Green engines essay sample

Green Engines Development Using Compressed Natural Gas as an Alternative Fuel: A Review Semin, 2R. A. Bakar and 2A. R. Ismail 1 Department of Marine Engineering, Institute of Technology Sepuluh Nopember Surabaya, Campus ITS, Sukolilo, Surabaya 60111, Indonesia 2 Automotive Excellent Center, Faculty of Mechanical Engineering, University Malaysia Pahang, Locked Bag 12, 25000 Kuantan, Pahang, Malaysia Abstract: Problem statement: The Compressed Natural Gas (CNG) is a gaseous form of natural gas, it have been recognized as one of the promising alternative fuel due to its substantial benefits compared to gasoline and diesel. Natural gas is produced from gas wells or tied in with crude oil production. Approach: Natural gas is promising alternative fuel to meet strict engine emission regulations in many countries.

Compressed Natural Gas (CNG) has long been used in stationary engines, but the application of CNG as a transport engines fuel has been considerably advanced over the last decade by the development of lightweight high-pressure storage cylinders. Results: The technology of engine conversion was well established and suitable conversion equipment is readily available. For petrol engines or spark ignition engines there are two options, a bi-fuel conversion and use a dedicated to CNG engine. The diesel engines converted or designed to run on natural gas, there were two main options discussed. There are dual-fuel engines and normal ignition can be initiated. Natural gas engines can be operated at lean burn and stoichiometric conditions with different combustion and emission characteristics. Conclusions: In this study, the low exhaust gas emissions of CNG engines research and development were highlighted.

Stoichiometric natural gas engines were briefly reviewed. To keep the output power, torque and emissions of natural gas engines comparable to their gasoline or diesel counterparts. High activity for future green CNG engines research and development to meet future stringent emissions standards was recorded in the study. Keywords: Compressed natural gas, emissions, green alternative fuel, green engine development INTRODUCTION It is well known that fossil fuel reserves all over the world are diminishing at an alarming rate and a shortage of crude oil is expected at the early decades of this century.

Probably in this century, it is believed that crude oil and petroleum products will become very scare and costly to find and produce. Gasoline and diesel will become scarce and most costly[13]. Alternative fuel technology, availability and use must and will become more common in the coming decades. Any researchers did the several research to substitute fossil fuel oil to another alternative fuels and one of it is used natural gas[6-56]. Natural gas is found in various locations in oil and gas bearing sand strata located at various depths below the earth surface[13]. The natural gas is usually under considerable pressure and flows out naturally from the oil well. In addition to this, the deteriorating quality of air we breathe is becoming another great public concern and tighter regulation of both local and global emissions from engines is anticipated. Natural gas is the most favorite for fossil fuel substitution[11]. Compressed Natural Gas (CNG) is a gaseous form of natural gas, it have been recognized as one of the promising alternative fuel due to its substantial benefits compared to gasoline and diesel. These include lower fuel cost, higher octane and most certainly, cleaner exhaust gas emissions.

Therefore, the number of vehicle powered by CNG engine was growing rapidly[5, 12]. The great problems of the world in the internal combustion engines usage until today, according to[2, 4, 5] are focuses on environment protection and economically fuel consumption. In the internal combustion engines there are any gasoline engines and diesel engines were used to generate the power in industries and transportations. According to[2, 4, 5] the problems needed the new design, research and technology to found the new design of the new engine or its component so its can use of the alternative fuels another gasoline and diesel, protect and friendly with the environment, high power and efficient in fuel consumption.

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