Preface

The development of mathematical methods as applied to boundary value problems is one of the key topics in electromagnetic theory, and gave a great impact on the recent progress in telecommunication and electronics industries. As well known, a large number of international conferences and workshops have been held in recent years reflecting the state-of-the-art of various subjects related to electromagnetic theory. One of them was the "Mathematical Modeling in Electromagnetics (MME)" section which was organized at The 1999 Far-Eastern School-Seminar on Mathematical Modeling and Numerical Analysis (FESS'99), held in Nakhodka, Russia, from August 27 to September 3, 1999. The aim of the MME section was to discuss recent developments on mathematical methods used in solving electromagnetic wave problems of various types. The other important objective of this section was to promote close interaction between scientists in the former Soviet Union and Japanese scientists working on electromagnetic theory. The conference was successful and all the participants enjoyed fruitful discussions related to their common research interests.

The idea of this Special Issue occurred to us a couple of months before FESS'99. We approached several prominent speakers at FESS'99 during and after the conference with an invitation to submit papers to this Special Issue elucidating some important mathematical methods in electromagnetic theory. All of them responded immediately agreeing to contribute to the Special Issue. During FESS'99, business meetings were held several times, where we discussed with some of the expected contributors the aims and scope of this Special Issue. After extensive discussions in Nakhodka, we became certain that the Special Issue could be materialized some time in 2000.

This Special Issue contains 12 invited papers, all of which are based on the papers presented at FESS'99. All contributions in the Special Issue are related to the topics listed below:

— canonical problems
— function-theoretic methods
— high-frequency techniques
— numerical techniques
— radar cross sections
— scattering and diffraction
— semi-inversion methods
— waveguides.

We would like to thank the authors for submitting papers to this Special Issue reporting their most recent research. This Special Issue would not have been possible without their contributions. We very much appreciate the efforts of the FESS'99 Organizing Committee and its Head, Professor Rukavishnikov. We are also thankful to the Editorial Board of the journal Electromagnetic Waves and Electronic Systems for their interest in publishing the Special Issue. We deeply appreciate the opportunity to edit this Special Issue.

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