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## **Investigation of Cordierite Partial Flow Particulate Filter on a Light-duty Diesel Vehicle Thermal Efficiency and Particle Emission**

### **Objective**

This research aims to investigate the impacts of a cordierite partial flow particulate filter (P-DPF) on fuel consumption, brake thermal efficiency, as well as harmful particle and gaseous emissions from a light-duty untreated diesel vehicle using biodiesel blends.

### **Result**

The results indicate a negligible increase in fuel consumption and comparable brake thermal efficiency in cases with and without the installation of P-DPF due to minor elevated backpressure. Furthermore, up to 60% of particulate matter (PM) mass and 39% of particulate number (PN) were reduced, along with a significant reduction in total HC and CO emissions. According to the results, the P-DPF shows an effective solution for reducing regulated particles and gaseous emissions from untreated diesel vehicles without additional control system.