## عنوان مقاله:

The Influence of DC-Link Voltage on Commutation Torque Ripple of Brushless DC Motors with Two-Segment Pulse-width Modulation Control Method


## محل انتشار:

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## خلاصه مقاله:

The commutation process causes current ripple to be generated in the drive system of brushless DC (BLDC) motor. This, in turn, leads to output torque ripple. Mechanical vibration and acoustic noise are its influences which are undesirable phenomenon in some applications. A new method is presented in this paper which reduces torque ripple and commutation period in the entire range of motor speed. This method is designed and implemented based on two-segment pulse-width modulation (PWM) and DC-link voltage doubling during commutation. Based on the presented theory and given the influence of DC-link voltage on ripple magnitude, some experiments are carried out in which simultaneous association of the above mentioned factors in reducing current ripple and commutation time in the entire speed range of rotor has been proved. The experimental results show that the current ripple magnitude in high speed range is almost 20 times less than conventional method based on H-PWM_L-ON technique.



## کلمات کلیدی:

Brushless DC Motors, motor drive system, commutation torque ripple, Pulse, Width Modulation, DC, link voltage