Magnetic Materials and 3D Finite Element Modeling

João Pedro A. Bastos, Nelson Sadowski

Magnetic Materials and 3D Finite Element Modeling

João Pedro A. Bastos, Nelson Sadowski

Magnetic Materials and 3D Finite Element Modeling João Pedro A. Bastos, Nelson Sadowski

Magnetic Materials and 3D Finite Element Modeling explores material characterization and finite element modeling (FEM) applications. This book relates to electromagnetic analysis based on Maxwell's equations and application of the finite element (FE) method to low frequency devices. A great source for senior undergraduate and graduate students in electromagnetics, it also supports industry professionals working in magnetics, electromagnetics, ferromagnetic materials science and electrical engineering.

The authors present current concepts on ferromagnetic material characterizations and losses. They provide introductory material; highlight basic electromagnetics, present experimental and numerical modeling related to losses and focus on FEM applied to 3D applications. They also explain various formulations, and discuss numerical codes.

• Furnishes algorithms in computational language

• Summarizes concepts related to the FE method

• Uses classical algebra to present the method, making it easily accessible to engineers

Written in an easy-to-understand tutorial format, the text begins with a short presentation of Maxwell's equations, discusses the generation mechanism of iron losses, and introduces their static and dynamic components. It then demonstrates simplified models for the hysteresis phenomena under alternating magnetic fields. The book also focuses on the Preisach and Jiles–Atherton models, discusses vector hysterisis modeling, introduces the FE technique, and presents nodal and edge elements applied to 3D FE formulation connected to the hysteretic phenomena.

The book discusses the concept of source-field for magnetostatic cases, magnetodynamic fields, eddy currents, and anisotropy. It also explores the need for more sophisticated coding, and presents techniques for solving linear systems generated by the FE cases while considering advantages and drawbacks.

Download and Read Free Online Magnetic Materials and 3D Finite Element Modeling João Pedro A. Bastos, Nelson Sadowski

---

From reader reviews:

Shawn Hodgin:

Hey guys, do you desires to finds a new book to read? May be the book with the title Magnetic Materials and 3D Finite Element Modeling suitable to you? The particular book was written by popular writer in this era. The book untitled Magnetic Materials and 3D Finite Element Modelingis one of several books this everyone read now. This particular book was inspired a lot of people in the world. When you read this publication you will enter the new dimension that you ever know previous to. The author explained their strategy in the simple way, thus all of people can easily to know the core of this publication. This book will give you a lot of information about this world now. So that you can see the represented of the world on this book.

Robert Thomas:

Typically the book Magnetic Materials and 3D Finite Element Modeling has a lot of information on it. So when you check out this book you can get a lot of advantage. The book was compiled by the very famous author. The writer makes some research ahead of write this book. That book very easy to read you can find the point easily after reading this article book.

Catherine Branch:

Exactly why? Because this Magnetic Materials and 3D Finite Element Modeling is an unordinary book that the inside of the reserve waiting for you to snap it but latter it will zap you with the secret that inside. Reading this book alongside it was fantastic author who write the book in such incredible way makes the content on the inside easier to understand, entertaining means but still convey the meaning fully. So , it is good for you because of not hesitating having this anymore or you going to regret it. This phenomenal book will give you a lot of gains than the other book have such as help improving your expertise and your critical thinking approach. So , still want to hesitate having that book? If I had been you I will go to the book store hurriedly.

Lisa Alaniz:

Playing with family within a park, coming to see the marine world or hanging out with good friends is thing that usually you may have done when you have spare time, and then why you don't try factor that really opposite from that. 1 activity that make you not experience tired but still relaxing, trilling like on roller coaster you are ride on and with addition associated with. Even you love Magnetic Materials and 3D Finite Element Modeling, you could enjoy both. It is fine combination right, you still need to miss it? What kind of hang type is it? Oh can happen its mind hangout fellas. What? Still don't obtain it, oh come on its known as reading friends.

Read Magnetic Materials and 3D Finite Element Modeling by João Pedro A. Bastos, Nelson Sadowski for online ebook

Magnetic Materials and 3D Finite Element Modeling by João Pedro A. Bastos, Nelson Sadowski Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Magnetic Materials and 3D Finite Element Modeling by João Pedro A. Bastos, Nelson Sadowski books to read online.

Online Magnetic Materials and 3D Finite Element Modeling by João Pedro A. Bastos, Nelson Sadowski ebook PDF download

Magnetic Materials and 3D Finite Element Modeling by João Pedro A. Bastos, Nelson Sadowski Doc

Magnetic Materials and 3D Finite Element Modeling by João Pedro A. Bastos, Nelson Sadowski Mobipocket

Magnetic Materials and 3D Finite Element Modeling by João Pedro A. Bastos, Nelson Sadowski EPub