CAMBUSTION

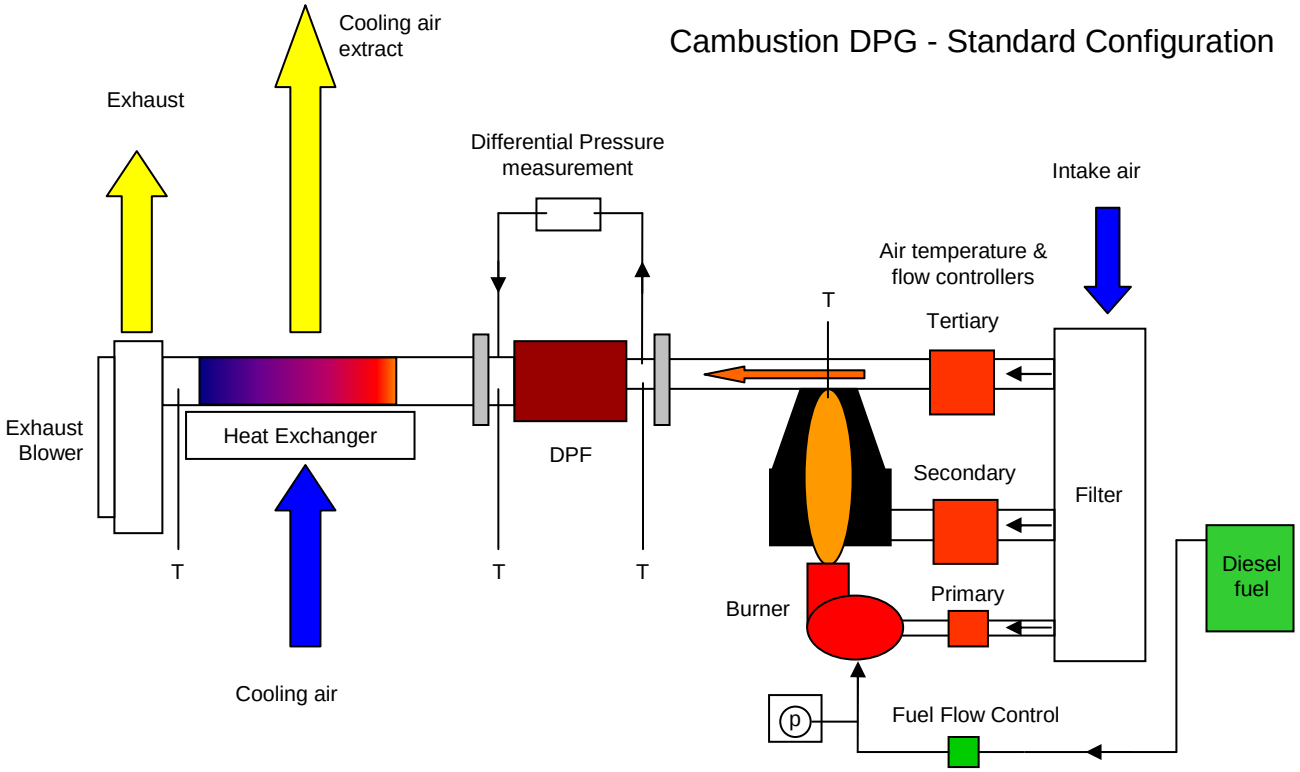
A Standard Soot Generator for Diesel Particulate Filter Testing

Poster - P10

Diesel Engine Emission Reduction Conference 2007

Chris Nickolaus

Principles:



Controlled combustion of diesel fuel to produce engine representative soot

Burner at ~ atmospheric pressure - prevent changing aerosol as DPF Δp increases

System records temperatures & pressures to allow monitoring of DPFs

Can warm up filter without loading any soot allowing detailed study of pore filtration

Current max load rate 10g/h

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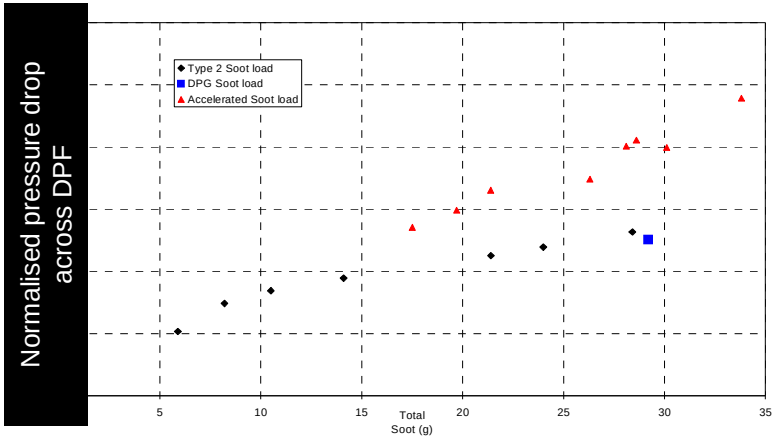
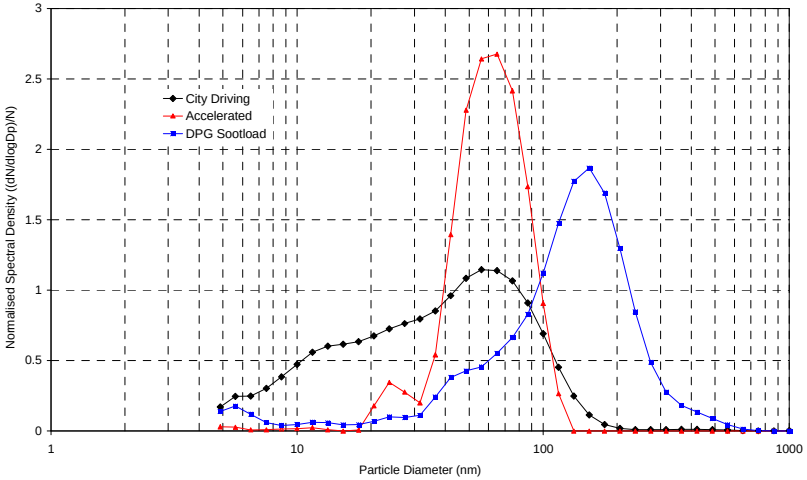
Ongoing Comparisons:

Engine soot varies in its backpressure / load mass

DPG soot resembles driving cycle soot in this test





Engine soot and DPG soot have different agglomerate diameters

BUT: Pore size is still much larger (0.01mm) than either DPG (~150nm) or engine soot (~65nm)

Similar EC/OC ratio

Poster also looks at REGENERATION

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