

Electrical Engineering: Systems, Devices and Applications

Edited by Max Kirby



Clarrye International, 750 Third Avenue, 9th Floor, New York, NY 10017, USA

Copyright @ 2018 Clanrye International

This book contains information obtained from authentic and highly regarded sources. All chapters are published with permission under the Creative Commons Attribution Share Alike License or equivalent. A wide variety of references are listed. Permissions and sources are indicated; for detailed attributions, please refer to the permissions page. Reasonable efforts have been made to publish reliable data and information, but the authors, editors and publisher cannot assume any responsibility for the vailidity of all materials or the consequences of their use.

Trademark Notice: Registered trademark of products or corporate names are used only for explanation and identification without intent to infringe.

ISBN: 978-1-63240-761-0

Cataloging-in-Publication Data

Electrical engineering : systems, devices and applications / edited by Max Kirby.

p. cm.

Includes bibliographical references and index.

ISBN 978-1-63240-761-0

 Electrical engineering.
Electric apparatus and appliances.
Electrical engineering--Equipment and supplies.
Kirby, Max.

TK153 .E44 2018 621.3--dc23

For information on all Clanrye International publications visit our website at www.clanryeinternational.com



Printed in China.

Contents

	Preface	VII
Chapter 1	An Introduction to Electric Machine	1
Chapter 2	Types of Electric Machines	9
	a. Rotary Converter	9
	b. Metadyne	13
	c. DC Motor	19
	d. AC Motor	26
	e. Induction Motor	40
	f. Transformer	55
	g. Doubly-fed Electric Machine	103
Chapter 3	Understanding Electric Motor	108
	a. Electric Motor	108
	b. Motor Capacitor	164
	c. Alternating Current	167
	d. Direct Current	178
Chapter 4	Electric Generator: An Overview	184
	a. Electric Generator	184
	b. Dynamo	206
	c. Alternator	213
	d. Armature (Electrical Engineering)	220
	Permissions	
	Index	

Electrical Engineering: Systems, Devices and Applications

About the Book

Electrical engineering falls under the vast field of engineering. It is referred to as application of the models of electromagnetism, electricity and electronics, to understand the working of engineering machinery. The diverse sub-fields included under this branch are digital computer studies, radio-frequency engineering, instrumentation, power engineering, microelectronics, telecommunications, signal processing, etc. This book attempts to understand the multiple branches that fall under the discipline of electrical engineering and how such concepts have practical applications. It is a valuable compilation of topics, ranging from the basic to the most complex theories and principles in this field. Those in search of information to further their knowledge will be greatly assisted by this textbook.

About the Editor

Max Kirby received his Electrical and Electronic Engineering MSc from London South Bank University, United Kingdom. He is actively engaged in the researches focused on instrumentation and design. Kirby currently serves as an associate lecturer in the Department of electrical engineering and has also been presented the "Principal's Prize for Excellence in Teaching".



