QUARTERLY RESEARCH REPORT

(Reporting Period: 10/01/96 - 12/31/96)

ON DOE/MC/31426--9

Characterization and Optimization of Sorbents Utilized

For

Emission Control During Coal Gasification

Program Identification Number : DE-FG21-94MC31426--9

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The major sorbent research activities in the reporting period 10/01/96 to12/31/96 at PVA&MU are summarized as follows:

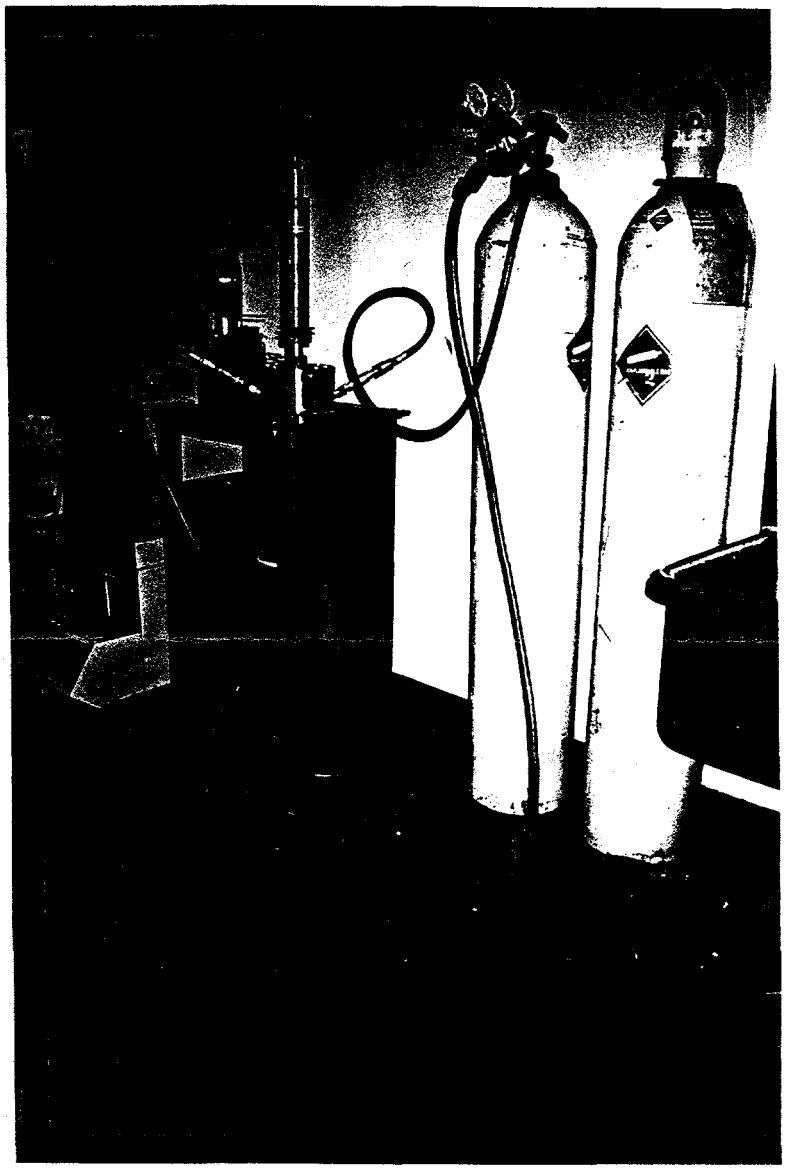
- A no-cost extension request was submitted to extend the complete schedule to the middle of 1997

- The techniques to interface PC with programmable instrumentation for automatic data acquisition were established. These techniques include interfacing instrumentation with the use of IEEE-488, and RS-485. The accomplishment provided a good foundation of building a more sophisticated PC controlled data acquisition system for a more complicated desulfurization test system using more instruments and performing more testing control.

- The main efforts were spent on interfacing the test instruments with the personal computer with the use of a virtual instrumentation program developed by National Instruments Company. A lot of work were performed by understanding the software, programming interfacing and adjusting the timing coordination between the PC and the instruments.

- A gas mixture pressure vessel has been assembled, photographs are attached. Perform preliminary study of using a gas chromatograph to analyze the gas to be tested in the sorbent test system. The photograph of the gas chromatograph is also attached.

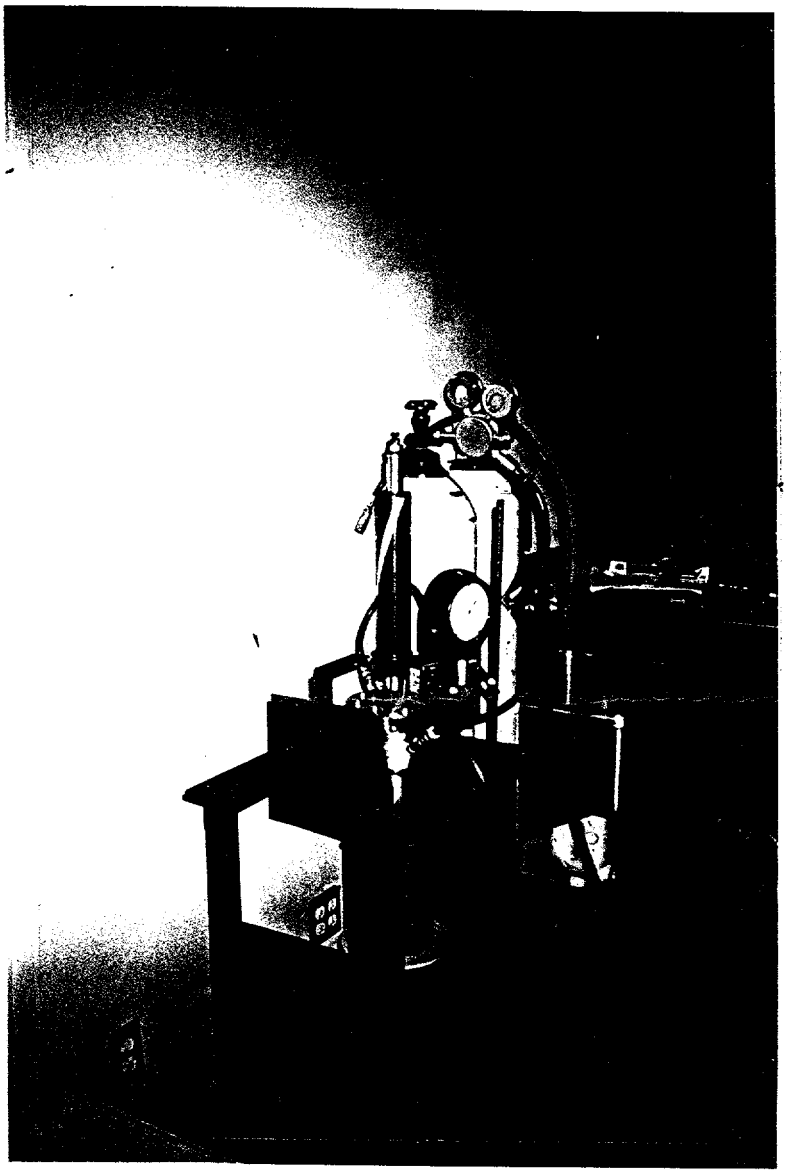
- The photographs show details of the Sorbent test setup



SORBENT TEST SETUP ASSEMBLY

SORBENT TEST VESSEL

GAS CHROMATOGRAPH



GAS INLET AND OUTLET PORTS FOR SORBENT TESTING