

Paper Reference List for 52nd ICES 2023

Paper #	Session	Title	Authors
ICES101: Spacecraft and Instrument Thermal Systems			
ICES-2023-264	101	NASA's PACE Ocean Color Instrument Thermal Design Evolution: from Goddard's Instrument Design Lab Through Flight Development	Kan Yang, Deepak Patel and Wes Ousley
ICES-2023-269	101	Thermal Control Design for Deep Space Optical Communication (DSOC) Docking Mechanism High-Output Paraffin Actuator	Rogelio Rosas, Kristen MacNeal, Marcus Wilkerson, Gregory Agnes, Joel Johnson, Arthur Na-Nakornpanom and Brenda Hernandez
ICES-2023-447	101	Design of Working Fluid Venting System for Mechanical Pumped Fluid Loop Heat Rejection System for Mars Missions	Pradeep Bhandari
ICES-2023-461	101	Check Valve Anomaly Investigation for the Mars 2020 Spacecraft	Jennifer Miller, Pradeep Bhandari, Keith Novak, Razmig Kandilian, Kaustabh Singh, Paul Karlmann, Mohamed Abid and Jacqueline Lyra
ICES102: Thermal Control for Planetary and Small Body Surface Missions			
ICES-2023-109	102	Thermal Design and Control of the Main Electronic Box in Titan Environment for the DraMS Instrument	Daniel Bae, David Steinfeld, Franklin Robinson and Samuel Nichols
ICES-2023-135	102	Thermal Performance of the Perseverance Rover During Mars Surface Operations	Bailey Cassler and Emma Nelson
ICES-2023-238	102	MMX Rover: Thermal Control Design and Validation of a Rover on Phobos Martian Moon	Maxime André
ICES-2023-337	102	Demonstration of Ice-Extraction and Ice-Collection System for Lunar Ice Miners	Kuan-Lin Lee, Sai Kiran Hota, Quang Truong, Mojtaba Edalatpour, Srujan Rokkam and Kris Zacny
ICES-2023-388	102	Dragonfly: Thermal Control System Design Overview	Gary Holtzman, Jane He, Robert Coker, Hui Liu, Dahway Lin, Bruce Williams, Elisabeth Abel and Carl Ercol
ICES-2023-389	102	Dragonfly: Lander Thermal System Modeling	Robert Coker, Gary Holtzman, Jane He, Hui Liu, Dahway Lin, Bruce Williams and Elisabeth Abel
ICES-2023-390	102	Dragonfly: Lander Thermal Testing	Dahway Lin, Bruce Williams, Gary Holtzman, Jane He, Robert Coker, Hui Liu and Elisabeth Abel
ICES-2023-392	102	Dragonfly: Lander Computational Fluid Dynamics (CFD) Thermal Analysis on Titan Surface	Hui Liu, Jane He, Gary Holtzman, Bruce Williams, Dahway Lin, Robert Coker and Elisabeth Abel
ICES-2023-472	102	DAVINCI EDU Descent Sphere Thermal Insulation Test Results and Model Correlation	Rommel Zara and Evan Alexander
ICES103: Thermal Control of Commercial and Exploration Spacecraft			
ICES-2023-42	103	Analyses of Blue Origin Blue Moon Lunar Landing Descent Engine Plume Effects	William Hoey, Maxwell Martin, John Alred, Carlos Soares and Mohammed Ababneh
ICES-2023-60	103	Actively Controlled Louver for Human Spacecraft Radiator Ultraviolet (UV), Dust, and Freeze Protection	Darnell Cowan
ICES-2023-120	103	Theoretical Approach to Quantify Effects of Lunar Dust Deposition on Radiator Performance for Moon Exploration Missions	Philipp B. Hager, Adrian P. Tighe, Fabrice W.S. Cipriani and Francesca McDonald
ICES-2023-142	103	Development of Parabolic Flight Experiment to Measure the Volume of Gas Bubbles Detaching from Substrates in a Liquid as a Function of Buoyancy, Gravitational Force and Substrate Surface Energy	Jadon Kaercher, Justin Roskamp, Samantha DeNicola and Bonnie Dunbar
ICES-2023-338	103	Hybrid Thermal Control System for Extreme Thermal Environments	William Johnson, Kayla Daniel, Kenton Roberts, Greg Schunk and Jeffery Farmer
ICES104: Advances in Thermal Control Technology			
ICES-2023-23	104	Thermal Modeling of a Novel Air-Cooled Temperature Swing Adsorption Compressor (AC-TSAC)	Hannah Alpert, Keith Peterson, Tra-My Justine Richardson, Quinton Dzurny and G. P. Peterson
ICES-2023-123	104	Highly Thermally Conductive Hybrid Carbon Fiber Polymer Composite for Radiator Application	Jin Ho Kang, Keith Gordon, Darwyn Ward, Grace Belancik, Pranav Jagtap and Godfrey Sauti
ICES-2023-241	104	Planetary and Lunar Environment Thermal Toolbox Elements (PALETTE) Project Final Results	David Bugby, Jose Rivera and QuynhGiao Nguyen
ICES-2023-244	104	Thermal Technology Advancements for Extended-Duration Lunar Operation	David Bugby and Jose Rivera
