

Title (en)
NOx generation quantity estimation method for internal combustion engine

Title (de)
Verfahren zur Schätzung der in einer Brennkraftmaschine erzeugten NOx-Menge

Title (fr)
Procédé d'estimation de quantité de NOx générée dans un moteur à combustion interne

Publication
EP 1529941 B1 20111123 (EN)

Application
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Priority
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Abstract (en)
[origin: EP1529941A2] In an NO x generation quantity estimation method for an internal combustion engine, the concentration of a gas contained in intake gas and serving as a material for generation of NO x , (intake-gas oxygen concentration), a load index value indicating the load of the engine (fuel injection quantity), an atomization index value indicating the degree of atomization of fuel within the combustion chamber (fuel injection pressure), and the highest flame temperature are selected as peripheral condition quantities in relation to gas mixture which affect the quantity of NO x generated in a combustion region as a result of combustion. A combustion-generated NO x quantity per unit fuel quantity (combustion-generated NO x ratio) is obtained on the basis of the four peripheral condition quantities and a predetermined empirical formula which defines the relation between the four peripheral condition quantities and the combustion-generated NO x ratio. Subsequently, the quantity of generated NO x is estimated through multiplication of the combustion-generated NO x ratio by the fuel injection quantity.

IPC 8 full level
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Cited by
CN105275636A; EP2796694A3; CN102192019A; CN106837571A; CN114542252A; US10309287B2; US10503128B2; US10235479B2; US9650934B2; US9921131B2; US11057213B2; US10036338B2; US10124750B2; US10415492B2; US11506138B2; US10272779B2; US11180024B2; US9677493B2; US10309281B2; US10423131B2; US11144017B2; US11687047B2; US10621291B2; US11156180B2; US11619189B2; US11687688B2

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