Axial-Flux Permanent-Magnet Brushless DC Traction Motor for Direct Drive of Electric Vehicle

Author(s): Rahim, NA (Rahim, N. A.)¹; Hew, WP (Hew, W. P.)²; Mahmoudi, A (Mahmoudi, A)

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Abstract: This paper presents the design of an inside-out axil-flux permanent-magnet brushless DC motor for direct traction drive in an electric vehicle. The prototype motor is a double-sided axil-flux permanent-magnet motor with non-slotted stator. The preliminary design had 16 rotor poles, for high torque density and stable rotation at low speed. The design was simulated via Finite Element Method Magnetics (FEMM) Software, for obtaining of design parameters. The motor was fabricated and tested in an in-wheel test-bed. There exist close agreements between the simulated and experimental results. Copyright (C) 2011 Praise Worthy Prize S.r.l. - All rights reserved.

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