

Pearson 0132310694

Power Electronics for Technology

by Ashfaq Ahmed

1. INTRODUCTION

This book, "Power Electronics for Technology," provides an applications-oriented introduction to the principles of power electronics. It offers a comprehensive explanation of the switching, control, and conversion of electrical power utilizing semiconductor devices. The content is designed to meet the current demands of the workplace by focusing on efficient conversion and control of electrical power.

2. ABOUT THE AUTHOR

Ashfaq Ahmed is the author of "Power Electronics for Technology." His expertise is reflected in the methodical presentation of complex topics, making them accessible to readers.

3. KEY CONCEPTS COVERED

The book covers a wide range of topics essential to power electronics, including:

- Principles of power electronics and semiconductor devices.
- Switching, control, and conversion of electrical power.
- Latest power devices, circuits, and control schemes.
- Analysis and operation of various power conversion circuits.
- Applications in uncontrolled and controlled single-phase rectifiers.
- Inverters, AC voltage controllers, cycloconverters, and DC choppers.
- Voltage and current waveform analysis for different loads.

4. BOOK STRUCTURE AND METHODOLOGY

The material is presented methodically, beginning with the establishment of background theory before progressing to specific applications. This approach familiarizes readers with the analysis and operation of power conversion circuits relevant to high power levels. Equations governing the behavior of these circuits are formulated and explained.

5. FEATURES

This textbook includes several features designed to enhance learning and comprehension:

- Numerous worked examples to illustrate concepts.
- Basic formulas for quick reference and application.
- An abundance of illustrations and diagrams to clarify complex circuits and waveforms.

6. SPECIFICATIONS

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7. SUPPORT AND FURTHER INFORMATION

For additional resources, errata, or inquiries regarding "Power Electronics for Technology," please refer to the publisher's official website. The publisher is Pearson.

Publisher Website: www.pearson.com

This document provides informational content for "Power Electronics for Technology" by Ashfaq Ahmed.