

HEAVY-DUTY NO_x EMISSIONS CONTROL: REFORMER-ASSISTED VS. PLASMA-FACILITATED LEAN NO_x CATALYSIS

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ABSTRACT

Recent efforts in plasma-facilitated lean NO_x catalysis and thermal lean NO_x catalysis have shown that hydrocarbon speciation has a dramatic impact on catalyst performance. In particular, use of oxygenated hydrocarbons as reducing agents results in better NO_x efficiency than typical fuel hydrocarbons. In a cooperative research and development agreement between

Pacific Northwest National Laboratory and Caterpillar, Inc., reformation of non-oxygenated hydrocarbons to oxygen-containing molecules is being examined as a way to enhance performance in lean NO_x catalyst systems. Recent results for reformer-assisted catalysis are compared to results using traditional plasma-catalysis.