

1. Record Nr.	UNINA9910830707503321
Autore	Sudhoff Scott D.
Titolo	Power magnetic devices : a multi-objective design approach // S.D. Sudhoff
Pubbl/distr/stampa	Hoboken, New Jersey : , : Wiley, , [2022] ©2022
ISBN	1-119-67463-8 1-119-67465-4 1-119-67464-6
Edizione	[Second edition.]
Descrizione fisica	1 online resource (655 pages)
Collana	Eee press series on power and energy systems
Disciplina	621.3
Soggetti	Electromagnetic devices Power electronics Electric machinery
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Sommario/riassunto	"This work is intended either as a text book for a senior-level/beginning graduate-level course, or as a resource for the practicing engineer. There are three objectives for the text. The first is to set forth a systematic multi-objective-optimization based approach for the semi-automated design of power magnet components. A second objective of the text is to discuss physical principals and analysis necessary for the design of power magnetic devices including fields, magnet equivalent circuit analysis, core loss, eddy current losses, thermal analysis, skin and proximity effect, and the like. The third objective of the text is to provide some fundamental background in a variety of devices including inductors, electromagnets, transformers, and rotating electric machinery. It is not the intent to provide a cookbook of design information for all devices. Rather, it is the intent to position to leave the reader well poised to start adapting the approach to specific devices of interest to their work - whether it be a transformer or a novel type of rotating machine. From a pedagogical point of view, the organization of the text is designed to

involve the reader in the design process as rapidly as possible. While it might be more efficient to discuss all relevant physical effects, and then to discuss the design, such an approach is not always satisfying in that it leaves the reader hungry for a meal a long time before dinner is served. For that that reason, the first thirteen chapters of the text generally alternate between discussing a physical effect and considering a design problem in which that effect is considered"--
