



# Electromagnetic Optimization by Genetic Algorithms (Wiley Series in Microwave and Optical Engineering)

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## Electromagnetic Optimization by Genetic Algorithms (Wiley Series in Microwave and Optical Engineering) From Wiley-Interscience

Authoritative coverage of a revolutionary technique for overcoming problems in electromagnetic design. Genetic algorithms are stochastic search procedures modeled on the Darwinian concepts of natural selection and evolution. The machinery of genetic algorithms utilizes an optimization methodology that allows a global search of the cost surface via statistical random processes dictated by the Darwinian evolutionary concept. These easily programmed and readily implemented procedures robustly locate extrema of highly multimodal functions and therefore are particularly well suited to finding solutions to a broad range of electromagnetic optimization problems. Electromagnetic Optimization by Genetic Algorithms is the first book devoted exclusively to the application of genetic algorithms to electromagnetic device design. Compiled by two highly competent and well-respected members of the electromagnetics community, this book describes numerous applications of genetic algorithms to the design and optimization of various low- and high-frequency electromagnetic components. Special features include:

- \* Introduction by David E. Goldberg, "A Meditation on the Application of Genetic Algorithms"
- \* Design of linear and planar arrays using genetic algorithms
- \* Application of genetic algorithms to the design of broadband, wire, and integrated antennas
- \* Genetic algorithm-driven design of dielectric gratings and frequency-selective surfaces
- \* Synthesis of magnetostatic devices using genetic algorithms
- \* Application of genetic algorithms to multiobjective electromagnetic backscattering optimization
- \* A comprehensive list of the up-to-date references applicable to electromagnetic design problems

Supplemented with more than 250 illustrations, Electromagnetic Optimization by Genetic Algorithms is a powerful resource for electrical engineers interested in modern electromagnetic designs and an indispensable reference for university researchers.

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#### Review

"...a powerful resource..." (Zentralblatt Math, Vol.992, No.17, 2002)

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#### About the Author

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