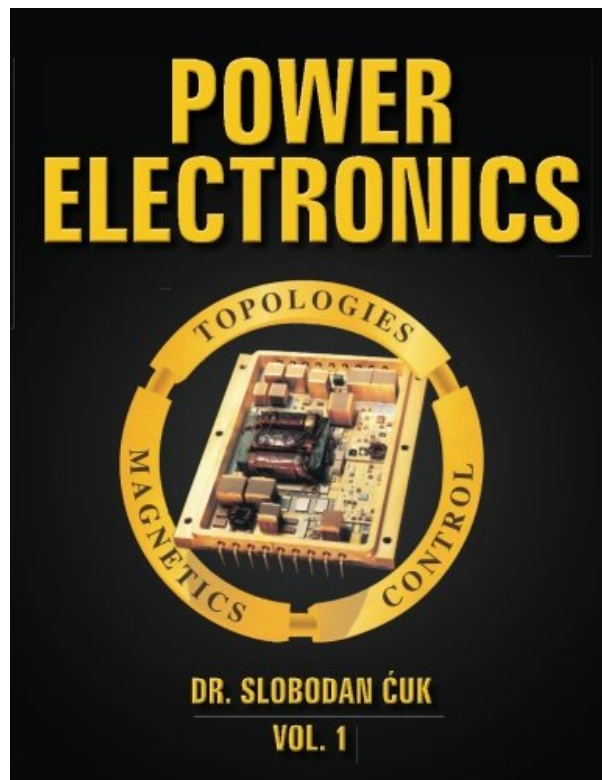


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MAGNETICS AND CONTROL: NEW
(VOLUME 1) BY SLOBODAN CUK**



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POWER ELECTRONICS



DR. SLOBODAN ĆUK

VOL. 1

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POWER ELECTRONICS: TOPOLOGIES, MAGNETICS AND CONTROL: NEW (VOLUME 1) BY SLOBODAN CUK PDF

Power Electronics: Topologies, Magnetics and Control (Volume 1) The first chapter entitled: Basics of Switched-Mode Power Conversion: Topologies, Magnetics and Control was written specifically to provide a comprehensive view of Power Electronics field and to introduce novice engineers to the three key areas of expertise: Topologies, Magnetics and Control. Its first section introduces buck, boost and flyback DC-DC converters. Its second section provides an overview of properties of ferromagnetic materials culminating in modelling and design of transformers and inductors. The third section describes the general method of PWM control and regulation. This Volume 1 also introduces the fourth basic non-isolated converter type, the Cuk converter, invented on April 1, 1975. Unlike the buck, the boost and the flyback converters, this converter introduces for the first time capacitive energy transfer which led Dr. Cuk to formulate his most general State-Space Averaging Method, using the missing state-space equations for capacitor voltages and respective charge balance in addition to state-space equations for inductor currents and corresponding original volt-second balance on inductors. This method results in the general analytical model for both steady-state (DC) as well as dynamic (AC) properties for not only the existing switching converters but for all DC-DC converters based on PWM control which were known at the time and those which have been invented at any time thereafter. The Cuk converter has also motivated formulation of a new general magnetic circuits methods named Coupled-Inductors and Integrated Magnetics and demonstrated their implementation in the non-isolated and isolated Cuk converters.

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Great info, but needs to re-typeset.

By Natalie

Great information for a practicing engineer in the power conversion field, however the quality of the publications is poor.

The book seems to be a scanned in copy of old lecture notes, mimeograph, etc. As so, the text is hard to read. This is quality information worth being re-typeset.

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