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Implementing Variable Valve Actuation on a Diesel Engine at High-Speed Idle Operation for Improved Aftertreatment Warm-Up

A precise actuator speeds aftertreatment warm-up and maintains emissions compliance even at high idle.

Researchers at Purdue University have developed a new variable valve actuation device for diesel engines. There remains an unmet need to improve aftertreatment warm-up performance in diesel engines at high-speed idle operation. Regulations for diesel engines are ever more pertinent in the wake of environmental challenges; however, current exhaust gas heaters and burner for diesel engine control are typically unable to meet this need as they are often expensive and inaccurate. Purdue researchers have developed a cost effective, state-of-the-art actuator that provides enhanced thermal calibration. This technique reduces the time for particulate matter (PM) oxidation significantly as compared to current equipment and allows engine idle speeds all the way up to 1,200 RPM after warm-up while still meeting the latest emission standards.

Advantages:

-Efficient

-Accurate

-Reliable

Potential Applications:

-Diesel Engines

-Engine management

TRL: 4

Intellectual Property:

Technology ID
2019-SHAV-68649

Category
Automotive & Mobility
Tech/Internal Combustion Engine Optimization
Semiconductors/Packaging & Integration

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View online

Provisional-Patent, 2020-03-30, United States

Utility Patent, 2021-03-30, United States

Keywords: Actuators, Automotive, Chemical Engineering, Diesel Engine, Electrical Engineering, Emissions, Engines, Exhaust Breath, Fuel, Gas Turbine, Mechanical Engineering, sensor, Sensors and Actuators, Thermal Management, Turbine Engines, Warming