

IMPLEMENTATION OF ARTIFICIAL NEURAL NETWORK BASED CLOSED LOOP CONTROL FOR A CASCADED H BRIDGE MULTI LEVEL INVERTER

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ABSTRACT

Multi level inverters are gaining attraction because of the inherent advantages like low switching losses and less voltage stress which results in low filter cost. The common techniques that are available for switching the multi level inverters are based on sinusoidal pulse width modulation and using conventional PI based controllers, hysteresis based controllers. These controllers suffer with slow response time this makes usage of multi level inverters in custom power devices difficult. Because custom power devices require fast acting controller action which can be achieved by intelligent controllers. In this project artificial neural network based modulation scheme is designed and implemented for a cascaded H bridge inverter. The response time of controller for different operating power factors of the load are compared with conventional PI controllers and are presented. The developed control technique is developed by using SimPowerSystems Block set of MATLAB/SIMULINK Release R2015a.

KEYWORDS: Closed Loop Control Techniques, Neural Network Controllers, Scaled Conjugate Gradient Algorithm