

Diesel Fuel Perspectives for Reduced Pollutant and CO₂ Emissions

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The reduction of greenhouse gas emissions, together with the reduction of fuel consumption, the improvement of air quality and the widening of energy resources are major axis for improvement of engines and for the development of new fuel formulations. Yet, diesel engine technology was strongly improved during the last 10 years with the widespread use of high pressure direct injection and the implementation of post-treatment specific devices. Further, the future regulatory requirements will bring new constraints which will favor the use of advanced strategies, both for combustion parameters and post-treatment. Among others, the new combustion modes as LTC and HCCI combustion process seem promising solutions. These technological changes will induce an evolution of the fuel needed properties and to the development of new essential characteristics to be able to use these new technologies with the largest benefits. Besides, the need to reduce greenhouse gas emissions and to enlarge the energy sources creates the opportunity for the emergence of new fuels such as biofuels. Then, the European context creates development perspectives for Biofuels. After a large presentation of the general context, dedicated to engine technologies and fuel formulation, a strong attention will be pay on the different pathways available for Diesel fuel formulation using Biofuels covering the broadest range of Biofuels technologies.

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