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**PIER 1**

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**Progress In  
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# Progress In Electromagnetics Research

*Chief Editor*

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## PREFACE

*PROGRESS IN ELECTROMAGNETICS RESEARCH* (PIER) is a book series devoted to reporting advancements and progresses in the modern development of electromagnetics and its new and innovative applications. It serves as an international forum for the publication of the state of the art review articles on new theories, methodologies and computational techniques, and interpretations of both theoretical and experimental results. The scope is very wide and covers the spectrum from statics to optical frequencies and beyond.

In this first volume PIER I, five chapters are included. The first chapter is authored by Dr. Wait on the topic of complex resistivity of the Earth which covers the complex resistivity concept and induced polarization response of spheroidal models. The second chapter is written by Dr. Rappaport who addresses the issue of synthesis of optimum microwave antenna applicators for use in treating deep localized tumors. In Chapter 3, Ding and Tsang study effective propagation constants in media with densely distributed dielectric particles of multiple sizes and permittivities by using pair distribution functions. Chapter 4 is authored by Yueh, Shin, and Kong who consider scattering from randomly perturbed periodic and quasiperiodic surfaces. In Chapter 5, Shin and Kong apply radiative transfer theory for active remote sensing of two-layer random media with planar and rough interfaces.

All contributions to the series are reviewed and prospective contributors are welcome to contact the editor and members of the Advisory Board. The Advisory Board members serve on three-year rotation terms and advise on new developments and trends in electromagnetics research. It is our hope that this series will serve as useful references for scientists and engineers in the electromagnetics profession, as sources of new topics for researchers, and as advanced text books for students in electromagnetics.

J. A. Kong

*Cambridge, Massachusetts*  
*December 1988*



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