

Fuel Economy of Electrical Energy in the City Bus during Japanese Test Procedure

Authors : Piotr Kacejko, Lukasz Grabowski, Zdzislaw Kaminski

Abstract : This paper discusses a model of fuel consumption and on-board electricity generation. Rapid changes in speed result in a constantly changing kinetic energy accumulated in a bus mass and an increased fuel consumption due to hardly recuperated kinetic energy. The model is based on the results achieved from chassis dynamometer, airport and city street researches. The verified model was applied to simulate the on-board electricity generation during the Japanese JE05 Emission Test Cycle. The simulations were performed for several values of vehicle mass and electrical load applied to on-board devices. The research results show that driving dynamics has an impact on a consumption of fuel to drive alternators.

Keywords : city bus, heavy duty vehicle, Japanese JE05 test cycle, power generation

Conference Title : ICPPS 2018 : International Conference on Power and Power Systems

Conference Location : Kyoto, Japan

Conference Dates : April 26-27, 2018