

**DEVELOPMENT OF CATALYTIC MATERIALS FOR
A NON-THERMAL PLASMA AFTERTREATMENT**

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An optimized catalytic material for a plasma-assisted catalytic system will be required in order to achieve maximum deNO_x performance over a wide range of operating conditions with minimum fuel economy penalty. With the progression of the understanding of the reaction mechanisms and the role of non-thermal plasma for NO_x reduction, the rational choice of catalytic materials to be integrated with a plasma device is becoming clearer. The production of NO₂ and partially oxidized hydrocarbons by a non-thermal plasma provides a favorable environment for many lean-NO_x catalysts. Catalytic materials that take advantage of these reaction conditions have been evaluated for application in plasma-assisted catalysis (PAC). This presentation will show the recent progress in a plasma-enhanced catalysis CRADA program funded by the DOE Office of Heavy Vehicle Technologies. NO_x reduction exceeding 90 percent has been demonstrated by researchers at Pacific Northwest National Laboratory and Caterpillar, Inc.