Development of hub motor drive and on-road verification for PGO electrical scooters

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ABSTRACT

In recent years, as the environmental protection cost has risen and global warming, it is important to slow down the environment from pollution. How to cherish the earth has become the main topic of discussions. In Taiwan, motorcycle density is among the top countries in the world, environmental pollution results in serious. For that reason, it has low pollution, low noise and energy saving of the green transportation-electrical scooters becoming the rising stars. This study used a PGO's electrical scooter, named E-BUBU, as the main test vehicle. The electrical scooter is configured with two hub motors. Electric control system used by digital signal processor DSP as a control core. The hardware circuit units including the isolation circuit, the driver circuit, the power module and the protection circuit. By using development and integration of software and hardware, a hub motor drive is developed successfully in the thesis. After the drive design to complete, an electrical scooter platform testing and on-road verification is also established. On-road verification includes flat-road testing and slope testing. According to the results, it shown this study developed hub motor drive can really meet the electrical scooter's riding demand.

Keywords : electrical scooter hub motor digital signal processor DSP on-road verification

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