Title:	Design & Simulation of Fuzzy Logic Based Speed Control of SPWM Inverter-fed Electrical Vehicle with Induction Motor taking Core loss and Stray Load Losses into Account
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Abstract:

In modern technology electrical differentials to design Electrical Vehicle (EV) are getting popular for its simplicity, faster response, accurate control capability and other facility. The controller design for the distinctive motors is a captivating and challenging work to acquire sought execution appropriately. For this different kind of controller is used to get accurate results. For Induction Motor (IM) it is very important to control the speed and torque to get smooth control application. Field Oriented Control (FOC) aids the factor and empowers independent control of speed and torque by building up an autonomous relationship is created due to consideration of core loss and stray load losses while modeling Induction Motor which is neglected at most of the works. Here, Induction Motor is modeled with the Fuzzy Logic Controller for more accuracy and simplicity and the Sinusoidal Pulse Width Modulation (SPWM) is utilized as a part of the structure to investigate the performance of IM under various source parameters such as diversity of voltage, frequency and so forth. MATLAB/Simulink is used to execute the simulation results.

Keywords: Electrical Vehicle, Induction Motor, Fuzzy Logic Controller, Sinusoidal Pulse Width Modulation, Field Oriented Control