

Abstract Submitted
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Production of Molecular Oxygen using a Capacitively-Coupled Radio-Frequency Discharge in a Carbon Dioxide Gas Mixture¹ GEORGE BROOKE, BERLEY RISTER, JAMES RAY, DEPARTMENT OF PHYSICS AND ASTRONOMY, VIRGINIA MILITARY INSTITUTE TEAM — We have studied the production of molecular oxygen using a radio-frequency capacitively-coupled discharge in a simulated Martian atmosphere (95% CO₂, ~5 torr). The concentration of molecular oxygen within the chamber was measured using continuous-wave cavity ring-down spectroscopy (CW-CRDS). Oxygen concentration measurements were made at discharge powers ranging from approximately 5 W to 10 W. The discharge temperature was monitored using the CO rotational emission spectrum..

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