

Title (en)  
METHODS AND SYSTEMS FOR REDUCING THE FORMATION OF OXIDES OF NITROGEN DURING COMBUSTION IN ENGINES

Title (de)  
VERFAHREN UND SYSTEM ZUR REDUZIERTEN BILDUNG VON STICKOXIDEN WÄHREND VERBRENNUNGSVORGÄNGEN IN MOTOREN

Title (fr)  
MÉTHODES ET SYSTÈMES DE RÉDUCTION DE LA FORMATION D'OXYDES D'AZOTE LORS DE LA COMBUSTION DANS UN MOTEUR

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Application  
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- US 23742509 P 20090827
- US 23746609 P 20090827
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- US 58182509 A 20091019
- US 30440310 P 20100213
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Abstract (en)  
[origin: WO2011102822A1] The present disclosure is directed to various embodiments of systems and methods for reducing the production of harmful emissions in combustion engines. One method includes correlating combustion chamber temperature to acceleration of a power train component, such as a crankshaft. Once the relationship between acceleration/deceleration of the component and combustion temperature are known, an engine control module can be configured to adjust combustion parameters to reduce combustion temperature when acceleration data indicates peak combustion temperature is approaching a harmful level, such as a level conducive to the formation of undesirable oxides of nitrogen. Various embodiments of the methods and systems disclosed herein can employ injectors with integrated igniters providing efficient injection, ignition, and complete combustion of various types of fuels.

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Citation (search report)

- [I] DE 10356133 A1 20050714 - FRAUNHOFER GES FORSCHUNG [DE]
- [I] DE 102006021192 A1 20071108 - DEUTZ AG [DE]
- [I] DE 19731329 C1 19980610 - DAIMLER BENZ AG [DE]
- See references of WO 2011102822A1

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