ICES-2023-335	104	Development of Flight Demonstration Hot Reservoir Variable Conductance Heat Pipes for Microgravity Testing and Future Lunar Landers and Surface Systems	Kuan-Lin Lee, Calin Tarau, Ramy Abdelmaksoud, William G. Anderson, Chirag Kharangate and Yasuhiro Kamotani
ICES-2023-350	104	Thermal Vacuum and Vibration Testing of the Differential Thermal Expansion Thermal Switch	Stephanie Mauro, Jeffery Farmer, David Bugby and Jose Rivera
ICES-2023-370	104	Two-Phase Thermal Switch for Lunar Lander and Rover Thermal Management	Nathan Van Velson, Jeffrey Diebold, David-Paul Schulze, Calin Tarau and William Anderson
ICES-2023-398	104	Design, Modeling, and Initial Characterization of a Subscale Variable Conductance Radiator for CO2 Deposition System in Deep Space Transit	Alexander Sarvadi, Huseyin Bostanci, Cable Kurwitz and Grace Belancik
ICES-2023-448	104	Design of an Actively Shuttered Dust-Resilient Radiator for Lunar Applications	Andrew S. Gibson, Angel Iglesias, Dominic Bailes-Brown, Martin Humphries, Simeon Barber and Philipp Hager
ICES107: Thermal Design of Microsatellites, Nanosatellites, and Picosatellites			
ICES-2023-130	107	Testing and Evaluation of Spacecraft Thermal Isolators for SmallSats	Isaac Foster, Trevor Bird, Derek Hengeveld and Steven Lockyer
ICES-2023-217	107	Evaluation of Thermal System Based on Flight Result of Nano Moon Lander OMOTENASHI	Junji Kikuchi, Tomihiro Kinjoh, Yuki Akizuki, Toshihiro Osada and Tatsuaki Hashimoto
ICES-2023-227	107	Thermal Control System Design and On-Orbit Validation for the 6U CubeSat SPHERE-1 EYE	Kazuki Takashima, Shingo Nishimoto, Yuki Kusano, Kazuki Toma, Toshihiro Shibukawa, Shinichi Yokobori, Akihiro Ishikawa, Shuhei Matsushita, Ryu Funase and Shinichi Nakasuka

ICES201: Two-Phase Thermal Control Technology			
ICES-2023-5	201	Development of a Deployable, Freeze-Tolerant Condensing Radiator for Spaceborne Two-Phase Pumped Loops	Thomas Conboy, Daniel Kromer and Eric Sunada
ICES-2023-11	201	Development and Testing of a Two-Phase Mechanically Pumped Loop for Active Antennae	Henk Jan van Gerner, Johannes van Es, Ramon van den Berg, Anne Tailliez, Andy Walker, Charlton Castro, Cristina Ortega, Mónica Iriarte, Romaine Kunst, Nuria Roldan and Christian Ortega Castañeda
ICES-2023-19	201	Fabrication and Evaluation of an Oscillating Heat Pipe with Check Valves by Metal Additive Manufacturing	Makiko Ando, Kousuke Tanaka, Atsushi Okamoto, Koutaro Matsushige, Kentaro Tanaka and Shinya Okuma
ICES-2023-57	201	Additively Manufactured Heat Pipe Performance and Modeling	Payton Batliner, Alex Pagano, John McHale, Natalie Walsh, Jacob Rome, Xueyong Kevin Qu and Glenn Bean
ICES-2023-79	201	Prototype of Loop Heat Pipe with Electrohydrodynamic Conduction Pump for Active Shutdown Function	Masahito Nishikawara, Takeshi Miyakita, Genki Seshimo, Hiroshi Yokoyama and Hideki Yanada
ICES-2023-85	201	Two Phase Capillary Evaporator Characterization for an Ammonia Cooling MPL Dedicated to Highly Dissipative Electronic	Benjamin Lagier, Frédéric Boudesseul and Laure Baert-Authier
ICES-2023-158	201	3D Printed Wicks for Loop Heat Pipes	Rohit Gupta, Chien-Hua Chen and William G. Anderson
ICES-2023-159	201	Operating Characteristics of Cryogenic Loop Heat Pipes at Different Filling Pressures	Takeshi Yokouchi, Xinyu Chang, Kimihide Odagiri, Hiroyuki Ogawa, Hosei Nagano and Hiroki Nagai
ICES-2023-198	201	Sublimation Cooling Technology for CubeSat Thermal Control	Janine Moses and Stephen Robinson
ICES-2023-213	201	Development and Characterization of Additive Manufacturing Flat Loop Heat Pipe Evaporator	Javier Corrochano, Francisco Romera, Carlos Galleguillos, Antonio Perifán, Fernando Lasagni, Marco Gottero and Stéphane Lapensée
ICES-2023-332	201	Experimental Comparison of Two-Phase Heat Spreaders for Space Modular Electronics	Sai Kiran Hota, Kuan-Lin Lee, Greg Hoeschele, Tanner McFarland, Srujan Rakkam and Richard Bonner
ICES-2023-430	201	Ammonia Loop Heat Pipe with Thin Evaporator Fabricated by Additive Manufacturing	Hosei Nagano, Satoshi Kajiyama, Kazuhiro Nakazawa, Takeshi Tsuru and Yuki Akizuki
ICES202: Satellite, Payload, and Instrument Thermal Control			
ICES-2023-4	202	JUICE (JUperiter ICy moon Explorer) Thermal Model Correlation and Final Flight Thermal Predictions	Romain Peyrou-Lauga and Gabriel Roca
