



National Aeronautics and Space Administration



Space Photovoltaic Research and Technology Conference

29th Space Photovoltaic Research and Technology Conference

August 18 - 20, 2026

at

**NASA Glenn Research Center
Cleveland, OH**

Tuesday, August 18, 2026

8:00 – 8:45 **Breakfast & Registration**

8:45 Conference Introduction
 Meghan Bush | SPRAT General Chair

8:50 Welcome Remarks
 Larry Sivic | Associate Director of NASA Glenn Research Center

9:00 Good Morning Starshine, The Earth says ‘Hello’: A Decade-by-Decade Look at NASA’s
 Accomplishments in Photovoltaic Advancement
 Timothy J. Peshek | Chief, Photovoltaic and Power Architecture Branch

9:20 NASA Agency-wide Perspectives for Space PV
 Jeremiah McNatt | NASA Space Technology Mission Directorate

9:40 – 10:00 **Group Photo**

10:00 – 10:15 **Coffee Break**

Session I | Flight Design and Experience

Session Chair: Spencer Furin

10:15 The Extensible Low Profile Solar Array (ELSA): A Modular, Scalable Solution for Small Sat
 Power Systems
 Shen Meinhold | Redwire Space

10:35 Flexible Solar Modules and Blankets for Vertical Solar Array Technology
 Stanislau Herasimenka | Solestial

10:55 Development Progress of Lightweight Solar Array Wings for RAMSES
 Yoshiyuki Murakami | JAXA

11:15 pLEDss Testing for Large Solar Arrays
 Casey Hare | Angstrom Designs

11:35 On-Orbit AM0 IV Measurement of Space Photovoltaics via the Orbital Electronics Lab
 Scott Ireton | Angstrom Designs

11:55 – 12:55 **Lunch**

Session II | III-V Development and Manufacturing

Session Chair: Brandon Klefman

- 12:55 Optimizing Quantum Well Density for Enhanced Performance and Environmental Stability of Quantum Well Solar Cells
Seth Hubbard | Rochester Institute of Technology
- 1:15 Technology and Manufacturing Innovations to Meet Space Solar Power Demands
Daniel Law | Spectrolab
- 1:35 Experimental Characterization of Thermoradiative Performance of InAsSb Type-II Superlattice (T2SL) Diodes for Satellite Power Scavenging
Savannah Luney | Georgia Institute of Technology/West Coast Solutions
- 1:55 Solving the Right Problem to Enable Both Civil/Commercial and Military Space Power Production Issues
Brad Reed | WR Scientific
- 2:15 Engineered thin foil germanium substrates: driving growth opportunities in space PV applications
Robin Vanuytven | Umicore
- 2:35 – 2:55 **Break**

Session III | Perovskites – Stability under Environmental Stressors

Session Chair: Timothy Peshek

- 2:55 Towards Space-Grade Perovskite Solar Cells
Jae Sung Yun | University of Surrey
- 3:15 Space Stress Testing of Metal Halide Perovskite Tandem Solar cells
Ian Sellers | University at Buffalo
- 3:35 Results of First Long Duration Space Flight of Hybrid Perovskite Thin Film Solar Cells
Lyndsey McMillon-Brown | NASA Glenn Research Center
- 3:55 Charge Extraction Contact Layers for Robust and Stable Perovskite Solar Cells in Space Applications
Joseph Luther | National Laboratory of the Rockies
- 4:15 Bulk and Interface Engineering of Air-Processed FAPbI₃ Perovskite Solar Cells Toward Reliable Space Photovoltaics
Taehwan Kim | Ewha Womens University
- 4:35 – 8:00 **Picnic (NASA GRC Picnic Grounds)**

Wednesday, August 19, 2026

8:00 – 8:45 **Breakfast**

8:45 – 9:00 **Presentation of the Irving Weinberg Award**

Session IV | Coverglass and Optical Coatings

Session Chair: Meghan Bush

9:00 3M Cover Films for Satellite Solar Cell Arrays

Alex Eldredge | 3M

9:20 Martin Materials Solutions Technology Developments

John Martin | Martin Materials Solutions

9:40 Protective Down-Converting Coatings for Solar Photovoltaic Cells in Space Environments

Sergey Sarkisov | SSS Optical

10:00 – 10:20 **Break**

Session V | Perovskites – Radiation Impacts

Session Chair: Lyndsey McMillon-Brown

10:20 Lattice-Enabled Defect Annealing in Perovskite Space Photovoltaics: A Working Model for Radiation Recovery and Failure

Ahmad Kirmani | Rochester Institute of Technology

10:40 Depth-Dependent Proton Irradiation Assessment of All-Perovskite Tandem Solar Cells

Zhaoning Song | University of Toledo

11:00 Recovery Dynamics and Operational Stability of Proton-Irradiated Perovskite Solar Cells

Minwoo Lee | University of New South Wales

11:20 Operando Characterization of Perovskite Solar Cells under Combined Proton Radiation, Electrical Bias, and Cryogenic Conditions

Bekele Hailegnaw | Rochester Institute of Technology

11:40 Commercializing Swift Solar's Silicon Heterojunction and Perovskite-Silicon Tandem Solar Cells for Space

Giles Eperon | Swift Solar

12:00 – 1:00 **Lunch**

Session VI | Non-PVK Thin Films

Session Chair: Meghan Bush

- 1:00 CdSeTe Thin Film Space Solar Cells: Resilient, Manufacturable, and Disruptive
Randy Ellingson | University of Toledo
- 1:20 Performance Recovery of Proton-Irradiated CdSeTe Photovoltaic Devices and End-of-Life Performance Simulations
Scott Lambright | University of Toledo
- 1:40 Development of CIGS solar cells on ultra-thin glass substrates
Hiroshi Tomita | Idemitsu Kosan Co., Ltd.

