

Contents

- 1 Uncontrolled Rectifier.** 1
 - Rectifier Configurations 1
- 2 Controlled Rectifier** 9
 - Introduction 9
 - The Thyristor Rectifier 10
- 3 Thyristor Rectifier in Closed Loop** 15
 - An Introduction to Closed-Loop Control. 15
 - Power Circuit Explanation 16
- 4 Buck Converter in Open Loop** 21
 - An Introduction to Open Loop 21
 - Mathematical Modeling of the Power Converter 24
 - The Control of the Buck Converter 25
 - Voltage Mode Control of Buck Converter. 26
- 5 Buck Converter in Closed Loop** 29
 - An Introduction to Closed Loop 29
- 6 Design of Embedded Control** 39
 - Introduction 39
 - Analog and Digital Control. 39
 - Developing an Embedded Controller 41
 - A Brief Introduction to Model-Based Design. 44

7 Case Study of an Embedded Control System Design	45
Introduction	45
Application Overview.	46
Measurement of Speed of the Motor	46
Hall Effect Sensor	46
Opto Coupler	47
Controlling the Speed with PWM	48
Subsystem Design	48
PCB Layout for the System	50
Conclusion	51
References.	53

Control Systems for Power Electronics

A Practical Guide

Patil, M.; Rodey, P.

2015, XVII, 53 p. 41 illus., 21 illus. in color., Softcover

ISBN: 978-81-322-2327-6