Abstract

BLDC motors are mostly known to be driven by trapezoidal control due to its simple implementation, but this type of control results in pulsating torque ripple which is unwanted in high performance drives. In this paper, vector control is combined with a five-level inverter to minimize the torque ripple of BLDC motor in sensorless operation as well as reducing the total harmonic distortion in the voltage and current waveforms. The MATLAB/Simulink environment is used to simulate and verify the proposed method.

References

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Index Terms

Computer Science Control Systems
Keywords

BLDC motor, multilevel inverter, sensorless control, torque ripple reduction, vector control.