

NTRD Program Disclaimers

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**Texas Commission on Environmental Quality
New Technology Research & Development (NTRD) Program
Monthly Project Status Report**

Contract Number: _____582-5-70807-0007_____

Grantee: _____Lamar University_____

Date Submitted: _____December 15, 2005_____

Report for the **Monthly** period:

Starting Date ___November 15, 2005___ Ending Date ___December 14, 2005___

Section I. Accomplishments *(Please provide a bulleted list of project accomplishments as well as a description of their importance to the project.)*

- **PM Removal Efficiency Characterized** – Ten engine tests have been performed to characterize the PM removal efficiency and the corresponding pressure drop associated with the designed PM filter. In each test, the PM samples were taken from the inlet and the outlet of the PM filter for 30 minutes. The results have indicated an average PM removal efficiency of 92%. The pressure drops across the PM filter have been observed to be increased with time. During these tests, the engine/generator load was at 70% by using resistive electric heaters during the test. The engine exhausts have also been analyzed with Testo 350 Portable Emission Analyzer for CO, CO₂, NO, NO₂, NO_x, SO₂ and O₂ at various engine loads. Analysis of each component agrees well with the engine exhaust data supplied by the manufacturer.
- **Temperature Profile in SiC Wall Filter Measured** - Temperature profile measurements in a 50mm D x 150 mm L SiC wall filter have been performed. This provides essential information leading to a proper wave guide design for obtaining uniform temperature profiles in the filter. A 1000-watt microwave oven was used to perform these measurements without any gas flow through the filter cell
- **Wall Filter Holder Assembled** - A filter holder made out of quartz has been assembled for being installed in a microwave oven. After temperature profile measurements done with air flow, the holder will be installed in the test unit for Diesel engine exhaust soot filtering and regenerating tests.

Indicate which part of the Grant Activities as defined in the grant agreement, the above accomplishments are related to:

The above accomplishments are related to Tasks 1, 2 and 3 described in the Scope of Work of the project.

Section II: Problems/Solutions

<p>Problem(s) Identified</p> <p><i>(Please report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project)</i></p>	<p>No problems were experienced during this performance period.</p>
<p>Proposed Solution(s)</p> <p><i>(Please report any possible solution(s) to the problem(s) that were considered/encountered)</i></p>	<p>None (No Problems experienced)</p>
<p>Action(s) Conducted and Results</p> <p><i>(Please describe the action(s) taken to resolve the problem(s) and its effect)</i></p>	<p>None (No Problems experienced)</p>

Section III. Goals and Issues for Succeeding Period: *(Please provide a brief description of the goal(s) you hope to realize in the coming period and identify any notable challenges that can be foreseen)*

The goals for the next month are to:

1. Complete engineering design and perform leak tests in the assembling of the 2-inch PM filter into the quartz holder;
2. Establish comprehensive dynamic pressure drop data with varying engine loads; and
3. Conduct off-line PM destruction tests with microwave energy.

The next Monthly Progress Report will be submitted to TCEQ by January 15, 2006.



Date: _____ 12/14/05 _____

Authorized Project Representative's Signature

NOTE: *Please attach any additional information that you feel should be a part of your report or that may be required to meet the deliverable requirements for tasks completed during this reporting period.*