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Tracer doped lubrication oils: a new method to investigate the Influence on particle formation

Due to increasing concern about health effects of fine and ultra-fine particles (nanoparticles) from combustion engines diesel particle filters become a key technology in minimising soot emission of heavy duty engines and passenger cars in the last years. In this respect, a very important parameter is the irreversible plugging of the DPF with non-combustible ashes. Lubrication oil has a significant influence. Thus, the effects of different lubrication oils on particle formation and emission are of major interest. The quality of lubrication oil, especially the ash and the sulphur content has a certain influence on loading and required regeneration intervals of a diesel particle filter system.

It is evident to investigate how different lubrication oils influence the particle formation and the contribution of oil to toal particle emissions. Therefore a tracer study on a modern diesel engine has been performed with different lubrication oils. The comparison of non-doped oils with oils doped with defined tracers s hould enlighten the contribution of the oil to the particle formation.

Short C.V.

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