DIFFERENTIATION OF DISPERSE PARTICLES IN DIESEL EXHAUST GASES

A. R. Kulchitskiy

Mashinery & Industrial Group N.V., 43 Traktornaya Str., Vladimir, Russian Federation

Abstract: A technique for calculating the content of dispersed particles and their main constituents in exhaust gases of diesel engines is described. The developed method differs from the known ones and allows (i) categorizing the integral indicator of emission of dispersed particles into four main components in each of the test cycle regimes; namely, soot, solid sulfates, heavy hydrocarbons from oil combustion, and similar hydrocarbons from combustion of fuel; (ii) estimating the emission of dispersed particles from exhaust gas for both vehicles and engines under operating conditions; and (iii) taking into account the dependence of the content of the various constituents in the exhaust gases of diesel engines on the mode of engine operation. The results of application of the specified technique to improve the ecological parameters of the diesel engine intended for the use in off-road self-propelled engineering are discussed.

Keywords: diesel engine; disperse particles; soot; firm sulphates; heavy hydrocarbons; fuel; oil

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Contributor

Kulchitskiy Alexey R. (b. 1951) — Doctor of Science in technology, chief specialist, Mashinery & Industrial Group N.V., 43 Traktornaya Str., Vladimir, Russian Federation; ark6975@mail.ru