

NTRD Program Disclaimers

1. Disclaimer of Endorsement:

The posting herein of progress reports and final reports provided to TCEQ by its NTRD Grant Agreement recipients does not necessarily constitute or imply an endorsement, recommendation, or favoring by TCEQ or the State of Texas. The views and opinions expressed in said reports do not necessarily state or reflect those of TCEQ or the State of Texas, and shall not be used for advertising or product endorsement purposes.

2. Disclaimer of Liability:

The posting herein of progress reports and final reports provided to TCEQ by its NTRD Grant Agreement recipients does not constitute by TCEQ or the State of Texas the making of any warranty, express or implied, including the warranties of merchantability and fitness for a particular purpose, and such entities do not assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represent that its use would not infringe privately owned rights.

**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: _____January 15, 2006_____

Report for the **Monthly** period:

Starting Date ___December 15, 2005___ Ending Date ___January 14, 2006___

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

- **DPF Installed in the Microwave Oven** - A 50 mm diameter x 150 mm long SiC Diesel Particulate Filter (DPF) has been installed in the test unit with a 1000-watt microwave oven, which was modified for accommodating the DPF holder as shown in Figures 1 and 2 in the last page of this report. The unit is currently under leak tests and will be used for soot destruction once the tests are satisfactorily completed.
- **Additional Temperature Profile Measured within the SiC DPF** – Additional temperature profiles in the DPF have been measured using 3 thermocouples in the center of the filter vertically and radially. The results indicate that the maximum temperature of 500 to 600 °C can be reached in about 15 minutes and the penetration of microwave into the SiC filter appears to be good.
- **Dynamic Pressure Drop Data Established** – Dynamic pressure drop measurements have been conducted with varying engine loads. The data will serve as an operating parameter for the onset of microwave soot destruction.
- **Test Facility for NO_x Reduction Catalysts Prepared** – A test facility for testing the NO_x reduction catalysts have been set up in the microwave unit. The catalysts to be tested will include a platinum/palladium on carbon extrudate, a stack of SiC discs, and Pt/Pd gauzes.

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. Test soot destruction and regeneration of DPF with microwave;
2. Perform off-line tests on the platinum/palladium NO_x reduction catalyst; and
3. Prepare SiC/Pt-Pd gauzes for NO_x reduction tests.

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

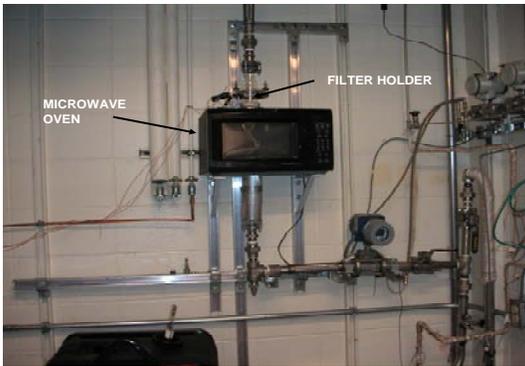


Figure 1. Microwave oven with DPF installed inside.



Figure 2. Quartz DPF holder and SiC DPF filter.



Date: 1/15/06

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.