

A Study of Lightweight Electric Powered Wheelchair

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ABSTRACT

Due to the aging of our society, the electric powered wheelchairs become more and more needed. However, the electric powered wheelchairs on the market currently are bulky, heavy, and costly. The present thesis focuses on the feasibility of converting a self-propelled wheelchair into a lightweight electric powered wheelchair by adding a hub motor to one of its rear wheels. The commercial code ADAMS was used to predict the motion of the wheelchair and a lightweight electric powered wheelchair was fabricated to perform the road test. The results show that the outcomes of simulations and road tests are in good agreement and this lightweight electric powered wheelchair is feasible and deserves further development and commercialization

Keywords : Electric wheelchair ; Lightweight ; ADAMS

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