
A Study on Performance Optimization of Fuel Cell Electric Tricycle Through Key Parameters

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This study presents a method for improving the performance and energy efficiency of Fuel Cell Electric Tricycles (FCETs) by analyzing the effects of key input parameters. The study uses a combination of Artificial Neural Network (ANN) and Genetic Algorithms (GA) to predict and identify optimal performance settings. A simulation model of the FCET is built using MATLAB-Simulink to generate data for training, validating, and testing the ANN. The GA applied to optimize performance and energy usage based on the results of the trained ANN. An experimental testing is carried out to validate the simulation results and assess the reliability of the proposed approach. Results show good match between the simulation and the experimental data under the same initial conditions. This strategy support the development of fuel cell electric tricycles as a more viable and sustainable form of urban transportation while offering an efficient means of addressing issues with FCET performance.