

Investigation of Soot Regeneration Behavior in the DPF Cleaning Device

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Abstract : To meet stringent diesel particulate matter regulations, DPF system is essential after treatment technology providing exceptional reliability and filtration performance. At low load driving conditions, the passive type of DPF system is ineffective for regeneration method due to the inadequate of engine exhaust heat in removing accumulated soot from the filter. Therefore, DPF cleaning device is necessary to remove the soot particles. In this work, the numerical analysis on the active regeneration of DPF in DPF cleaning device is performed to find the optimum operating conditions. In order to find the DPF regeneration characteristics during active regeneration, 5 different initial soot loading condition are investigated. As the initial soot mass increases, the maximum temperature of DPF and regeneration rate also increase.

Keywords : active regeneration, DPF cleaning device, pressure drop, Diesel Particulate Filter, particulate matters, computational fluid dynamics

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