

# **9th Symposium on Space Resource Utilization 2016**

Held at the AIAA SciTech Forum 2016

San Diego, California, USA  
4-8 January 2016

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# AIAA SciTech

## 8th Symposium on Space Resource Utilization

Meeting Location: San Diego, California, USA

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Extraterrestrial Water: Prospecting and Acquisition

Monday, 4 January 2016

0900 hrs

- Accessing, Drill and Operating at the Lunar South Pole: Status of European Plans and Activities (AIAA 2016-0224)...1  
Richard Fisackerly, James Carpenter, Berengere Houdou, Gianfranco Visentin, Francesco Rizzi, Matteo Savoia, Piergiovanni Magnani, Simeon Barber

1000 hrs

- Laboratory Apparatus for Evaluating Volatiles Production from Meteorites and Simulants: Design and Testing (AIAA 2016-0225)...9  
Leslie Gertsch, Angel Abbud-Madrid, Christopher Dreyer, Jeff Heniff, Diane L. Linne, James Mantovani, Joel Sercel, Egboche Unobe

1030 hrs

- Extraction and Capture of Water from Martian Regolith Experimental Proof-of-Concept (AIAA 2016-0226)...18  
Diane L. Linne, Julie E. Kleinhenz

1100 hrs

- Mechanical Properties of Icy Mars Regolith Simulant: Assessment of a Potential ISRU Feedstock (AIAA 2016-0227)...26  
Robert L. Ash, Josiah Emery, Brian Crane, Jonathan Ricci

1130 hrs

- Near-Infrared monitoring of volatiles in frozen lunar simulants while drilling (AIAA 2016-0228)...53  
Ted L. Roush, Anthony Colaprete, Richard Elphic, Joshua Forgione, Bruce White, Robert McMurray, Amanda Cook, Richard Bielawski, Erin Fritzler, Sarah J. Thompson, Julie E. Kleinhenz, Joshua Benton, Gale Paulson, Kris Zacny, James Smith

ISRU technologies and trades

Tuesday, 5 January 2016

0900 hrs

- Solar System Exploration Augmented by In-Situ Resource Utilization: Mercury and Saturn Propulsion Investigations (AIAA 2016-0717)....62  
Bryan A. Palaszewski

0930 hrs

- Sampling of Regolith from Asteroids Utilizing Magnetic Force (AIAA 2016-0718)....84  
Masato Adachi, Ryo Obata, Akira Shigeta, Hiroyuki Kawamoto

1000 hrs

- Dynamic Elasto-Plastic Impact Force in a Special Planetary Drilling Mechanism (AIAA 2016-0719)....94  
Ramesh B. Malla, Luis J. Vila

1030 hrs

- Aquaponics: An Option for In-situ Production of Mission Consumables (AIAA 2016-0720)....101  
Kelsey T. Kalbacher de Marquez, Eloy Normando Marquez Gonzalez

1100 hrs

- Liquefaction and Storage of In-Situ O<sub>2</sub> on the surface of Mars (AIAA 2016-0721)....108  
Daniel M. Hauser, Wesley L. Johnson