NASA Aerospace Battery Workshop

January 20-22
Teague Auditorium (Building 2)
NASA-Johnson Space Center
Houston, TX

AGENDA

Tuesday, January 20

Attendees can pick up their official badges from the Badging office in building 110, next to the entrance to Johnson Space Center, the morning of Tuesday, Jan. 20. The Badging office will be closed Monday, Jan. 19 for Martin Luther King Jr. Day, a federal holiday.

7:45 – 8:15 Food and refreshments in the lobby

Time	Presentation
8:15	Introductory and Logistical Remarks *Eric Darcy,* NASA-JSC
8:20	Welcome *Julie Kramer White,* NASA-JSC
8:30	High Energy Density Primary Li-O_2 Batteries *Javier Alvaré,* Wasatch Ionics LLC and *Dean Wheeler* Brigham Young University
9:00	Dry-Processed Zero-Liquid Solid-State Batteries: Scalability and Opportunities for Space-Qualification *Raimund Koerver,* Factorial Inc.
9:30	From Niche to Mainstream – Expanding the Performance of Silicon Anodes on All Performance Metrics *Lonel Stefan,* Amprius
10:00 – 10:15	**Break**
10:15	Innovation in 21700 Cylindrical Cell Designed for Mass Production - Achieving Highest Performance for Aerospace Applications *Thomas Yu* and *Stefan Permien,* UniverCell
10:45	Development of Advanced High-Energy, High-power Li-ion Batteries with Next Generation Zero-Voltage Technology *Linhua (Steven) Hu* and *Jiang Fan,* American Lithium Energy

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Time	Presentation
11:15	High Sensitivity Cell Screening Technology for Detection of Anomalous Self-Discharge and Cell Quality Evaluation *Christopher McCoy,* CAMX Power
11:45 – 1:15	**Lunch**
1:15	Accelerating Battery Innovation and Validation through 3D X-ray Inspection *Kevin Cedrone,* Lumafield
1:45	Ultrasound-Enhanced Cell Selection and Validation for Long-Term Aerospace Lithium-Ion Batteries *JR Klein, Srirama Hariharan, Fredrik Westerberg,* and *Jay Neutzler,* Honeywell
2:15	Battery Quality Control via Glimpse's High-Throughput CT Scanning Capabilities *Easton Rasgone, Eric Moch,* and *Peter Attia,* Glimpse
2:45 – 3:00	**Break**
3:00	Characterizing and Scaling Thermal Runaway *Yesaswi Chilamkurti*, *Nathan Goldsberry, Steven Foland,* and *Nathan Weigman*, Beta Technologies
3:30	Electrolyte Motion in Cylindrical Cells: The Effects of Gravity, Material Selection, and Cell Geometry *Toby Bond, Sergei Gasilov,* and *Reid Dressler* (Canadian Light Source), *Remi Petibon* and *Sunny Hy* (Tesla Motors), and *Jeff Dahn* (Dalhousie University)
4:00	Repeatability of Gas Production from Closed Vessel Battery Abuse Tests *Andre Swarts*, SWRI
4:30	Why and How to Know Heat Generation during Cycling of Batteries *Surendra Singh,* Belmont Scientific, Inc.

Space Center Houston – NASA educational event

Space Center Houston will close to the public at 5 p.m. and be open to workshop attendees from 6-10 p.m. We encourage to you come watch the educational film "The Moonwalkers: A Journey with Tom Hanks." The gift shop will be open during this time also.

AGENDA

Wednesday, January 21

7:30 – 8:00 Food and refreshments in the lobby

Time	Presentation
8:30	Starlink Batteries: Reliability Lessons from 10,000 LEO Satellites *Ray Barsa* and *Denis Trofimov,* SpaceX
9:00	VL10ES cell and batteries qualification and evolutions *Yannick Borthomieu, Vanessa Armel, Helene Tricot, Chengsong Ma* (SAFT), and *Evelyne Simon* and *Aurore Carre* (ESA)
9:30	Scalable battery pack designed for Lunar terrain vehicles *Franck Baldet* and *Michael Johanni,* Venturi
10:00 – 10:15	**Break**
10:15	Electric-Thermal Modeling of Li-Ion Battery Packs Components and Interfaces as Basis for Passive Propagation Resistance *R.E. White* and *Paul Coman,* University of South Carolina
10:45	Low Temperature Performance of Space Qualified COTS Li-ion Cells *Gerard Herbert, Jesse Branken,* and J*oshua Fedders,* ABSL Space products / EnerSys
11:15	Physics-Informed ROM Development for ISS EMU LLB-2 Condition-Based Monitoring *Michael Khasin* (NASA-ARC), *Mohit Mehta* (NASA-ARC), *Douglas J. Zupan* (NASA-JSC), *Jabari K. Capers* (NASA-JSC), *Martin D. Martinez* (NASA-JSC)
11:45 – 1:30	**Lunch**

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AGENDA

Wednesday, January 21

Time	Presentation
1:30	A Pragmatic approach to robust mutliphysics-based cell venting detection *Brian Engle,* Amphenol
2:00	Advancing -60 °C Lithium-Ion Battery Technology for Lunar and Deep Space Missions: KULR ONE Space (K1S) Pathfinder with TSC SEARF *AJ Sauter,* KULR Technology
2:30	Oscillating Heat Pipe Thermal Management for Battery Packages *Scott Hayden, Ben Alexander* and *Daniel Pounds,* Thermavant
3:00 – 3:15	**Break**
3:15	Cell safety through destructive testing: Rating 18650 cell safety after testing to failure through electrical, mechanical and thermal abuse *Brian Morin,* Soteria
3:45	Enhancing Battery Safety and Performance through Optimized Current Collector – Electrode Interfaces *Lucas Marks, Vincent Giraudineau,* and *Pierre Guichard,* Armor Battery Films
4:15	Isolating Internal Shorts with Metallized Polymer Current Collectors *Eric Darcy,* NASA-JSC
4:45	46900 Cell Design with Metalized Plastic Current Collectors *Radion Gedikov,* EAS Batteries

