



energies



Special Issue Reprint

Advances in Internal Combustion Engines and Motor Vehicles

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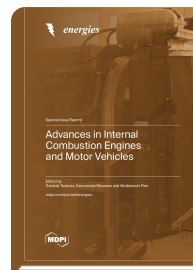
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This reprint presents methods and possibilities of reducing emissions of harmful exhaust components and greenhouse gases via CI. To this end, experimental research and theoretical analyses were carried out, resulting in the following measurable effects: Experimentally validated an innovative CNG (compressed natural gas supply system with a high degree of substitution of up to 95%, whereas typical substitution in commercial engine installations oscillates around 55%); Experimentally verified the methodology for optimising the CNG fueling system controller software using the developed chassis dynamometer; the influence of the dynamometer's operating parameters on the results obtained was evaluated; Gaseous fuel exchange limits in a dual-fuel CI engine were determined; the effect of the Diesel/CNG exchange ratio on the energy parameters of engine operation and the emission of exhaust gas components was evaluated; The effect of changing the air filter pressure drop in the inlet system of a modern truck engine on the energy parameters of engine operation and changes in the emission of individual components of the exhaust gas and smoke were determined experimentally; The values of the dust absorption coefficient of filter beds made of highly absorptive filtration materials, including the "PowerCore" bed, limited by the achievement of acceptable flow resistance, were determined experimentally with the use of a test dust and particle counter; The range of values of geometrical and flow parameters of the cyclone for which it achieves minimum pressure drop, maximum filtration accuracy was determined.



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