ICES-2023-14	202	Benefits of the In-Orbit Thermal Correlation of the Solar Orbiter Spacecraft	Scott Morgan
ICES-2023-72	202	On-orbit Thermal Performance of the JWST Mid-Infrared Instrument	Bryan Shaughnessy, Tim Grundy, Samuel Tustain, Mireya Etxaluze, Bret Naylor and Mark Weilert
ICES-2023-122	202	Thermal Design of the Hyperspectral Instrument of the CHIME Mission	Victor Cleren and Niels Schibilla
ICES-2023-139	202	TuMag Optical Unit Thermal Control for a Stratospheric Balloon-borne Mission	Alejandro Gonzalo, Manuel Reina, Antonio Sánchez, Ana Fernández-Medina, María Cebollero, Hugo Laguna, David Escribano and Alberto Álvarez-Herrero
ICES-2023-348	202	Development of a Variable Conductance Cold Plate for Spatial and Temporal Isothermality Across Power Scales	Elizabeth Seber and Michael Ellis
ICES-2023-429	202	Embedded Pulsating Heat Pipe for Improved Heat Spreading in CFRP Equipment Panels for Satellites	Johannes van Es, Edwin Bloem, Roel Benthem, Adry Van Vliet, Ronald Klomp and Gunnar Sieber
ICES203: Thermal Testing			
ICES-2023-6	203	Development and Application of a Novel Calorimetry Technique for the Study of Lithium-Ion Cell Thermal Runaway	Steven Rickman
ICES-2023-48	203	Assessing Technical Risk of Tailoring Space Vehicle Thermal Vacuum Testing	John Welch
ICES-2023-126	203	METimage Visible and Infrared Detectors End to End Co-Alignment Verification at Cryogenic Subsystem Level	Raphaël Naire, Anja Bergs, Theresa Bonenberger, Robert Schweikle, Heiko Joos, Bernhard Dörner and Klaus Werner Kruse
ICES-2023-153	203	The Thermal Balance/Thermal Cycling Test of Euclid	Marco Gottero, Andrea Ferrero, Roberto Bogiatto, Daniele Stramaccioni, Alex Short, Giorgio Costa, Renato Martino and Simone Ferrero
ICES-2023-243	203	Cryogenic Thermal Test Setup for ARIEL FGS Instrument	Piotr Osica, Karolina Wielgos, Agata Białek, Markus Czapalla and Cezary Gąsowski
ICES-2023-317	203	Lunar Environment Monitoring Station TRL-6 Thermal Vacuum Test and Results	Ethan Burbridge, Mehdi Benna and Mitchell Hamann
ICES204: Bioregenerative Life Support			
ICES-2023-140	204	PFPU – Microgravity Precursor Food Production Unit development status	Giorgio Boscheri, Giovanni Marchitelli, Thomas Fili, Christel Paille, Irene Karoliussen, Achim Gerstenberg, Øyvind Mejdell Jakobsen and Kai Arne Kristiansen
ICES-2023-220	204	Microbial Electrochemical Technologies for Regenerative Life Support Systems	Amanda Kay Luther, Jean-Romain Bautista Angeli, Dries Demey, Korneel Rabaey and Jolien De Paepe
ICES-2023-234	204	Plasma Activated Water: A Technology for Acid Generation and Space Crop Production	Ryan Gott, Kenneth Engeling, Joel Olson, Misle Tessema, Jason Fischer, Carolina Franco, Bruce Link and Christina Johnson
ICES-2023-258	204	Integration of a Photobioreactor into the MaMBA Facility as Part of a Human-centered Life Support System	Paul Große Maestrup, Ksenia Appellganc, Saurabh Band, Florian Stechmann, Vera Hagemann, Anna Förster, Cyprien Verseux and Christiane Heinicke
ICES-2023-274	204	Integration and Validation of Mushroom and Algae into an Agent-based Model of a Physico-chemical and Bioregenerative ECLSS	Sean Gellenbeck, Joel L. Cuello, Barry Pryor, Kai Staats and Chuck Gerba
ICES-2023-281	204	Survey of Microbial Community in Bioreactors Used for Bioregenerative Water Purification	Daniella Saetta, Jason Fischer, Talon Bullard, Alexandra Smith, Cory Spenn, Anirudha Dixit, Christina Khodadad, Daniel Yeh and Luke Roberson
ICES-2023-318	204	Workload Measurements in the EDEN ISS Greenhouse during the 2021 Antarctic Overwintering Mission	Conrad Zeidler and Jess Bunchek
ICES-2023-421	204	1st International Space Ecology Workshop - Research Needs & Roadmap to the Future	Christine Escobar, Patrick Grubbs, Frieda Taub, Jane Shevtsov, Sherri Damlo and Stephen Lantin
ICES-2023-450	204	Ionic Liquid-based CO2 Control of Plant Growth Chamber Atmospheres	Felix Nitschke and James Nabity

ICES205: Advanced Life Support Sensor and Control Technology			
ICES-2023-83	205	Spacecraft Water Analysis with Nanopore (SWAN)	Zehui Xia, Brian DiPaolo and David Niedzwicki
