

International Workshop on Space Combustion Research

-Toward Sustainable Platforms for Lunar Exploration and Broader Applications-

Date and Time: September 11, 2026 (Friday) (JST)

The program below is subject to change.

[MC] *Megumi Akashi, Researcher, Utilization Planning Group, Space Environment Utilization Center, JAXA*

Time	Program
10:00–10:15	<u>Opening</u> Opening Remarks <i>Masaki Shirakawa, Director, Space Environment Utilization Center, JAXA</i> Workshop Objectives and Program Overview <i>Masao Kikuchi, R&D Manager, Space Environment Utilization Center, JAXA</i>
10:15–11:20	<u>Session 1: Achievements and Future Prospects of Combustion Research in Microgravity Environments</u> • <u>Session Introduction</u> Fire Safety Research • <u>Keynote Address①</u> <i>Prof. Carlos Fernandez-Pello, Department of Mechanical Engineering, University of California, Berkeley*</i> • <u>Keynote Address②</u> <i>Prof. Osamu Fujita, Vice Executive Director, Institute for the Advancement of Higher Education, Hokkaido University</i> Liquid and Gaseous Combustion Research • <u>Keynote Address③</u> <i>Dr. Daniel Dietrich, Project Scientist, National Aeronautics and Space Administration (NASA) Glenn Research Center</i> • <u>Keynote Address④</u> <i>Prof. Kaoru Maruta, Vice Director for Collaborative Research, Institute of Fluid Science, Tohoku University</i> Panel Discussion • <u>Insights Gained from Microgravity Combustion Research and Future Prospects</u> Moderator: <i>Megumi Akashi, JAXA</i> Panelists: • <i>Prof. Carlos Fernandez-Pello, University of California*</i> • <i>Prof. Osamu Fujita, Hokkaido University</i>

	• <i>Dr. Daniel Dietrich, NASA*</i> • <i>Prof. Kaoru Maruta, Tohoku University</i>
11:20–11:30	<u>Break</u>
11:30–12:30	<u>Session 2: Combustion Phenomena under Lunar Gravity</u> • <u>Session Introduction</u> • <u>Keynote Address⑤</u> <u>Fire Safety Challenges and Opportunities for Future Human Lunar Exploration</u> <i>Dr. David Urban, Chief, Low-Gravity Exploration Technology Branch, NASA Glenn Research Center*</i> • <u>Keynote Address⑥</u> <u>Recent Activities and Key Updates from NASA's Biological and Physical Sciences Division (BPS)</u> <i>Dr. Tracie J. Prater, Program Scientist for Physical Sciences, Biological and Physical Sciences Division, NASA Headquarters*</i> Panel Discussion • <u>Combustion under Lunar Gravity: R&D Challenges and Directions for Utilizing LEO toward Sustainable Lunar Activities</u> Moderator: <i>Megumi Akashi, JAXA</i> Panelists: • <i>Dr. David Urban, NASA*</i> • <i>Associate Prof. Ya-Ting Liao, Department of Mechanical and Aerospace Engineering, Case School of Engineering, Case Western Reserve University*</i> • <i>Prof. Shuhei Takahashi, Department of Mechanical Engineering, Gifu University</i> • <i>Haruka Ueno, Engineer, Pressurized Rover Engineering Center, JAXA</i>
12:30–13:20	<u>Lunch Break</u>
13:20–14:05	<u>Session 3 (Japanese-Language Session): Perspectives on Combustion Technology Innovation Driven by Space Experiments and AI</u> • <u>Session Introduction</u> • <u>Keynote Address⑦</u> <u>Toward High-Fidelity Combustion Model Development through Space-Based Experiments and Artificial Intelligence</u> <i>Prof. Mitsuaki Tanabe, College of Science and Technology, Nihon University</i> Panel Discussion • <u>What is the Value of Space-Based Experiments in Combustion Research in the Age of AI?</u> Moderator: <i>Prof. Masato Mikami, Graduate School of Sciences and Technology for Innovation, Yamaguchi University</i> Panelists:

	• <i>Prof. Mitsuaki Tanabe, Nihon University</i> • <i>Prof. Hiroaki Watanabe, Interdisciplinary Graduate School of Engineering Sciences, Kyushu University</i> • <i>Seiji Tsutsumi, R&D Manager, Research Unit III, Research and Development Directorate, JAXA</i> • <u>Summary</u> Note: Session 3 will be conducted in Japanese, while the summary will be presented in English.
14:05–15:00	<u>Session 4: Toward Breakthroughs in Combustion Research: The Role of LEO Research Infrastructure and International Collaboration</u> • <u>Session Introduction</u> • <u>JAXA's Vision for LEO Utilization through SCEM as a Combustion Research Platform</u> <i>Masao Kikuchi, JAXA</i> • <u>European Combustion Research Infrastructure: Integrating Short-Duration Experimental Platforms with LEO Research</u> <i>Dr. Sébastien Vincent-Bonnieu, Team Lead for Biology and Physical Sciences, Human and Robotic Exploration Directorate, European Space Agency (ESA)*</i> Panel Discussion • <u>The Role of LEO Research Infrastructure and International Collaboration in Advancing Combustion Science</u> Moderator: <i>Prof. Shuhei Takahashi, Gifu University</i> Panelists: • <i>Prof. Guillaume Legros, Inst. d'Alembert, Sorbonne Univ. / CNES Head of the Physical Sciences in Microgravity</i> • <i>Dr. Karin Kiewisch, Head Physical and Materials Sciences Program, Research & Exploration Department, German Space Agency (DLR)</i> • <i>Prof. Nozomu Hashimoto, Division of Mechanical and Aerospace Engineering, Faculty of Engineering, Hokkaido University</i> • <i>Masao Kikuchi, JAXA</i> • <u>Summary</u>
15:00–15:20	<u>Break</u>
15:20–15:45	<u>Closing</u> Summary of Key Points and Future Directions

* Online Participants

Host:

Japan Aerospace Exploration Agency (JAXA)
Space Environment Utilization Center