

# Lunar Resources and NASA Achieve Historic Breakthrough in Lunar Oxygen and Metal Extraction from Regolith Simulant

*Houston company and NASA demonstrate full scale extraction of resources from simulated lunar soil*

HOUSTON, TX, UNITED STATES, April 29, 2025 /EINPresswire.com/ -- Lunar Resources (LUNAR), a Houston-based space industrial company pioneering lunar resource extraction technologies, has achieved a groundbreaking milestone in collaboration with NASA's Kennedy Space Center (KSC). In December, LUNAR and NASA successfully demonstrated the extraction of oxygen at a commercial scale from simulated lunar soil (regolith) at KSC's Swamp Works.



LUNAR's LR-1 MRE reactor operating in NASA's Kennedy Space Center Assist Chamber

The demonstration showcased LUNAR's LR-1 resource extraction reactor, an advanced system engineered to electrolytically extract oxygen and metals from lunar soil. Conducted in a simulated lunar vacuum environment within KSC's vacuum chamber, the test lasted over 36 hours, processing 25 kilograms (55 lbs) of simulated lunar soil while producing oxygen.

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*Dr. Alex Ignatiev, CTO of LUNAR*

“This marks the first-ever production of oxygen at full scale from lunar soil simulant in a vacuum environment,” said Dr. Alex Ignatiev, LUNAR's Chief Technology Officer. “This monumental achievement, 20 years in the making, is a major leap forward for the lunar community.”

The LR-1 system employs molten regolith electrolysis (MRE), a high-temperature electrolytic process that uses only electric current to separate oxygen and metals from

lunar soil. Alongside oxygen extraction, the demonstration produced valuable metals such as iron and silicon, further expanding the potential for lunar resource utilization.

The project was jointly funded by NASA's Space Technology Mission Directorate (STMD) Game Changing Development (GCD) program and LUNAR's internal research and development initiatives. Resource extraction from lunar soil is a critical component for achieving lunar sustainability under NASA's Artemis Program. The LR-1 demonstration is the first instance of full-scale extraction of both oxygen and metals from simulated lunar soil, paving the way for a dependable and cost-effective supply of raw materials on the Moon's surface.

#### About Lunar Resources

Based in Houston, Texas, Lunar Resources, Inc. is space industrial company developing off-earth industrial technologies that advance the utilization of the resources of space for commercial, scientific, and strategic applications.

For more information, please contact [info@lunarresources.space](mailto:info@lunarresources.space) or visit <http://www.lunarresources.space/>.

Elliot Carol

Lunar Resources, Inc.

[info@lunarresources.space](mailto:info@lunarresources.space)

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