Abstract
This paper describes the reduction in torque ripple due to phase commutation of brushless dc motors. The torque ripple at low speeds is reduced by dual switching mode with 120° switching. In this paper an adaptive hysteresis current controller is proposed to eliminate harmonics and to compensate reactive power of VSI fed BLDC drive. An algorithm based on reference frame theory (d-q-0) is used to determine suitable current reference signals. The result of simulation study presented in the paper along with PI controller is found satisfactory to reduce the commutation torque ripple and to eliminate harmonics in the utility current. These results are compared with the conventional sensored BLDC motor drive which is controlled by outer speed loop using PI controller. The above studies have been carried out through detailed digital dynamic simulation using the MATLAB/Simulink.

Reference


Index Terms

Computer Science Wireless

Key words
BLDC motor current
commutation current ripple

current controller