New Book Review / May 2014:
Title:" Multilevel Converters for Industrial Applications"
Authors: S.A. Gonzalez, S.A. Verne, M.I. Valla
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Written by known contributors in the field, the book constitutes a valuable monograph on multilevel (medium voltage) converters used to process electric power in Smart Grid, and in large power or large speed (large fundamental) frequency electric ac drives.

It is, to our knowledge, the first book in English dedicated exclusively to multilevel converters; their use in Smart Grids and in large power or large fundamental frequency electric drives constitutes a definite trend both in R&D and in industry, with dynamic worldwide markets.

The book extends on 229 pp and is divided into 7 balanced chapters.

Chapter 1 is dedicated to Introduction where the two main varieties of multilevel converters (symmetric and asymmetric) and their main applications in power quality improvement, renewable energy processing (Smart Grids) and in electric drives are described with remarkable clarity based on 65 pertinent/representative literature citations.

In Chapter 2. the authors deal in detail with the myriad of multilevel single dc input source inverter configurations introduced so far, with their principles and principal merits and demerits. Diode-clamped, flying-capacitor and asymmetric topologies like: hybrid, cascaded ones, stand out from the crowd and will be studied in even more depth in subsequent chapters.

Chapters 3-5 are dedicated to the Diode-clamped, flying capacitor and, respectively, cascaded asymmetric multilevel converters' extended modelling-with a special attention on advanced PWM techniques to reduce switching losses and harmonics – and performance, with sample results from literature which facilitates the reader a good sense of magnitudes, so important in any engineering study/project.

A valuable comparison between four main 5-level converter topologies is offered in the end of chapter 5.

Chapters 6-7 contain two representative case studies-applications: one related to a DSTATCOM (an active and reactive power filter, in fact) built with a cascade asymmetric multilevel converter with capacitors on the dc side, and the other :a medium voltage large power motor drive built with a diode-clamped multilevel converter in a back to back configuration. From topology, to modeling, through advanced (predictive) control, the authors present valuable information required in industrial implementation of multilevel converters.

The presentation, from simple to complex, from modeling to performance and control, with mathematics strictly under control, is very legible and may be very useful to graduate students and industrial engineers working in power electronics.

For a future edition we urge the authors to introduce, wherever feasible, design methodologies by examples, one more case study chapter on "high fundamental frequency electric drives", and, for all case studies chapters, MATLAB-Simulink codes for the cases in point on a CDROM or offered on line, to help future readers to get deep knowledge faster by the exploration of user-friendly full system simulation codes.

Finally, we highly recommend the book to all graduate students and R&D engineers involved in power electronics and its industrial applications at medium and high power levels.

Prof,. IonBoldea,
IEEE Life Fellow,
Editor of www.jee.ro