

Comparison of different techniques for measurement of soot and PM emission from Diesel engine

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Here we present the comparison studies between different techniques for measurement of soot and particulate matter (PM) emissions from passenger car Diesel engine. The compared techniques include a filter paper type smoke meter, photo-acoustic spectrometer, opacimeter, differential mobility spectrometer and laser induced incandescence. We mainly focus our study to static and dynamic transient measurements tests from the location position closer to the actual combustion event - downstream of the turbine, position characterised by the higher temperature and higher pressure of the emission gas, than the standard measurement position, in the tailpipe of the exhaust manifold. The main task is to reveal the most accurate and sensitive method for fast soot and PM emission measurement for this particular measurement position. The issue of accuracy reliability of measured emission response and understanding of variances in measured soot emission due to different applied techniques can help to minimise the soot and a particulate matter emissions from diesel engines and to meet the future European emission standards.