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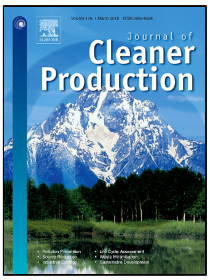

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Effects of different water percentages in Non-Surfactant Emulsion Fuel on performance and exhaust emissions of a light-duty truck

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ABSTRACT

The interest in emulsion fuel grows worldwide because it is potentially more environment-friendly than its base fuel. Nonetheless, it has yet to be widely used as it is pricier than conventional diesel fuel due to its dependency on surfactant. This paper highlights the application of non-surfactant emulsion fuel in a light-duty truck (1 ton). The fuel is produced on demand with the so-called Real-Time Non-Surfactant Emulsion Fuel Supply System (RTES) just before being transferred into the engine. The emission characteristics and performance of the truck were then evaluated. To identify the optimum water percentage, the RTES is controlled to produce an emulsion with various water percentages during the testing. The