Interior Permanent-Magnet Brushless Motor Optimization Design and Computer Analysis

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ABSTRACT

Permanent magnet brushless DC motor(abbreviated PM BLDCM) has been extensively used in recent years. Interior permanent magnet brushless DC motor has high strength structure. The magnet would not break away if high speed operating condition. Rotor (non-concentric), to increase the motor torque output, besides the electromagnetism torque which produces by magnet and coil affect mutually and magnetic resistance torque which produces by saliency effect, But it ’ ll occur cogging torque. This purpose of this article is for analyzing the interior permanent magnet brushless DC motor. We could use utilizing the finite element method to analyzing the cogging torque and change the motor size for achieves the optimization.

Keywords : Surface-mounted permanent magnet brushless motor ; Saliency effect ; Interior permanent magnet brushless motor ; Finite element method ; Cogging torque ; Magnetic circuit model ; permanent magnet

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