



Lunar Surface Innovation

C O N S O R T I U M

LSIC ISRU Focus Group Monthly

<http://lsic.jhuapl.edu/>

<http://lsic-wiki.jhuapl.edu/> (“Confluence” sign-up required)

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Agenda

- 3:00 – General updates
- 3:10 –3:25 - Vapor Pyrolysis. Geoffrey Licciardello, Terraxis Space
- 3:25 –3:40 - Molten Regolith Electrolysis. Elliot Carol, Lunar Resources
- 3:40 –3:55 - Carbothermal Reduction. Brant White, Sierra Space
- 3:55 - Separate into Break-out Groups
- WaterIce Prospecting – Discuss path forward.
- O₂-Metal Extraction – talk with presenters who are available to stay.
- Value Chain Analysis
- Interoperability/Standards/Maintenance

Updates

Thematic Meeting joint with Excavation & Construction

- “From Regolith to Rebar – what solid by-products result from O2 extraction and how can they be used in lunar construction?”
- Date: February 23. Preliminary time: 1100 to 1730 EST. Virtual.
- Contact Karl Hibbitts (karl.Hibbitts@jhuapl.edu) if you have a relevant technology to showcase.

Facilitating Focus Group collaborations and Interactions

- Remember: “Who’s Who in ISRU” at <https://lsic-wiki.jhuapl.edu/display/ISRU/Who%27s+Who+in+ISRU>
- Consider arranging to meet up as meetings start to become in-person again.
 - AIAA Sci-Tech Forum. San Diego. Jan 3 – 7. POC: Naveen Vetcha. nvetcha@gmail.com
 - Others? Feel free to put in chat and in future we can make this a regular update.

Regolith to Rebar: ISRU – E&C Metal Workshop

The Lunar Science Innovation Consortium (LSIC) is hosting a virtual workshop on February 23 from ~ 11am to 530pm EST.

Our over-arching goal is to develop a common and realistic mutual understanding of what is possible for metal ISRU in the near-term (next 5-10 years)

Bring together lunar (ISRU) developers to represent the supply side and (E&C) participants to represent the demand side

Link the in-situ production, the processing and the use/consumption of metals and metal-like by-products (that may result from O₂ production technologies).

Lay the foundation for the development of an eco-system in this nascent field of lunar ISRU metals and to strengthen public-private partnerships.

Some issues to be addressed include:

- Discuss infrastructural needs for the use of metals. What kinds, how much, and in what shape and form?
- Discuss the 'low hanging fruit' for metal extraction. The products, their usefulness, and need for modest post-processing.
- Discuss feasibility of metal-specific manufacturing processes on lunar surface.
- Discuss economic feasibility of metallic yields and any associated processing, including areas ripe for improvement.
- Develop concepts for how to integrate the metal supply side with the construction side, identifying possible roles for NASA.
- Identify gaps and challenges in metal production and construction on lunar surface.

Topical Discussion

Vapor Pyrolysis

Geo Licciardello

Chief Operating Officer, Terraxis Space

Topical Discussion

Molten Regolith Electrolysis (MRE)

Elliot Carol

CEO, Lunar Resources

Topical Discussion

Carbothermal Reduction (CT)

Brant White

Sierra Space

Wrap-Up and Transition to Breakout Groups

WaterIce Prospecting. Moderator: Karl Hibbitts

O₂ tech. Moderator: Michael Nord

Value Chain. Moderator: Kirby Runyon

Laboratory Facilities. Moderator: Jodi Berdis



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