

Engine and Auxiliary Systems

Edited by
Prof. Dr. A.K.M. Mohiuddin



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Comparison of various types of powertrain used in automotive vehicles in terms of performance and emission

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Abstract

Increasing environmental pollution, decreasing of fossil fuel and risk of health issues was major reason for searching alternative fuels. As a result, vehicle consumers demand environmental friendly vehicles with low emission. Therefore, vehicle manufactures focus on meet up this demand by introducing different powertrain technology and alternative fuel operated vehicles. Performance is one of the most priorities of the consumer. On the other hand vehicle makers has to make sure the introduced powertrain will give maximum performance and minimum exhaust emission, reduce fuel consumption. In addition, factors like cost, quality, reliability and life of the powertrain should be considered. This chapter will be highlighted comparison of various types of powertrain used in automotive vehicles in terms of performance and emission.

Keywords: powertrain, hybrid, battery electric, fuel cell, alternative fuel.

Introduction

Automotive engine emissions are known as a main source of environmental pollution particularly in urban areas. However, internal combustion engine remains the dominant power mover for technological and cost reasons. In recent years, major automobile manufactures commercialized several types of low greenhouse gas emission vehicles such as hybrid powertrain, battery electric vehicles, fuel cell vehicles and alternative fuels operated vehicles. Performance and emission produced from different powertrain vary from system to system. However, the main purpose is to increase automotive performance and decrease emission. The aim of this study is to identify the performance and emission produced by different powertrain systems.