

Preface to the Special Issue on Complex Media and Metamaterials

This special issue of *Electromagnetics* is devoted to the newest research results concerning the interaction of electromagnetic waves with complex materials. Complicated material response is a heavily studied topic in today's electromagnetics. A reflection of this fact is that a new term *metamaterial* has emerged into the literature and become part of the research language. By metamaterials, such a class of media is meant which have been designed to have new and very special macroscopic properties, such that they do not appear in the constituent components making the physical structure of the material.

The articles in this special issue have originated from selected presentations held at the 10th international conference on complex media and metamaterials, "Bianisotropics 2004," which was held from 22 to 24 September 2004 in the beautiful medieval city of Ghent in Flanders, Belgium. Bianisotropics meetings have been forums for discussion of interactions of electromagnetic waves with chiral and other materials with complicated response. The first one was held in Espoo, Finland (February 1993), followed by meetings in Gomel, Belarus (October 1993), Perigueux, France (1994), State College, Pennsylvania, USA (1995), a river cruise between St. Petersburg and Moscow, Russia (1996), Glasgow, UK (1997), Braunschweig, Germany (1998), Lisbon, Portugal (2000), and Marrakesh, Morocco (2002).

The conference hosted 82 scientists from 21 different countries and 4 continents, and 50 presentations were given. The following nine articles shall hopefully transmit an informative picture of the variety and topics discussed in the meeting and also of the breadth and depth of modern research of complex-media electromagnetics. The contents of the studies to follow in this issue cover theoretical, numerical, and practical aspects of modeling and applications of complex materials in electromagnetics.

We wish to thank all the reviewers of these papers for their valuable assistance in carefully studying the manuscripts submitted to this special issue. In some cases the review process took three whole author–editor–reviewer–editor rounds, and patience was necessary on all sides. In addition, we feel especially grateful to the Editor-in-Chief of *Electromagnetics*, Dr. H. Y. David Yang, for providing us the opportunity of having the journal as a forum for the research results of our bianisotropics community.

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