

**CONSTANT POWER LOAD STUDIES ON SINGLE PHASE  
MATRIX CONVERTER (SPMC) OPERATING AS A RECTIFIER**

This thesis is presented as fulfillment of the requirement for

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of

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## **ABSTRACT**

This report presents the study of a Single Phase Matrix Converter (SPMC) operated as an AC-DC controlled rectifier driving the linear and non-linear load (Constant Power Load). The multiple Pulse Width Modulation (PWM) technique are used as its switching operation for synthesizing the output modeling. The analysis of constant power load were conducted in detailed before being compliment in the SPMC system. In this work a simple commutation strategy for implementation in single phase matrix converter provides the required free-wheeling operation similar to those available in other converter topologies is proposed. The commutation strategy used in this work has also shown reduction in spikes, a common phenomenon in matrix converter topologies. The commutation scheme establish a current path for energy to flow during dead-time, the avoiding the generation of voltage spikes. The simulations has been done by using MATLab/Simulink software to validate the design approach of SPMC.

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