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## *COMPATIBILITY ISSUES OF HHO CELL WITH INTERNAL COMBUSTION ENGINE*

**Kishore Kumar\***, **Zeeshan Ali<sup>+</sup>**, **Javed Rahman Larik<sup>+</sup>**

\*Postgraduate, Department of Manufacturing Engineering, MUET, Jamshoro.

+Faculty Member, Department of Mechanical Engineering, MUET, Jamshoro.

**Abstract:** Core intimation of this research paper is to focus on motor vehicle industry, and to reduce the emission of venom gases after the burning of fuel in internal combustion engine, by adding HHO gas as a supplement fuel. Analyzing of HHO (brown gas) generator, and address the problems arises during the integration of HHO gas generator with the petrol engine without any physical modification in the overall system. Supplementing a certain quantity of HHO gas into the intake manifold of a petrol engine can decrease the consumption of fuel and can substantially improve the emissions.

It is essential to figure out various factors when integrating the HHO gas generator with the petrol engine. The most important problem is to find out the air-fuel ratio of air, gasoline, and HHO gas. The vehicle cannot be analyzed by hit and trial methods to find out this air-fuel ration. Therefore, a detailed mathematical analysis is mandatory for the appropriate solution. In order to reduce the fuel consumption it is essential to investigate that how much fuel supply should be reduced and how much HHO gas should be added to get the same torque and speed ratio. Moreover, the compression ratio for this new combination and spark plug timings are also under investigation. These all factors should be properly addressed so the proposed HHO generator model can be utilized effectively. The bottom line of this study is to investigate the shortcomings associated with the integration of HHO generator with the petrol engine.

**Keywords:** HHO; IC-Engine; petrol