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| **Title:** | Analysis of a Common Circuit Structure for Operating Four Power Electronic Converter Circuits | | |
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| **Published Journal Name:** | 2015 IEEE International Conference on Electrical, Computer and Communication Technologies (ICECCT) | | |
| **Type of Publication:** | Conference | | |
| **Volume:** | NA | Issue | NA |
| **Publisher:** | NA | | |
| **Publication Date:** | March 2015 | | |
| **ISSN:** | Print ISBN:978-1-4799-6084-2 | | |
| **DOI:** | 10.1109/ICECCT.2015.7226010 | | |
| **URL:** | https://ieeexplore.ieee.org/document/7226010 | | |
| **Other Related Info.:** | NA | | |
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| **Abstract:** |  |
| In this paper operation of four power electronic conversion processes has been analyzed in a single common basic circuit structure. The basic structure contains four diodes and four switches. The input and output terminals in the common structural circuit are selected based upon the requirement of conversion processes. Operations of inverter, rectifier, buck chopper and boost chopper are analyzed. Different switching patterns are required for different conversion processes on the combined structure. A table showing the use of terminals for specific conversion topology has been provided to simplify the operational studies. Simulations of corresponding circuits have been performed in PSIM to justify the theoretical analysis. | |