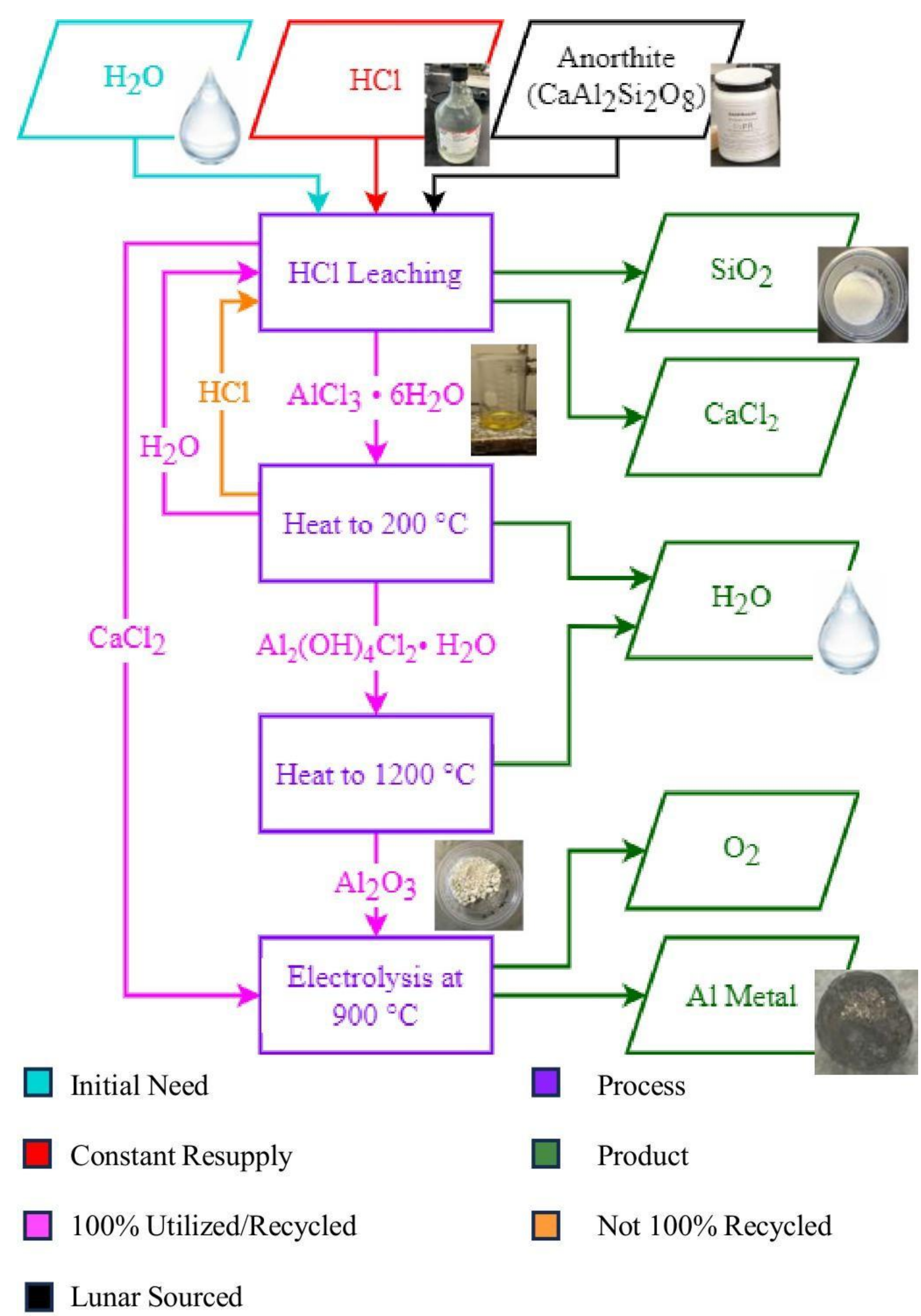