ICES-2023-92	205	ANITA-2 – the Advanced Multicomponent Air Analyser for ISS – First Year of Operation, Hardware Behaviour, Expected Lifetime and Reliability as well as Future Updates for ANITA-3	Lukas Pfeiffer, Michael Gisi, Eckart Göhler, Roland Seurig, Armin Stettner, Atle Honne, Kristin Kaspersen, Jens Thielemann, Anders Erik Liverud, Pierre Rebeyre and Kari A. Bakke
ICES-2023-95	205	ANITA2 – the Advanced Multicomponent Air Analyser for ISS – Gas Measurement Results From the ISS Air in 2022	Atle Honne, Kristin Kaspersen, Kari Anne Hestnes Bakke, Anders Erik Liverud, Jens T. Thielemann, Brian Elvesæter, Michael Gisi, Lukas Pfeiffer, Armin Stettner, Eckart Göhler, Roland Seurig and Pierre Rebeyre
ICES-2023-256	205	Portable Tunable Laser Spectrometer (PTLS) for Human Exploration: Update on Lasers and Mesh Networking	Lance Christensen, Kamjou Mansour, Alexander Hart, Benedito Fonseca, Yuebin Ning, Simon Wingar, Nakeeran Ponnampalam, Tran Tran, Rachel Rae, Graham McKinnon, James Gupta, Ghasem Razavipour, Weihong Jiang and Pedro Barrios
ICES-2023-301	205	Feasibility Testing of a Thermal Dispersion Flowmeter with External Signal Conditioning for Health Monitoring of Liquid and Gas flows	Diego Mugurusa, Nicholas Van Derzee and James Davis
ICES-2023-302	205	Orion LAMS Laser Absorption Spectrometer for Human Spaceflight – Artemis 3 Flight Unit Build and Test Results	Jason Pohly, Lance Christensen, Kamjou Mansour, David Roe, John Vaughan and Cody Erb
ICES-2023-373	205	Evaluation of a New Commercial Catalyst for CO Oxidation for Environmental Control and Life Support Applications	Sudheera Yaparadne, Madison McCarthy, Louis Nicoloro, Neil Fisher, John Graf, Lawrence Barrett, Oageng George and Onur Apul
ICES-2023-465	205	Calibration and Performance of the Spacecraft Atmosphere Monitor, an Air Constituent Monitor for Human Spaceflight	Murray Darrach, Byunghoon Bae, Dejian Fu, Vachik Garkanian, Margie Homer, Richard Kidd, Cecile Jung-Kubiak, Hannes Kraus, Frank Maiwald, Stojan Madzunkov, Charles Malone, Dragan Nikolic, Mina Rais-Zadeh, Tina Tillmans, Fang Zhong and Jurij Simcic
ICES-2023-470	205	SWIM: Progress Report on the Organics Detection from Water	Dragan Nikolic, Stojan Madzunkov and Jurij Simcic
ICES206: Crewed Orbiting Infrastructures, Habitats, Space Station and Payload Thermal Control			
ICES-2023-131	206	Novel Vapor Chambers for Heating and Cooling of Advanced Sorption Systems	Haley Myer and Michael C. Ellis
ICES207: Thermal and Environmental Control Engineering Analysis and Software			
ICES-2023-77	207	Alternate Approach to Multi-Layer Insulation Modeling to Reduce Node Count	Hume Peabody and Chris Evans
ICES-2023-111	207	Small Satellite Validation of a Simulation Approach for Assessing Dynamic Temperatures in Orbit	Corey Packard, Timofey Golubev, Daniel Woodford, Madison Rosiek and Zachary Edel
ICES-2023-129	207	Novel Methods for Modeling Thermochromic Variable Emissivity Surfaces	Derek Hengeveld and Jonathan Allison
ICES-2023-151	207	Improvement in Radiative Exchange Factor Calculations Using New GPU Dedicated Hardware	Daniel Navajas Ortega, Javier Piqueras Carreño, Ignacio Torralbo Gimeno, Isabel Pérez-Grande and David González Bárcena
ICES-2023-152	207	Space Rider Re-entry Module Thermal Transient Uncertainty Analysis: Methodology and Results	Gianni Pippia, Maria Chiara Berva, Massimo Bertone, Corrado Guglielmo, Andrea Ferrero, Giovanni Chirulli and Egidio Collavo
ICES-2023-162	207	A System-Level Spacecraft Thermal Model Reduction Method Applicable to Transient Analysis	Toshihiro Shibukawa and Shinichi Nakasuka
ICES-2023-218	207	Reduction and Correlation of Lumped Parameter Method for Thermal Models in Steady-State Conditions	Ignacio Torralbo Gimeno, German Fernandez-Rico, Javier Piqueras-Carreño and Isabel Perez-Grande
ICES-2023-305	207	Modeling of Gateway Environment Control and Life Support Systems as a Means to Investigate the Subsystem and Integrated Architecture Performance	Lawrence Barrett, Rachel Sturtz and Madelyn Hutchinson
ICES-2023-372	207	BBTherm: A High-Fidelity Analysis Tool for Estimating the In-Vacuum Thermal Conductance Across Ball Bearings	Christopher Bertagne, Christopher Ye, Natalie Walsh, John McHale and Yoshimi Takeuchi