Session VII | Silicon Photovoltaics

Session Chair: Timothy J. Peshek

- 2:00 Bridging Radiation Testing and In-Space Degradation: 10 Cycles of Irradiation and Annealing of Ultrathin HJT Solar Cells
Stanislau Herasimenka | Solestial
- 2:20 Rapidly Expanding Space Power Needs and High Volume Production Ramp, Flight Heritage, Radiation Recovery Results for DragonSCALES
Murat Okandan | mPower
- 2:40 Low Earth orbit radiation study of ultra-thin silicon solar cells
Vincent Whiteside | University at Buffalo
- 3:00 – 3:10 **Break**
- 3:10 – 4:40 **Poster Session**

Poster Session Presentations:

Imaging Ionic Motion in Perovskite Solar Cells

Joseph L. Becker | University of Michigan Ann Arbor

Advanced electro-optic characterization of thin film solar cells under thermal stress

Samuel S. Erickson | University of Toledo

Multifunctional Photovoltaic Panels for CubeSats: Integrating Power Generation, Distribution, and Sensor Routing Through Spaced-Cell Array

Syed Mustafa Hasan | Collin College

*Development of MELCO's Solar Array with new solar cell technologies **

Yu Kamikawa | Mitsubishi Electric Co.

Proximity rapid thermal diffusion for simultaneous phosphorous and boron doping of silicon solar cells
Aizhan Kusainova | Kazakh-British Technical University

Developing a Combined Stressor Operando I-V Testing Platform for Emerging Space Photovoltaics
Verona Miller | Rochester Institute of Technology

Proton-Induced Degradation and Recovery of SHJ Solar Cells for Space Applications
Nicholas Moser-Mancewcz | Arizona State University

High-Efficiency Cd(Se,Te) Solar Cells on Space-Qualified Cover Glass
Aesha Patel | University of Toledo

Thermal Performance of Silicon Heterojunction and FAPbI₃ Perovskite Solar Cells for Space Applications
Tommy H. Richards | University of Surrey

Proton Irradiation Increases Temperature-Dependent Emissive Heterogeneity in All-Inorganic CsPbI₂Br Perovskite Solar Cells
Veran Stanek | Rochester Institute of Technology

Durable Perovskite Solar Cells for Space Applications: Evaluation on Coverglass Under the Orbital Environment
Divya Thakur | University of Toledo

Deep Level Transient Spectroscopy (DLTS) for Determining Electronically Active Defects in Photovoltaic Devices Exposed to Proton Radiation
Mikolaj Wilkosz | Rochester Institute of Technology

* Vendor poster

6:00 – 8:30 **Banquet (Offsite)**

Thursday, August 20, 2026

8:00 – 8:45 **Breakfast & Registration**

Session VIII | Space Environments Testing

Session Chair: Timothy J. Peshek

- 8:45 Spacecraft Charging Testing and Degradation Study of Novel Photovoltaics
Meghan Bush | NASA Glenn Research Center
- 9:05 Combined Effects Test Chamber for Space Solar Cells and Coupons
Casey Hare | Angstrom Designs
- 9:25 Operando Investigation of Radiation Hardness and Defect Dynamics in Metal-halide Perovskite Solar Cells
Bibhudutta Rout | University of North Texas
- 9:45 Dust Mitigation Test Facility for Solar Arrays
Joel Schwartz | NASA Jet Propulsion Laboratory
- 10:05 – 10:25 **Break**

Session IX | Laser Power Beaming

Session Chair: Jeremiah Sims

- 10:25 Multi-Technique Analysis of 2J In_{0.20}Ga_{0.80}As Laser Power Converters for 1064nm Lunar Power Beaming
Katelynn Fleming | Rochester Institute of Technology
- 10:45 Space-Based Optical Wireless Power Transfer: Progress Towards a Commercial End-to-End Architecture
Kailas Mehta | Volta Space
- 11:05 Design of a Surface to Surface Laser Power Transmission for a Lunar Base
Geoffrey Landis | NASA Glenn Research Center
- 11:25 Engineering LCLs for Dual Use Solar / Laser Power Converter for Lunar Applications
Anastasia Soeriyadi | MicroLink Devices

Session X | Advanced Characterization

Session Chair: Jeremiah Sims

- 11:45 Physics-Based Contrast Enhancement for Defect Characterization in Multijunction III-V Solar Cells Using Selective Electroluminescence and Photoluminescence Imaging
Jared Freidl | BrightSpot Automation
- 12:05 Non-contact Electroluminescence (nc-EL) Imaging of Modules and Arrays
Greg Horner | Tau Science
- 12:25 **Closing Statements, Conference Ends**