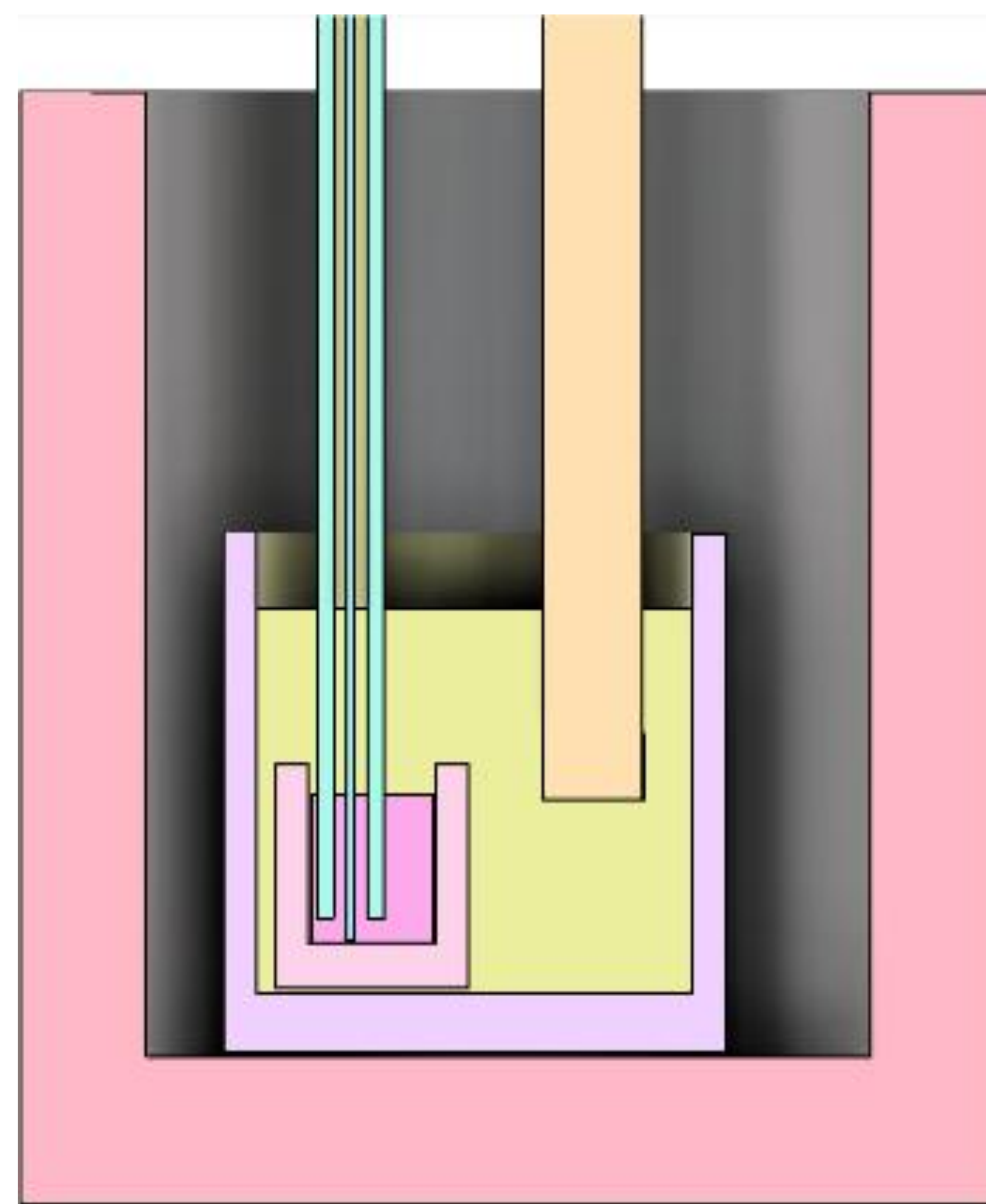


