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Solar Power Based DC-DC Converter Fed Brushless DC Motor Drive for Agricultural Applications

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Abstract: The proposed research involves, a design solar power based dc-dc converter fed brushless dc motor drive for agricultural applications. It consists of step up and step down converter, DC-link module. Compared with conventional and two converters, the designed system results in reduction of voltage tension across the switches, compact power switches, DC source reckoning and reduced inrush current. DC-link switching is achieved by reduced ripple voltage which results in improved quality of obtained output power. Reduction in DC source and switch count makes the system more cost effective, and more useful agriculture by coupling water pwm with motor. A simulation of DC-DC converter is developed and its performance is analysed for various operating parameter conditions.

Keywords: B4 Inverter, Buck Boost converter, dsPIC Controller, DTC, Permanent Magnet Brushless dc Motor, Simulation