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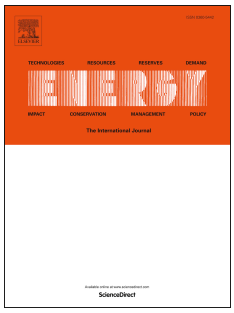

Evaluation analysis of particulate relevant emission of a diesel engine running on fossil diesel and different biofuels

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Evaluation analysis of particulate relevant emission of a diesel engine running on fossil diesel and different biofuels

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HIGHLIGHTS

- Diesel, FAME-biodiesel and TBK-biodiesel have been investigated in a CI engine.
- Four, different, particulate relevant measurements were used.
- Increasing the bio rate to fossil have a significant effect in particulate emission.
- Changes in particulate emission show different tendencies among the used methods.

Abbreviations:
CI engine – Compression Ignition engine; TBK – the first character of the surnames of the three inventors (Thész, Boros, Király) of the new biofuel production technology; TOMS – Triglycerides Of Modified Structures (the English name of TBK-Biodiesel); ICE – Internal Combustion Engine; FSN – Filter Smoke Number; PM – Particulate Matter; k value – coefficient of opacity; EN – European Norm; SMPS – Scanning Mobility Particle Sizer; LDMA – Long Differential Mobility Analyser; CPC – Condensation Particle Counter; CVS – Constant Volume Sampling; PDP – Positive Displacement Pump; CMD – Count Median Diameter; GSD – Geometric Standard Deviation; EGR – Exhaust Gas Recirculation; RME – Rapeseed Methyl Ester; PME – Palm oil Methyl Ester; SME – Soybean oil Methyl Ester; FAME – Fatty Acid Methyl Ester; FSO – Full Scale Output; BC – Black Carbon; EC – Elemental Carbon; BrC – Brown Carbon; AAE – Absorption Angström Exponent; ESC – European Steady-state Cycle.

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