# TOWARD IN-SITU ALUMINUM PRODUCTION ON THE MOON: A PARAMETRIC STUDY OF MOLTEN SALT ELECTROLYSIS IN CALCIUM CHLORIDE (CaCl<sub>2</sub>)

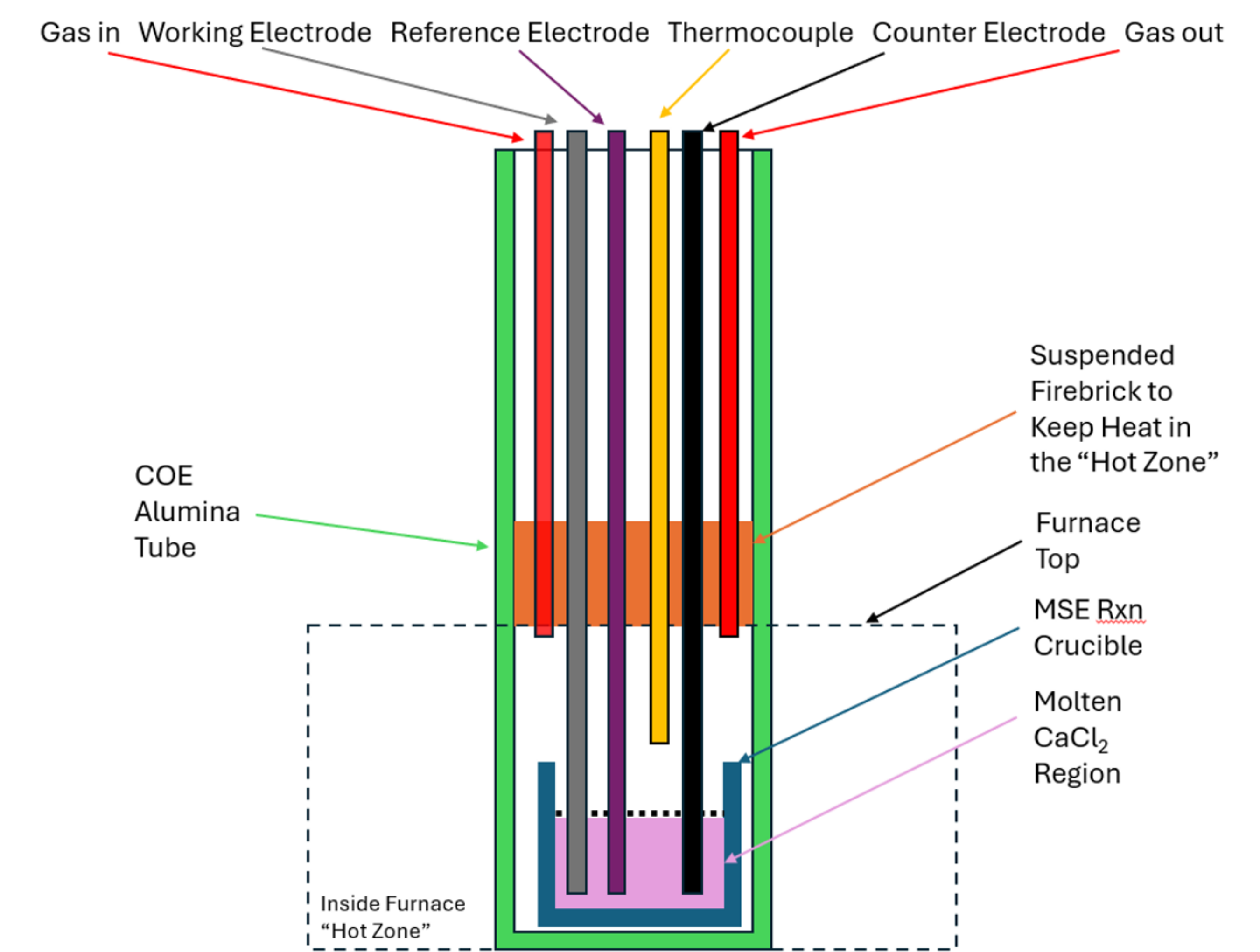
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LISAP-MSE Processing Method



Electrolytic Cell in Air



Electrolytic Cell Setup Evolution

## Experimental Evolution

Test	Potential	Duration (min)	Atmosphere	Result
1	Sweep	75	Air	Initial Metal Bead Formation
6	4.5 V	75	Air	Large Bead Formation
7	4.5 V	90	Air	Shorting Observed
14	4.5 V	450	Air	2.86 g Metallic Blob
15 Conducted (5/27/26)	4.5 V	180	Ar	Failure: Ongoing Revisions



## Planned and Ongoing Parameters for Parametric Study

Property	Cases	Expected Effect
Atmosphere	Argon	Reduced Oxidation
	Air	
Temperature	900 °C	Higher Ion Mobility
	1000 °C	
Cathode Material	Molybdenum	Stability Comparison
	Tungsten	
	Nickel	
Stirring	-	Increased Mass Transport



## Acknowledgments

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