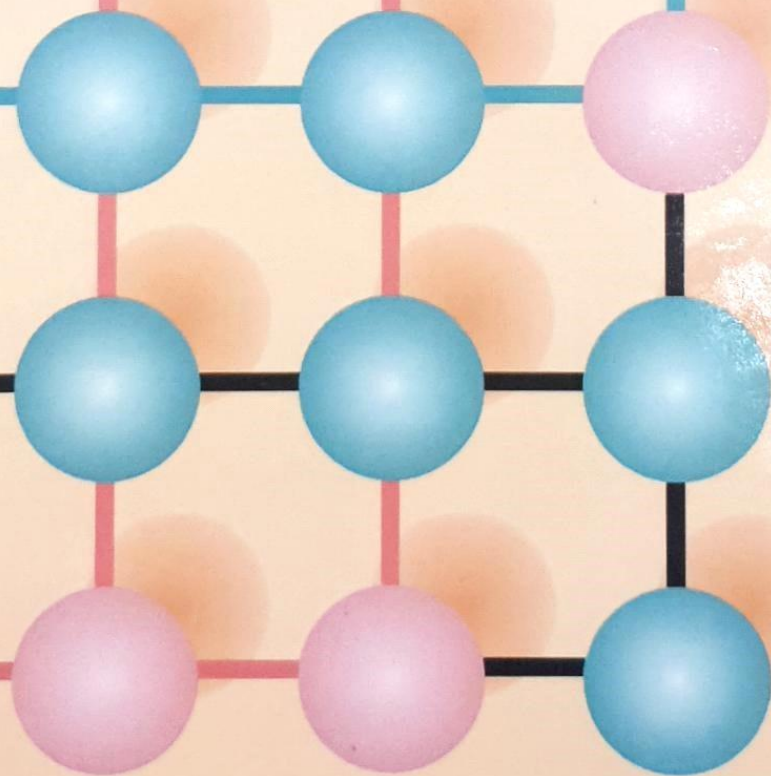


C O N T R O L I N
POWER
ELECTRONICS

SELECTED PROBLEMS



Marian P. Kazmierkowski
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Preface

This book is the result of cooperation initiated in 1997 between Danfoss Drives A/S (www.danfoss.com.drives) and the Institute of Energy Technology at Aalborg University in Denmark. A four-year effort known as The International Danfoss Professor Program* was started. The main goal of the program was to attract more students to the multidisciplinary area of power electronics and drives by offering a world-class curriculum taught by renowned professors. During the four years of the program distinguished professors visited Aalborg University, giving advanced courses in their specialty areas and interacting with postgraduate students. Another goal of the program was to strengthen the research team at the university by fostering new contacts and research areas. Four Ph.D. studies have been carried out in power electronics and drives. Finally, the training and education of engineers were also offered in the program. The program attracted the following professors and researchers (listed in the order in which they visited Aalborg University):

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* F. Blaabjerg, M. P. Kazmierkowski, J. K. Pedersen, P. Thogersen, and M. Toennes, An industry-university collaboration in power electronics and drives, *IEEE Trans. on Education*, 43, No. 1, Feb. 2000, pp. 52–57.

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Niculina Patriciu, *University of Cluj-Napoca, Romania*
Florin Lungeanu, *Galati University, Romania*
Marco Matteini, *University of Bologna, Italy*
Marco Liserre, *University of Bari, Italy*

The research carried out in cooperation with the Danfoss Professor Program resulted in many publications. The high level of the research activities has been recognized worldwide and four international awards have been given to team members of the program.

Most of the research results are included in this book, which consists of the following three parts:

Part I: PWM Converters: Topologies and Control (four chapters)
Part II: Motor Control (six chapters)
Part III: Utilities Interface and Wind Turbine Systems (three chapters)

The book has strong monograph attributes, however, some chapters can also be used for undergraduate education (e.g., Chapters 4, 5, and 9–11) as they contain a number of illustrative examples and simulation case studies.

We would like to express thanks to the following people for their visionary support of this program:

Michael Toennes, *Manager of Low Power Drives, Danfoss Drives A/S*
Paul B. Thøgersen, *Manager of Control Engineering, Danfoss Drives A/S*
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Finn R. Pedersen, *President of Fluid Division, Danfoss A/S, former President of Danfoss Drives A/S*
Joergen M. Clausen, *President and CEO of Danfoss A/S*

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