ICES300: ECLSS Modeling and Test Correlations

ICES-2023-56	300	<u>Comprehensive 3D Multiphysics Model on Electrochemical Recovery of O₂ from metabolic CO₂ at the International Space Station (ISS)</u>	Jesus Dominguez, Cara Black, Brittany Brown, Wilaiwan Chanmanee, Brian Dennis, Kaitlin Oliver-Butler, Kagen Crawford, Shannon McCall, Kenneth Burke, Joseph Fillion and Lorlyn Reidy
ICES-2023-74	300	<u>V-HAB Atmosphere Modeling and Simulation for a Crewed Polar Sortie</u>	Amrita Singh, Trayana Athannassova, James Nabity and Claas Olthoff
ICES-2023-211	300	<u>Ecosystem Modeling and Validation using Empirical Data from NASA CELSS and Biosphere 2</u>	Grant Hawkins, Ezio Melotti, Kai Staats, Atila Meszaros and Gene Giacomelli
ICES-2023-246	300	<u>Numerical Study of Carbon Dioxide Transport Problem for the Open and Lower Airflow Space in the ISS Module</u>	Chang Son, Nikolay Ivanov, Evgueni Smirnov and Denis Telnov
ICES-2023-249	300	<u>Numerical Validation of ISS Columbus Crew Alternative Sleeping Area Ventilation with an Improved Configuration</u>	Chang Son, Susan Snyder, Amy Caldwell, Nikolay Ivanov, Evgueni Smirnov and Denis Telnov
ICES-2023-445	300	<u>First Principles Modeling of the Thermal Amine Scrubber Flight Experiment's Chemical Performance</u>	Lawrence Barrett

ICES301: Advanced Life Support Systems Control

ICES-2023-51	301	<u>Development of an efficient alternative to recovery O₂ from metabolic CO₂ via electrolysis operated at ambient temperature and driven by a highly selective catalysis</u>	Jesus Dominguez, Cara Black, Brittany Brown, Wilaiwan Chanmanee, Brian Dennis, Lorlyn Reidy, Shannon McCall, Kaitlin Oliver-Butler, Kagen Crawford, Kenneth Burke and Joseph Fillion
ICES-2023-184	301	<u>Numerical Analysis of Lunar Dust in Support of the Habitat and Logistics Outpost</u>	Owen G. Brown, James C. Eblin, Luis M. Bermudez and Zach Turner
ICES-2023-222	301	<u>Long Term Material Circulation Control and Handling Repair Order in ALSS by Hierarchical Approach</u>	Masakatsu Nakane and Hiroyuki Miyajima
ICES-2023-290	301	<u>PESTO: An Agile Computational Solution for ECLSS Simulation and Control for the Gateway Air Revitalization System</u>	Jonathan Anthony and Gregory Doidge

ICES302: Physio-chemical Life Support - Air Revitalization Systems - Technology and Process Development

ICES-2023-1	302	Performance of Flight Compatible Microlith® Catalytic Oxidizer for Exploration Trace Contaminant Control	Saurabh Vilekar, Curtis Morgan, Matthew Kayatin and Jay Perry
ICES-2023-70	302	A Cryogenic CO2 Scrubber with an Integrated Switchable Heat Pipe	Weibo Chen, Luis Fonseca Flores and Scott Roberts
ICES-2023-80	302	Is Direct Methane Removal in Human Space Flight Required?	Bettylynn Ulrich
ICES-2023-82	302	Leaky Waveguide Solid Sorbent Desorption System Overview	Chris Delnero, Clifton Courtney, Arun Bhattacharyya and Kevin Payne
ICES-2023-88	302	Methane Pyrolysis Enables Closed-loop Oxygen Recovery - Brassboard Evaluation	Amanda Childers, Stephen Yates and Mark Triezenberg
ICES-2023-101	302	Ground Testing of an Oxygen Concentrator in a Simulated International Space Station (ISS) Cabin Environment	Laura Soto, Katerina Lewis and Jeffrey Sweterlitsch PhD
ICES-2023-103	302	Carbon Dioxide Removal by Ionic Liquid System (CDRILS): Ground Prototype Testing and Trace Contaminant Removal Integration	Rebecca Kamire, Stephen F. Yates, Phoebe Henson, Matthew J. Kayatin, Jack Ford, Emir Rahislic, Mark Triezenberg, Meghan Pipitone, Eric Pope and Nathaniel Gressly
ICES-2023-104	302	Integrated Testing of the Air-Cooled Temperature Swing Adsorption Compression System (AC-TSAC) and 4-Bed Molecular Sieve (4BMS)	Jonathan Wells, Kelby Gan, Arisa Waddle and Grace Belancik
ICES-2023-116	302	Status of the Four Bed Carbon Dioxide Scrubber ISS Technology Demonstration 2022-2023	James Knox, Gregory Cmarik and John Garr
ICES-2023-119	302	Four Bed Carbon Dioxide Scrubber Engineering Development Unit Cabin Air Inlet Testing	James Knox, Gregory Cmarik and Arisa Waddle
ICES-2023-127	302	Automated Carbon Formation Reactor Facilitates Closed-Loop Oxygen Recovery to Enable Long-Duration Manned Missions	Mary Powell, Chris Holt, Paul Matter, Travis Hery, Toby Baumgartner, Jacob Goldman, Carolyn Weiser, Charlie Wiswesser, Elek Kayuha and Makenzie Holt
