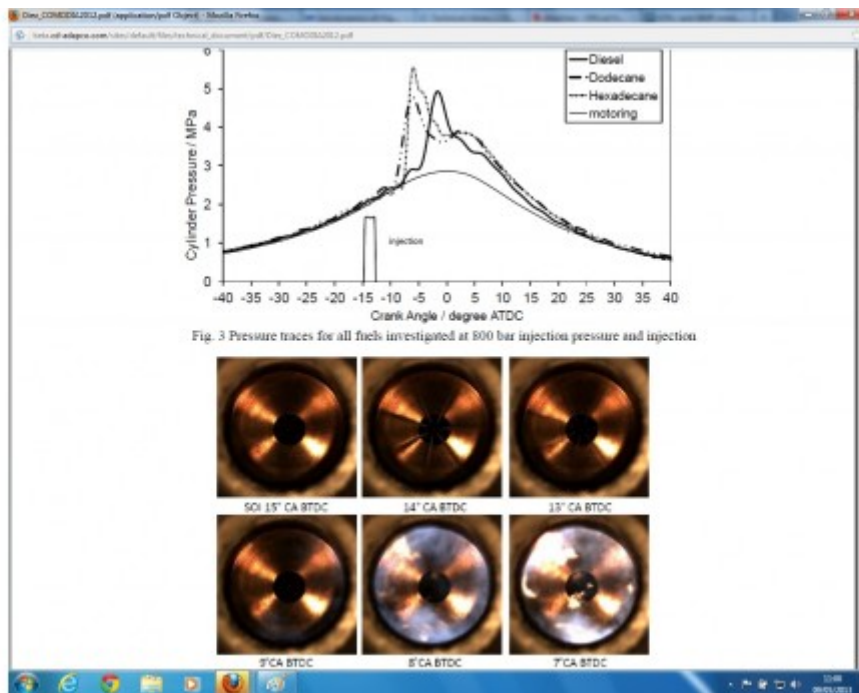


An experimental and modelling approach to the determination of auto-ignition of diesel fuel, dodecane and hexadecane sprays at high pressure

**Date:**

Thursday, May 9, 2013

Abstract:

In recent years the use of computational simulation tools for combustion research has appeared as a way to reduce time and cost in engine research. These tools face important challenges due to the complexity of the composition of the hydrocarbon petroleum fuels. One of the solutions to this problem is the use of surrogate fuels, with known physical and chemical properties and combustion characteristics similar to real fuels. This paper presents experimental and modelling studies of auto-ignition for long-chain hydrocarbon fuels such as dodecane and hexadecane. Results show a very good agreement for dodecane fuel and hexadecane fuel, with small differences for the latter at lower temperatures which could be caused by intrinsic nature of the model. These results represent as first step on the development of a surrogate diesel fuel for auto-ignition and soot modelling.

 [Diez_COMODIA2012.pdf](#)^[1]**Author Name:**

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