

## [ABS-157] Study The Performance and Emissions of Deionized Water Fuel in Diesel Engine

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### Study The Performance and Emissions of Deionized Water Fuel in Diesel Engine

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#### Abstract

The current situation of high prices of petroleum oil needs to be studied to find alternative fuels that can reduce some emissions. The use of biodiesel in a mixture of diesel fuel is an alternative to address the global crisis related to the depletion of petroleum reserves. Moreover, mixing biodiesel into diesel fuel can reduce some emissions such as CO, HC, and particulate matter. However, the NOx emissions are still high. The purpose of this study is to analyze the performance and emissions using diesel fuel with a mixture of deionized water (ratio 60:40) in comparison with Indonesian diesel fuel (B30). Test fuels are conducted in a diesel engine with different loads of idle, 36% and 68% with the engine rotation of 1500 rpm. The results show that mixing 40% deionized water with diesel fuel can reduce NOx emissions by 180 mg than diesel fuel at 68% load. Moreover, the specific fuel consumption can be down up to 3% more than diesel fuel. Therefore, deionized water fuel can be the solution to make better fuel properties, can reduce emissions, and be friendly to the environment. **(Approx. 185 words)**

**Keywords:** Biodiesel- Emissions- Diesel Fuel- Deionized- Alternative Fuel

**Topic:** Engineering

**Type:** Oral Presentation

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