ICES-2023-137	302	Update of the Ground-Based Liquid Amine Horizontal Contactor Test System	Tiago Costa, Lisa Chu, Lawrence Barrett, Grace Belancik and Jason Samson
ICES-2023-143	302	CO2 Capture with Supported Ionic Liquid Membranes for ECLSS and ISRU: Progress, Performance, and Potential	Bharath Tata, Cody Bahan and James Nabity
ICES-2023-196	302	Development of CO2 Reduction-Water Electrolysis Tandem Device as a Full-Scale Model	Asuka Shima, Masato Sakurai, Yoshitsugu Sone, Hironori Nakajima, Mitsuhiro Inoue and Takayuki Abe
ICES-2023-206	302	Preliminary Study of Moisture Absorption and Desorption in CO2 Removal System	Masato Sakurai, Asuka Shima, Kentaro Hirai, Chiaki Yamazaki, Shotaro Futamura, Satoshi Matsumoto and Hideki Saruwatari
ICES-2023-208	302	Design, Build, Test of a CO2 Removal Testbed and Twin Robotically Manipulable Testbed: Sensing Degradation and Performing Maintenance with Robot/Human Teaming	Daniela Ivey, Ulubilge Ulusoy, Samuel Eshima, Tammer Barkouki, Ayush Mohanty, Monica Torralba, Christopher Lindbeck, Stephen Balakirsky and Stephen Robinson
ICES-2023-210	302	Multifunctional Sorbent (MultiSORB) Devices for Carbon Dioxide Removal	Tra-My Justine Richardson, Keith Peterson, Tane Boghozian, Hannah Alpert, Sander Visser, Gurpreet Klar, Alexander Schmitt, Gabriella Sandoval, Cameron Ojeda and Quinton Dzurny
ICES-2023-260	302	Increased Oxygen Recovery Using Plasma Pyrolysis Technology and Electrochemical Hydrogen Separation	Kagen Crawford, Cara Black and Travis Quillen
ICES-2023-308	302	Demonstration of an Electrochemically-Driven Multi-Cell Stack Using Shorted Anion Exchange Membranes for Spacecraft Cabin Air Revitalization	Marco Colin Martinez, Stephanie Matz, Brian Setzler and Yushan Yan
ICES-2023-311	302	Status of the Advanced Oxygen Generation Assembly	Kevin Takada, David Hornyak, John Garr, Steven Van Keuren, Christine Faulkner and Abdelrahman Elsherbini
ICES-2023-351	302	Cold Trap Carbon Capture Filter for Carbon Fines Management – In-laboratory Performance and Efficiency Results	Juan Agui and Gordon Berger
ICES-2023-358	302	Evaluation of Alternative Liquid Sorbents and Additives for Spacecraft CO2 Capture	Grace Belancik, Lisa Chu, Tiago Costa and Mathangi Soundararajan
ICES-2023-376	302	Spacecraft Carbon Dioxide Deposition Full-Scale System: Design, Analysis, Build and Test	Pranav Jagtap, Grace Belancik, Michael Schuh, Tiago Costa, Kelby Gan and Jason Samson
ICES-2023-383	302	Microbial Mayhem: Microbial Growth Potential in CO2 Removal Systems Designed for Long-Duration Spaceflight	Nico Whitlock and Grace Belancik
ICES-2023-400	302	Preliminary Investigation of Vortex Phase Separator-Based Spacecraft Cabin Air Dehumidification Subsystem for CO2 Removal	Chirag Byanjankar, Alexander Sarvadi, Huseyin Bostanci, Cable Kurwitz and Grace Belancik
ICES-2023-403	302	Ionic Liquids for a Regenerable Carbon Formation Reactor: Reactor Design Study and Ionic Liquid Parameterization	Kaitlin Oliver-Butler and Mitchell Woolever
ICES-2023-408	302	Ceramic Oxygen Generator: A Method for Extracting High Pressure, High Purity Oxygen from Spacecraft Cabin Air	John Graf, Dale Taylor and Jon Tylka
ICES-2023-414	302	Test and Evaluation of the Next Generation Blower for FBCO2 Scrubber	Kaitlin Oliver Butler, Jim Knox, Rasish Khatri, Octavio Solis and John Garr
ICES-2023-417	302	Carbon Dioxide Adsorption Process of 3D Zeolite-13X Structures: A Numerical Study	Noah Agata, Priom Agrawal, Joseph Cesarano, Michael Niehaus, Tra-My Justine Richardson and Sajjad Bigham
ICES-2023-423	302	The FY2022 Development Status of CO2 Removal System for ISS Demonstration	Chiaki Yamazaki, Kentaro Hirai, Shotaro Futamura, Satoshi Matsumoto, Hideki Saruwatari, Ayako Yamamoto, Hidetoshi Nakagami, Mutsumu Nagase, Tomohiro Kinoshita, Naomi Yoshino and Katsunori Yogo

ICES303: Physio-Chemical Life Support - Water Recovery & Management Systems - Technology and Process Development			
ICES-2023-2	303	Material Compatibility Study of Coated Metals to Maintain Biocidal Silver in a Spacecraft Potable Water System	Rogelio Garcia Fernandez, Stacey Marshall and Niklas Adam
