

**ANNUAL PROJECT REPORT
AS OF DECEMBER 1991**

1. PROJECT SPONSOR:

Owens-Corning Fiberglas
Technical Center
2790 Columbus Rd, Rte. 16
Granville, OH 43023-1200

2. PROJECT MANAGER:

Patrick F. Aubourg

TELEPHONE: (614) 587-7604

3. OCDO GRANT NO#: CDO/R-89-36

4. PROJECT: Final Report

5. PROJECT TITLE: Catalytic Fabric Filter for Emission Control

6. PROJECT TERM: FROM July 1, 1990 **TO** September 30, 1991

7. PROJECT	<u>NAME</u>	<u>COST-SHARE</u>
CO-SPONSORS:	OCDO	\$150,000
	Owens-Corning Fiberglas	<u>85,400</u>
TOTAL PROJECT COST:		\$235,400

I. ABSTRACT

8. OBJECTIVES

The objectives of the proposed work were to develop (1) a high temperature fabric filter that would provide high particulate removal efficiency, acceptably long bag life under the conditions used in the SNRB process or other hot baghouse processes and an economic savings of 50% over the use of ceramic fabric filters; and (2) a catalytic fabric filter for NO_x and particulate control that would provide high removal efficiency of NO_x and particulate matter, acceptably long bag and catalyst life and an economic savings over the present SCR and low or high temperature filtration system.

9. WORK DONE AND CONCLUSIONS:

Laboratory work led to the discovery of a new formulation for the catalyst. This meant that the cost of the catalytic coating could be reduced by about 65%.

Two different trials were run during 1991--one to test the performance of the high temperature fabric, and one to determine the ability of the catalytic fabric to remove NO_x.

For the high temperature fabric:

1. No bag failure (rips or tears) were found.
2. SO₂ removal rates of up to 65% were achieved using calcium-based sorbents.
3. Particulate removal efficiencies of greater than 99.9% were realized.

For the catalytic fabric:

1. No bag failure (rips or tears) were found.
2. NO_x removal rates of greater than 80% were achieved.
3. SO₂ removal rates of up to 65% were achieved using sodium-based sorbents. Calcium-based sorbents are ineffective in this particular temperature range.
4. Particulate removal efficiencies of greater than 99.9% were realized.

10. PLANS FOR COMING YEAR:

This project has been completed.

II. HIGHLIGHTS/ACCOMPLISHMENTS

11.
 - A significant reduction in the cost of the catalytic coating was achieved.
 - Good durability particulate removal, and SO₂ removal were achieved for the high-temperature cloth.
 - Good durability, particulate removal, NO₂ and SO₂ removal rates were achieved for the catalyst-coated bags.