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FINAL REPORT OF DIPLOMA PROJECT

PROJECT TITLE:

DC/AC INVERTER OF SOLAR PANEL POWER SUPPLY

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ABSTRACT

DC/AC inverters fall in the class of power electronics circuit. The most widely accepted definition of power electronics is that the circuit is actually processing electric energy rather than information. The actual power level is not very important for the classification of a circuit as a power electronics circuit.

The most important performance consideration of DC/AC inverters is their energy conversion efficiency. DC/AC inverters are used to create or poly phase AC voltages from a DC supply. In the class of poly phase DC /AC inverters, three- phase inverters are by far the largest group. A very large number of DC/AC inverters are used for adjustable speed motor drives.

The typical DC/AC inverters for this application are a “hard-switched” voltage source inverter producing pulse-width modulated (PWM) signals with a sinusoidal fundamental. Recently, researches have shown detrimental effects on the windings and the bearings resulting from unfiltered PWM waveforms and recommend the use of filters. Very common applications for single-phase DC/AC inverters are so called “uninterruptible power supplies” for computers and other critical loads.

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