ICES-2023-41	303	Silver Electrolysis for Disinfection of Spacecraft Potable Water: 2023 Update	Phillip Hicks, Niklas Adam and Rogelio Garcia Fernandez
ICES-2023-45	303	From Waste to Water - An Integrated System to Recover Potable Water from Urine and Condensate	Ingrid Helgeland, Maja Bender Tommerup, Jason A. Ogden and Jörg Vogel
ICES-2023-68	303	Mitigation of Silver Ion Loss from Solution by Polymer Coating of Metal Surfaces, Part V, and Related Developments	John Vance and Lance Delzeit
ICES-2023-71	303	Capacitively-Coupled Contactless Conductivity Detection (C4D) for In-Line Ionic Silver Monitoring	John Vance, John Abdou and Lance Delzeit
ICES-2023-87	303	Characterization of Microbes Present in Purge Pump and Separator Assembly Ground Testing	Kristen Saban, Yo-Ann Velez Justiniano, David Long, Peyton Herneckar and Eric R. Beitle
ICES-2023-90	303	Analysis of CDC Bioreactor Internal Thermal Measurements and Sample Coupon Temperatures	Eric Beitle, Connor Murphy, Yo-Ann Velez Justiniano and Darla Goeres
ICES-2023-94	303	Status of ISS Biofilm Management Testing for the Water Processor Assembly	Yo-Ann Velez Justiniano, Iulian Cioanta, Eric R. Beitle, Connor P. Murphy, Cary McGhin and John Jackson
ICES-2023-96	303	CDC Bioreactor Configuration Method for Volume Level Control with Controlled Inlet and Outlet Flow	Connor Murphy, Eric Beitle and Yo-Ann Velez Justiniano
ICES-2023-100	303	Development and Testing of a New Partial Gravity Urine Processor Design and Urine Pretreatment	Jill Williamson, Colton Caviglia, Yo-Ann Velez Justiniano, Chelsea McCool and Chelsi Cassilly
ICES-2023-175	303	Hybrid Life Support System Full Scale Testing: Integrated Bioreactor-Desalination Long Term Testing	Ghaem Hooshyari, Arpita Bose, Jessica La-Grenade, Siddhi Kad, Michael Callahan and William Jackson
ICES-2023-237	303	To Biocide or not to Biocide? Exploring the "No Biocide" Option in Spacecraft Potable Water Systems	Mary Lou Nadeau, Audry Almengor, Dean Muirhead, Mark Ott and Michael Callahan
ICES-2023-251	303	Silver Foam: A Novel Approach for Long-Term Passive Dosing of Biocide in Spacecraft Potable Water Systems – Update 2023	Tesia Irwin, Angie Diaz, Jennifer Gooden, Mary Hummerick, Wenyan Li, Nilab Azim, Deborah Essumang and Michael Callahan
ICES-2023-252	303	Mitigation of Biofouling in Plant Watering Systems Using AgXX, a Novel Surface Treatment	Tesia Irwin, Wenyan Li, Angie Diaz and Mary Hummerick
ICES-2023-288	303	Dormancy Protocol of Electro Oxidation Membrane Evaporator for Urine Processing and Water Recovery	Tatsuya Arai and John Fricker
ICES-2023-292	303	Brine Processor Assembly: A Year of Successful Operation on the International Space Station	Stephanie Boyce, Connor Joyce, Patrick Pasadilla, Philipp Tewes, Jonathan P. Wilson, Jill Williamson and Katherine Toon
ICES-2023-360	303	Alternative Treatment of Crew Wastewater Using a Hybrid Membrane Technology	Talon Bullard, Daniella Saetta, Alexandra Smith, Katrina Haarmann, Flaubert Akepeu, Ana Ferret, Celia DeVito, Benjamin Hoque, Robert Bair, Melissa Collins, Mark Fehrenbach, Paul Long, Jason Fischer, Luke Roberson and Daniel Yeh

ICES304: Physio-Chemical Life Support - Waste Management Systems - Technology and Process Development

ICES-2023-7	304	<u>Source Contaminant Control System Design, Operation, and Testing for the Trash Compaction and Processing System</u>	Janine Young, Gregory Pace, Serena Trieu, Kevin Martin, Tra-My Justine Richardson, Steve Sepka and Jurek Parodi
ICES-2023-8	304	<u>The Collapsible Contingency Urinal (CCU) for Spacecraft</u>	Mark Weislogel, Ryan Jenson, Oleg Krishcko, Logan Torres, Adam Nails, John Graf and Donald Pettit
ICES-2023-38	304	<u>NASA Exploration Toilet On-orbit Results and Impact on Future Missions</u>	Melissa McKinley, Melissa Borrego, Cory Kaufman, Jill Williamson and Kelly DeRees
ICES-2023-40	304	<u>Advancements in Logistics Reduction for Exploration Missions</u>	Melissa McKinley, Melissa Borrego, Patrick Fink, Anne Meier, Michael Ewert, Curtis Hill, Steven Sepka, Tra-My Justine Richardson and Evelyn Orndoff
ICES-2023-43	304	<u>Evolution of the Next Exploration Toilet through Human-in-the-Loop (HITL) Testing</u>	Melissa Borrego, Mary Walker, Yvette Carmona, Alexandra Eifert and Alisa Marshall
