

# Book/Software Reviews

## ***Helping Students Learn About Electromagnetics***

■ James Chu

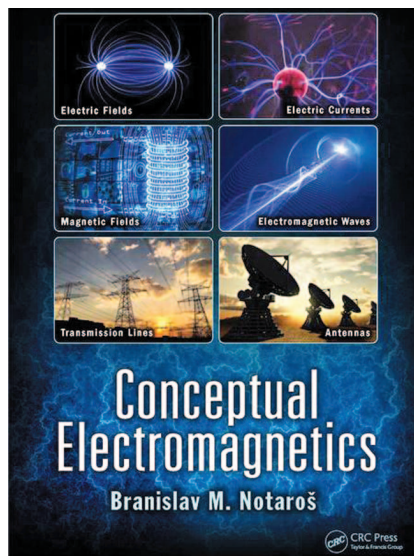
Author Dr. Branislav Notaroš is an IEEE Fellow and a professor in the Department of Electrical and Computer Engineering and director of the Electromagnetics Laboratory at Colorado State University, where he is a Distinguished Teaching Scholar. Prof. Notaroš is the recipient of many research and teaching awards, including the 1999 Institution of Electrical Engineers Marconi Premium, 2005 IEEE Microwave Theory and Techniques Society Microwave Prize, 2005 University of Massachusetts/Dartmouth Scholar of the Year Award, 2012 Colorado State University Board of Governors Excellence in Undergraduate Teaching Award, 2014 Carnegie Foundation and Carnegie Academy for Science Education's Colorado Professor of the Year Award, 2015 American Society for Engineering Education Distinguished Educator Award, and 2015 IEEE Undergraduate Teaching Award.

*Conceptual Electromagnetics* describes the fundamental subject of electromagnetics, or field and wave theory, for an

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James Chu (jchu2@kennesaw.edu), IEEE Senior Life Member, is with Kennesaw State University, Georgia, United States.

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undergraduate college class using very advanced teaching and learning methods. It provides abundant opportunities for instructors to introduce innovative lectures, in-class and homework assignments, and tests (including those for online distance education and for students pursuing independent learning). An active teaching and learning

methodology is built into this text by means of interactive in-class questions, explorations, and discussions. The book also includes peer instruction, allowing students to tutor one another. Dr. Notaroš adds collaborative teaching and learning through teamwork and the exchange of ideas in class. These learner-centered pedagogies and practices—and active teaching and learning, in particular—are very effective, motivational, and positively evaluated by students. There are many conceptual questions as well as multiple-choice ones that focus on core concepts of the material, requiring conceptual reasoning and understanding.

This book is organized into 12 chapters on electrostatics fields, steady electric currents, magnetostatic fields, time-varying electromagnetic fields, uniform plan electromagnetic waves, transmission lines, waveguides and cavity resonators, and antennas and wireless communication systems. For many engineering students, the fields and waves, or electromagnetics, course is particularly challenging. But, with Prof. Notaroš's advanced teaching and learning approach, this course can be pleasant and fun. His teaching technique should become the standard for all science and engineering courses.

