

# **Adaptive Fuzzy Logic in Intelligent Electric Drive Add-On for Diffable Wheel Chair**

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## **ABSTRACT**

The product development model uses the Research and Development method. This research is a systematic review of complete scientific knowledge or understanding of the subject of BLDC motor adaptive control technology. Development is defined as the systematic application of knowledge and understanding, directed towards the production of useful materials, devices, and systems or methods, including the design, development and improvement of new priorities and processes to meet specific requirements. The Research and Development Cycle consists of Research and Information Gathering, Planning, Initial form development, Initial field trials, Main product revisions, Main field trials, Product operations, Operational field trials, Final product revisions and Dissemination and distribution.

From the battery endurance test data that every 0.1 Volt voltage drop can travel up to 200 meters. User test results gave comfortable answers and only one gave uncomfortable answers. For the use of brakes, all the answers can be used. In terms of the convenience of the location of the footprints, all answered comfortably, so that it can be interpreted that the location of the footprints in the wheelchair is as expected. Likewise with the convenience of pulling the gas lever, passengers independently sitting in the wheelchair, independent seating arrangements, comfortable turning, wheelchair access that can walk in public places, wheelchair speed which is fast enough to reach the destination, comfortable hand position in driving, the eye view is not obstructed, the wheelchair is feasible if it is mass produced, all of them answer yes, so it can be concluded that the above questions are good in making wheelchairs and it is even recommended to mass produce it. The research was conducted within a period of two years. The mandatory research output targets are simple patent product prototypes that have been registered with DGIP, and product trial results. Additional output targets in the second year are publication articles, while in the first year they are published in ICERI proceedings. While the TKT target in the first year reached TKT 5 and the second year it increased to TKT 6.

Kata Kunci: *wheelchair, electric drive*