FINAL REPORT

NASA GRANT NAG3-1714

"OPTICAL PROPERTIES OF SELECTIVE EMITTER MATERIALS FOR THERMOPHOTOVOLTAIC APPLICATIONS"

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PERIOD:

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I. GOALS AND OBJECTIVES

To investigate the optical properties of new "selective emitter" materials for possible use in high-efficiency thermophotovoltaic power systems. These are systems which directly convert heat to radiation at a wavelength closely matched to the bandgap energy of the solar cell.

II. ACCOMPLISHMENTS vs GOALS AND OBJECTIVES

Candidate materials which have strong absorption lines fairly close to the bandgap of good solar-cell materials were chosen for study. Their emittance was measured as a function of wavelength to evaluate their promise as selective TPV emitters. Useful and informative results were obtained. Some of these results were presented at a January 1996 solar energy conference of the American Institute of Aeronautics and Astronautics.

III. COSTS

All work was accomplished within budget. There were no cost overruns.