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 ∆p 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
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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