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**ELECTROMAGNETIC WAVES**  
**SPECIAL ISSUE**

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**Special Issue**  
**In Memory of**  
**Robert E. Collin**

Chief Editors: Weng Cho Chew and Sailing He

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## Special Issue In Memory of Robert E. Collin

This is a special issue in memory of Robert E. Collin, a distinguished scholar, author, and mentor in the area of electromagnetics. This special issue started at the suggestion of Professor Ioannis M. Besieris. The chief editors would like to thank all the authors for their contributions.

Robert E. Collin (October 24, 1928 – November 29, 2010) was the author or coauthor of more than 150 technical papers and five books on electromagnetic theory and applications. His classic text, *Field Theory of Guided Waves*, was also a volume in the series. Professor Collin had a long and distinguished academic career at Case Western Reserve University. In addition to his professional duties, he served as chairman of the Department of Electrical Engineering and as interim dean of engineering.

Professor Collin was a life fellow of the IEEE, fellow of the Electromagnetic Academy, and member of the Microwave Theory and Techniques Society and the Antennas and Propagation Society (APS). He was a member of U.S. Commission B of URSI and member of the Geophysical Society. Other honors include the Diekman Award from Case Western Reserve University for distinguished graduate teaching, the IEEE APS Distinguished Career Award (1992), the IEEE Schelkunoff Prize Paper Award (1992), the IEEE Electromagnetics Award (1998), and an IEEE Third Millennium Medal in 2000. In 1990 Professor Collin was elected to the National Academy of Engineering.

## Collection of Papers in Memory of Robert E. Collin

### **Numerically Efficient Technique For Metamaterial Modeling (Invited Paper)**

Ravi Kumar Arya, Chiara Pelletti, and Raj Mittra

.....*Progress In Electromagnetics Research, Vol. 140, 263–276, 2013*

### **Dipole Radiation Near Anisotropic Low-Permittivity Media (Invited Paper)**

Mohammad Memarian and George V. Eleftheriades

.....*Progress In Electromagnetics Research, Vol. 142, 437–462, 2013*

### **Circuit and Multipolar Approaches to Investigate the Balance of Powers in 2D Scattering Problems (Invited Paper)**

Iñigo Liberal, Iñigo Ederra, Ramon Gonzalo, and Richard W. Ziolkowski

.....*Progress In Electromagnetics Research, Vol. 142, 799–823, 2013*

### **A Wideband Frequency-Shift Keying Modulation Technique Using Transient State of a Small Antenna (Invited Paper)**

Mohsen Salehi, Majid Manteghi, Seong-Youp Suh, Soji Sajuyigbe, and Harry G. Skinner

.....*Progress In Electromagnetics Research, Vol. 143, 421–445, 2013*

### **Minimum $Q$ for Lossy and Lossless Electrically Small Dipole Antennas (Invited Paper)**

Arthur D. Yaghjian, Mats Gustafsson, and B. Lars G. Jonsson

.....*Progress In Electromagnetics Research, Vol. 143, 641–673, 2013*

### **Three-Parameter Elliptical Aperture Distributions for Sum and Difference Antenna Patterns Using Particle Swarm Optimization (Invited Paper)**

Arthur Densmore and Yahya Rahmat-Samii

.....*Progress In Electromagnetics Research, Vol. 143, 709–743, 2013*

### **Differential Forms Inspired Discretization for Finite Element Analysis of Inhomogeneous Waveguides (Invited Paper)**

Qi I. Dai, Weng Cho Chew, and Li Jun Jiang

.....*Progress In Electromagnetics Research, Vol. 143, 745–760, 2013*

### **Localized Monochromatic and Pulsed Waves in Hyperbolic Metamaterials (Invited Paper)**

Ioannis M. Besieris and Amr M. Shaarawi

.....*Progress In Electromagnetics Research, Vol. 143, 761–771, 2013*

### **Developing One-dimensional Electronically Tunable Microwave and Millimeter-Wave Components and Devices towards Two-Dimensional Electromagnetically Reconfigurable Platform (Invited Paper)**

Sulav Adhikari and Ke Wu

.....*Progress In Electromagnetics Research, Vol. 143, 821–848, 2013*

### **Impact of Finite Ground Plane Edge Diffractions on Radiation Patterns of Aperture Antennas (Invited Paper)**

Nafati A. Aboserwal, Constantine A. Balanis, and Craig R. Birtcher

.....*Progress In Electromagnetics Research B, Vol. 55, 1–21, 2013*