INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI
SHORT ABSTRACT OF THESIS

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SHORT ABSTRACT

In recent years, the rise in developing nations' economic activities has resulted in the rapid expansion of cities. This expansion of cities has emanated an increase in vehicular traffic, which has led to deterioration in air quality. Air quality deterioration is mainly because of the emission from internal combustion engine vehicles, which shared nearly 20-25% of the total air pollution. To address the problem of unprecedented air pollution caused by the internal combustion engine-based vehicle, governments worldwide have launched various programs, policies, and incentives to increase penetration of vehicles that are not fossil fuel-based. One of the acceptable solutions is to shift electricity-based transportation, i.e., adaptation of electric vehicles (EVs). The major challenge in the faster adoption of EVs is to develop affordable electric vehicles that fulfill the need of the market and mass users. One possible way to accomplish these targets is to develop an efficient and low-cost drivetrain, apart from high-capacity batteries, in a short span of time. To develop an EV drivetrain in reduce time, it is essential to adapt the available speed control methods proposed for industrial applications to modify for use in electric vehicles. In this thesis work, such an adaptation is presented for an EV drive with direct torque control (DTC) of induction motor (IM).