البحث الثالث

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المحتويات:

بيانات عن البحث الثالث

Paper Title	Sensorless based SVPWM-DTC of AFPMSM for electric vehicles		عنوان البحث
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ملخص البحث الثالث

ملخص البحث باللغة الإنجليزية :

AFPMSM is lighter, has a higher power-to-weight ratio, is shorter in length, is less expensive, and has a higher efficiency than the radial flux motor. Then AFPMSM is more suitable for driving the EV than radial flux motor. The proposed technique in this paper is the sensorless-based SVPWM-DTC of AFPMSM to drive electric vehicles. Sensorless research becomes more important in this circumstance since the axial motor can be placed inside the vehicle tire due to its condensed size and shape similar to the tires. DTC provides less fluctuation for the driver during driving for safety and comfort. SVPWM is preferred for its high performance. When measuring speed using a sensorless estimator, sensor inaccuracy is minimized, and the AFPMS motor can be mounted inside the tire. The control system is tested using two EVs driving cycles, and the results promise high performance. NEDC and HWFET driving cycles are used to test the proposed control scheme in 100 times less than the actual driving cycles' time to test the coherence of the sensorless estimator. The results demonstrate that the proposed technique is valid for real-time applications with high-performance, minimum torque fluctuations, and minimum transient and steady-state errors.