AGENDA

Thursday, January 22

7:30 – 8:00 Food and refreshments in the lobby

Time	Presentation
8:30	Reducing custom and standard battery lead time *Richard Coffin,* Eagle Picher Industries
9:00	Addressing the safety of next-generation batteries *Ryan Spray,* Exponent
9:30	Nanoscale Sulfide Coatings for High Performance Nickel-Rich Metal Oxide Cathodes *Xiangbo (Henry) Meng,* University of Arkansas
10:00	Batteries for More-Electric-Aircraft and Extreme Environments *Roger Brewer,* Lockheed Martin
10:30	Passive Prevention of Thermal Runaway in Li-ion Batteries *Vijay V. Devarakonda* (Analytical Scientific Products LLC) and *Joseph D. Teague, Carson Mclaughlin,* and *Carter Wachholtz* (US Air Force, AFRL/RDLC)
11:00	Highest Energy-Performance 18650/21700 Silicon-Graphite Cells *Jignesh Parikh* and *Chris Kompella,* Rincell
11:30	100% silicon with a completely domestic supply chain & leveraging low surface area for improved safety and calendar life *Robert Anstey,* Graphenix Development Inc. (GDI)
12:00	**Closing statements**

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Thursday, January 22

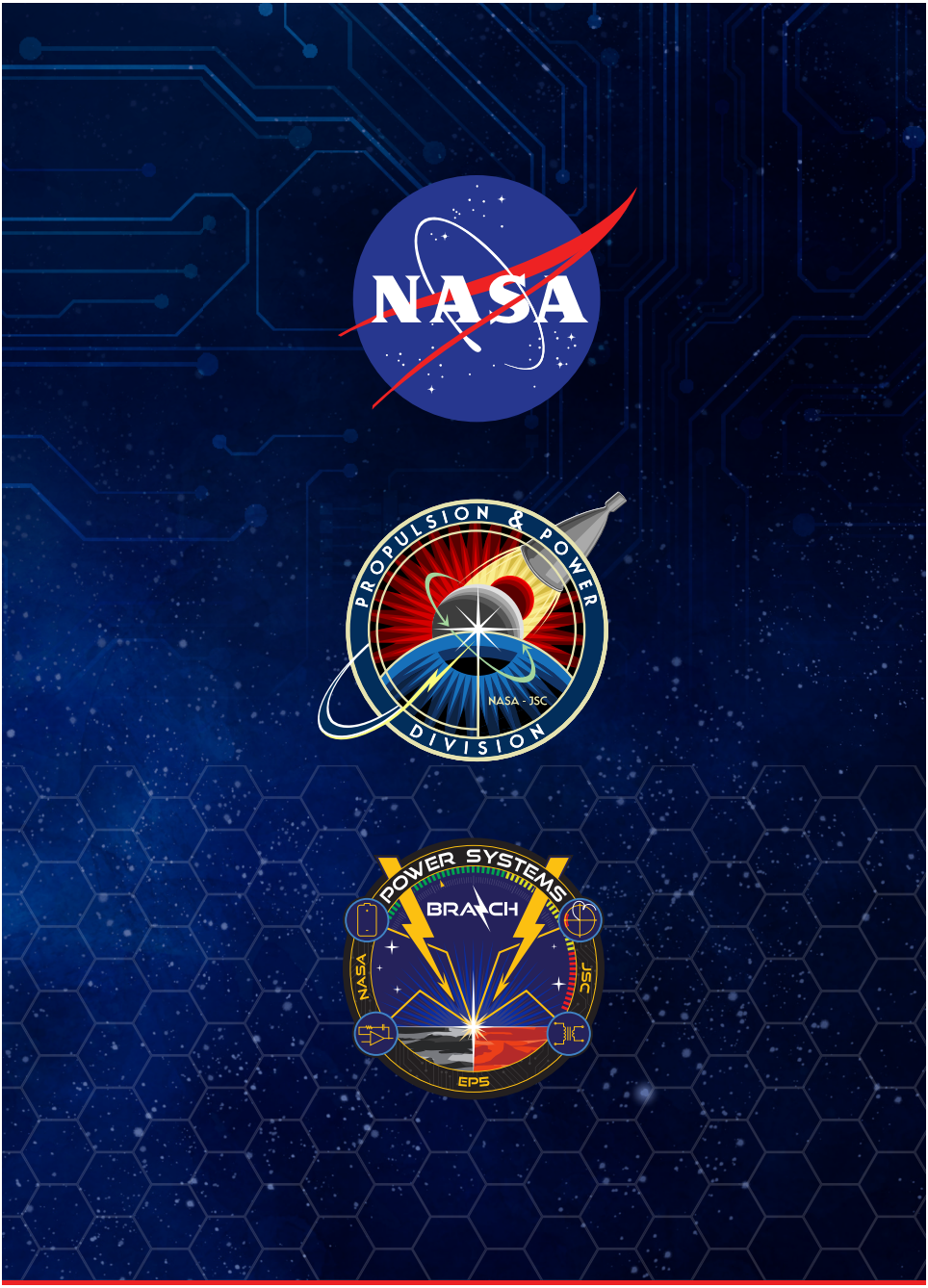
12:05 – 1:30 Lunch

Tours of NASA facilities:

- Energy Systems Test Area
- Building 9 – Astronaut Training Facility
- Building 30 – Artemis Mission Control

Tour logistics will be provided at the Workshop.

Thank You!



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Thank You!