, ophthalmology, and oncology. The authors also present developing applications in such areas as cancer detection and organ imaging. Focusing on frequency ranges from 100 kHz to 10 GHz, *RF/Microwave Interaction with Biological Tissues* is divided into six chapters: \* *Fundamentals in Electromagnetics*--examines penetration of RF/microwaves into biological tissues; skin effect; relaxation effects in materials and the Cole-Cole model (display); the near field of an antenna; blackbody radiation and the various associated laws; and microwave measurements. \* *RF/Microwave Interaction Mechanisms in Biological Materials*--includes a section devoted to the fundamentals of thermodynamics and a discussion on energy and entropy. \* *Biological Effects*--investigates the effects of radio frequency fields on the nervous system, the brain and spinal cord, the blood-brain barrier, and cells and membranes. \* *Thermal Therapy*--includes a description of applicators and an extensive discussion on the foundation of dielectric heating and inductive heating. \* *EM-Wave Absorbers Protecting the Biological and Medical Environment*--investigates materials for EM-wave absorbers from both a theoretical and applications perspective. Special attention is given to ferrite absorbers. \* *RF/Microwave Delivery Systems for Therapeutic Applications*--begins with the fundamental features of major components used in RF/microwave delivery systems for therapeutic applications. New research towards the development of future measurement techniques is also presented. The book features problem sets at the end of each chapter, making it an excellent introduction for bioengineering and engineering students. Researchers, physicians, and technicians in the field will also find this an excellent reference that offers all the fundamentals, the most cutting-edge applications, and insight into future developments. An Instructor's Manual presenting detailed solutions to all the problems in the book is available from the Wiley editorial department.

"... a powerful book that every scientist and engineer working in the area of biomedical applications of RF/microwave should read and keep for reference.... useful to a wider audience of engineers and medical specialists since the material is presented in a concise way emphasizing core concepts and relevant examples. This is an excellent book; we need more like it." (IEEE Microwave Magazine, October 2006) "a well-researched document and a useful addition in the library for advanced RF/Microwave Engineering courses in universities, research labs working in this area as well as technologists having an interest in this field." (Desicritics.org, July 4, 2006) "...a reference to the medical physicist on a subject that is undergoing a great deal of development at this time and...a teaching reference in a course on nonionizing radiations." (Health Physics, June 2006)

From the Back Cover

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About the Author

ANDR VANDER VORST, PhD, is Professor Emeritus, Universit catholique de Louvain (UCL). He has been a member of various committees on communications, microwaves, and education, including the IEEE Microwave Theory and Techniques Society (MTT-S) and the European Microwave Conferences. Professor Vander Vorst has authored or coauthored six books, several chapters, and more than three hundred scientific and technical papers published in international journals and proceedings of international conferences. He received the IEEE MTT-S Microwave Career Award in 2004.

ARYE ROSEN, PhD, is Academy Professor of Biomedical and Electrical Engineering, School of Biomedical Engineering, Science and Health Systems, Drexel University. He is also Director of the Pediatric Engineering Program at Drexel, and cofounder of the Medical Technology Center for Infants and Children at St. Peter's University Hospital, New Brunswick, New Jersey. The recipient of the IEEE MTT-S 2000 Microwave Application Award for the Application of RF/Microwave

Techniques in Medicine, he is the coeditor of two books, including *New Frontiers in Medical Device Technology* (Wiley), and is additionally author or coauthor of seven book chapters and over 200 technical papers in the fields of engineering and medicine. YOUJI KOTSUKA, Dr.Eng, is Professor at Tokai University in Japan. Among his many honors, he was chair of the committees on Biological Effects of Electromagnetic Waves in the Institute of Electrical Engineering of Japan. He was a chair of EMCJ in the Institute of Electronics Information and Communication Engineering. Professor Kotsuka is also the author of four other books.