

Development of exhaust leak detector device for automotive service industry: A prototype design

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Abstract

The exhaust system plays a vital role in removing the gaseous emissions that is being produced within the combustion chamber during fuel-air mixture activities. The exhaust system is defined as a series of chambers and pipes that starts at the engine and ends at the back of the car with the tail pipe. However if there are any leaks in the exhaust system, it provide a direct path for the emission gaseous including carbon monoxide to enter can be very dangerous as it provides a direct path for carbon monoxide and other dangerous gaseous emissions to enter the cowl vent at the base of the windshield and directly to the passenger compartment. The risk of exposure to these hazardous gaseous is also high especially during vehicle maintenance services in suspected cases of leakages to the exhaust system. The inspection of the exhaust system is done manually in most of the automotive services workshops. In this paper, accidental risks of performing these inspection jobs on a vehicle's exhaust system, performed by a technician are discussed. In order to minimize the risks to technicians or mechanics, a prototype device to detect exhaust leakage was developed using a gas sensor module and a web camera. This device was successfully operated in detecting possible leakages of the exhaust system.

Author keywords

Automotive Services; Exhaust System; Leak Detector Design

DOI: 10.18517/ijaseit.6.4.897