An invaluable academic reference for the area of high-power converters, covering all the latest developments in the field

High-power multilevel converters are well known in industry and academia as one of the preferred choices for efficient power conversion. Over the past decade, several power converters have been developed and commercialized in the form of standard and customized products that power a wide range of industrial applications. Currently, the modular multilevel converter is a fast-growing technology and has received wide acceptance from both industry and academia. Providing adequate technical background for graduate- and undergraduate-level teaching, this book includes a comprehensive analysis of the conventional and advanced modular multilevel converters employed in motor drives, HVDC systems, and power quality improvement.

*Modular Multilevel Converters: Analysis, Control, and Applications* provides an overview of high-power converters, reference frame theory, classical control methods, pulse width modulation schemes, advanced model predictive control methods, modeling of ac drives, advanced drive control schemes, modeling and control of HVDC systems, active and reactive power control, power quality problems, reactive power, harmonics and unbalance compensation, modeling and control of static synchronous compensators (STATCOM) and unified power quality compensators. Furthermore, this book:

- Explores technical challenges, modeling, and control of various modular multilevel converters in a wide range of applications such as transformer and transformerless motor drives, high voltage direct current transmission systems, and power quality improvement
- Reflects the latest developments in high-power converters in medium-voltage motor drive systems
• Offers design guidance with tables, charts, graphs, and MATLAB simulations

*Modular Multilevel Converters: Analysis, Control, and Applications* is a valuable reference book for academic researchers, practicing engineers, and other professionals in the field of high power converters. It also serves well as a textbook for graduate-level students.

---

### ABOUT THE AUTHOR

**Sixing Du, PhD**, is a Postdoctoral Fellow in the Department of Electrical and Computer Engineering at Ryerson University in Toronto, Canada.

**Apparao Dekka, PhD**, is a Postdoctoral Fellow in the Department of Electrical and Computer Engineering at Ryerson University in Toronto, Canada. He has made significant contributions to the control and application of the MMCs.

**Bin Wu, PhD**, is a Professor in the Department of Electrical and Computer Engineering at Ryerson University in Toronto, Canada. He is a co-author of several Wiley-IEEE Press books.

**Navid Zargari, PhD**, is a Manager & Product Architect in MV Drives R&D at Rockwell Automation, Toronto, Canada. He is a co-author of the Wiley publication *Power Conversion and Control of Wind Energy Systems*.

---

### RELATED RESOURCES

<table>
<thead>
<tr>
<th>Student</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>View Student Companion Site</td>
<td>View Instructor Companion Site</td>
</tr>
</tbody>
</table>

---

### SERIES

IEEE Press Series on Power Engineering

---

For additional product details, please visit [https://www.wiley.com/en-us](https://www.wiley.com/en-us)