

## OS4: Flow Dynamics and Combustion Technology of Hybrid Rocket Propulsion, 15th Edition

November 7, 2023

EX-3-B

- OS4-1      **Advancing Internal Ballistics of Hybrid Rockets: Challenges, Parameter Estimation, and Future Perspectives (*Invited*)**  
9:00-9:45      Toru Shimada (Japan Aerospace Exploration Agency, Japan)
- OS4-2      **Combustion of Metallized Fuels for Hybrid Rocket Applications (*Invited*)**  
9:45-10:30      James C. Thomas (Texas A&M University, USA)
- OS4-3      **Experimental Study on Magnesium Wire Combustion in Water-Vapor Flow**  
10:40-11:10      Mariko Akiyama (Japan Aerospace Exploration Agency, Japan), Hiroyuki Koizumi, Kimiya Komurasaki (The University of Tokyo, Japan)
- OS4-4      **Study on the Effect of MG-AL Powder on Combustion Completeness of Boron Powder in Solid Fuels for Hybrid Rockets**  
11:10-11:40      Hironori Maeda, Kenichi Takahashi (Nihon University, Japan)
- OS4-5      **Enhancing Hypergolic Reactivity: Metal Hydride-Fueled Fuel Grain with Solid Oxidant Doping**  
11:40-12:10      Chih Chin Chang, Shih-Sin Wei, Zu Puayen Tan, Yung Xiang Chang, Jong-Shinn Wu (National Yang Ming Chiao Tung University, Taiwan)
- OS4-6      **Enhancing Performance of Hybrid Rocket Propulsion System Through Nitrox: A Comparative Study**  
13:10-13:40      Jui-Cheng Hsu, Hsi-Yu Tso, Shih-Sin Wei, Jong-Shinn Wu (National Yang Ming Chiao Tung University, Taiwan)
- OS4-7      **Progress on HTTP-3A Hybrid Rocket Propulsion Technology Development**  
13:40-14:10      Shih-Sin Wei (National Yang Ming Chiao Tung University, Taiwan), Zuo-Ren Chen (National Yang Ming Chiao Tung University / National Tsing Hua University, Taiwan), Alfred Lai (Taiwan Space Agency (TASA), Taiwan), Tzu Hao Chou, Yueh Lu (National Yang Ming Chiao Tung University, Taiwan), Sho-Tsung Kao (Taiwan Space Agency (TASA), Taiwan), Andrew Wang, Meng-Che Lee, Chang-Hsiang Huang (National Yang Ming Chiao Tung University, Taiwan), Yu-Tsao Chang (National Yang Ming Chiao Tung University / Taiwan Space Agency (TASA), Taiwan), Yu-Kai Wang, Hsi-Yu Tso, Chih-Chin Chang, Jui-Cheng Hsu, Jong-Shinn Wu (National Yang Ming Chiao Tung University, Taiwan)
- OS4-8      **Reconstruction Technique for Hybrid Rocket Fuel Regression towards Overcoming Multiple Solutions**  
14:10-14:40      Alejandro Taiki Padilla Torres, Yuji Saito, Toshinori Kuwahara (Tohoku University, Japan)
- OS4-9      **Experimental Investigation of Regenerative Cooling in Hybrid Rocket Engines for the Nozzle Erosion Suppression**  
14:50-15:20      Giuseppe Gallo, Hiroki Kojima, Landon Kamps, Harunori Nagata (Hokkaido University, Japan)

- OS4-10      **Fuel Regression Characteristics of Axial-Injection End-Burning Hybrid Rocket with Liquid Oxygen**  
15:20-15:50      Kaii Ri, Sho Suzuki, Mai Fukada, Harunori Nagata (Hokkaido University, Japan)
- OS4-11      **Development of a Throttling Valve for Blow-down Hybrid Rocket Engine**  
15:50-16:20      Shuo-Chieh Wang (National Yang Ming Chiao Tung University, Taiwan), Zuo-Ren Chen (National Tsing Hua University, Taiwan), Shih-Sin Wei, Jong-Shinn Wu (National Yang Ming Chiao Tung University, Taiwan)
- OS4-12      **Feasibility Study of A-SOFT Hybrid Rocket Thrust-O/F Control System for Ground Test**  
16:30-17:00      Thun Siricharoensathaporn, Kohei Matsui, Koki Kitagawa (Kyushu Institute of Technology, Japan)