ICES-2023-47	304	<u>Benefits of Trash-to-Gas versus Jettison of Waste via Trash-Lock for Mars Transit</u>	Thomas Chen, Michael Ewert and Joel Olson
ICES-2023-63	304	<u>Analysis of the Solid Products from the OSCAR and the AOWG Trash Processing Systems</u>	Anne Meier, Mahmoud Matar Abed, Stacy Carrera, Joel Olson and David Rinderknecht
ICES-2023-73	304	<u>Solid Waste Ultrasonic Drying Performance under Zero Gravity Condition and the Impact on Material Bioactivity</u>	Ayyoub Momen, Connor Shelander, Jonathan Bigelow and Tra-My Justine Richardson
ICES-2023-75	304	<u>Considerations For Waste-to-Base Future Research Paths</u>	Steven Sepka, Michael Ewert, Jeffrey Lee and Andrew Shapiro
ICES-2023-199	304	<u>Spaceflight Exercise and Textile Laundering Machine for Improved Human Health</u>	Andrew Arends and Stephen Robinson
ICES-2023-207	304	<u>The Trash Compaction Processing System (TCPS) Technology Demonstrations Science Objectives and Requirement Definitions</u>	Tra-My Justine Richardson, Steve Sepka, Kevin Martin, Michael Ewert, Melissa McKinley, Jeffrey Lee, Gregory Pace, Douglas White, Janine Young and Serena Trieu
ICES-2023-263	304	<u>Using Effluent from a Hybrid Anaerobic Membrane Bioreactor Treating Fecal Waste for Hydroponic Fertigation of Pak Choi</u>	Alexandra Smith, Talon Bullard, Daniella Saetta, Jason Fischer, Katrina Haarman, Flaubert Nascimento Akepeu, Luke Roberson and Daniel Yeh
ICES-2023-283	304	<u>Plasma Abatement of Volatile Organic Compounds</u>	Joel Olson, Ryan Gott, Shayla Wilhelm, Kenneth Engeling, Caiden Campbell and Ray Pitts
ICES-2023-296	304	<u>Design of a Trash Compaction & Processing System (TCPS) for Waste Management and Logistics Reduction in Long Duration Spaceflight</u>	Joseph Klopotic, Daniel Wyman, Zachary Petrie and John Wetzel
ICES-2023-328	304	<u>Ultrasonic Clothes Washer/Dryer Combination for Moon, Mars, and ISS Applications</u>	Ayyoub Momen, Jonathan Bigelow, Connor Shelander, Justin Ellis, Dennis Chertkovsky, Michael Ewert and Melissa McKinley
ICES-2023-359	304	<u>Producing Air Revitalization Sorbents from Spacecraft Waste Biomass</u>	Oscar Monje, Joshua Finn and Orlando Melendez
ICES-2023-385	304	<u>Baseline Assumptions and Ersatz Waste Streams for Partial Gravity Habitats with Mobile Female and Male Crew</u>	Dean Muirhead, Stacey Marshall, Leopoldo Romero, Niklas Adam and Michael Callahan
ICES-2023-418	304	<u>Ejectors as a Contingency for Waste and Odor Collection in Microgravity</u>	Cory Kaufman, Matthew Pearson and Yasmin Khakpour
ICES-2023-420	304	<u>Feasibility of an Optical Sensor to Monitor Toilet Pretreat Quality</u>	Cory Kaufman, Robert Youngquist, Tracy Gibson, Mark Nurge and Upendra Singh

ICES305: Environmental Control of Commercial and Exploration Spacecraft			
ICES-2023-248	305	The LIFETM Habitat (Large Integrated Flexible Environment) Air Revitalization System Development	Sam Moffatt, Mark Mentink, Michael Martinez, Jacob Fischer, Matt Hurr, Adam Marten and Abolfazl Shakouri
ICES307: Collaboration, Education Outreach, and Public Engagement			
ICES-2023-16	307	U.S. Spacesuit Knowledge Capture – Expanding Our Future	Cinda Chullen, Vladenka Oliva, Gordon Andrews and Diana Rodgers
ICES-2023-154	307	Unfolding the Universe with the James Webb Space Telescope: Combining Art, Science, and Technology for Public Outreach	Elaine Stewart, Ashley Zelinskie and Maggie Masetti
ICES-2023-209	307	Integrating Real-Time Environmental Data into an Educational Web Interface	Meridith Greythorne, Gregory Ross, Ian Castellanos, Grant Hawkins, Ezio Melotti, Ryan Meneses, Kai Staats and Gretchen Hollingsworth
ICES-2023-266	307	Inspiring Future Generations to Pursue Careers in Space	Michael Wales, Laurinda Bellinger, Kristen Yip, Riza Mae Mold, Barret Schlegelmilch, Violet Days, Amalaye Oyake and Charles Njoka
ICES-2023-307	307	Integrating Hands-on Learning Modules into a Course on Life Support Systems	James Nabity
ICES-2023-342	307	Pathway to Successful Inclusion of Tribal Colleges and Universities (TCUs) in the Johnson Space Center (JSC) Small Business Innovation Research (SBIR) / SBIR Technology Transfer (STTR) Program	Doug Goodman, Kathryn Packard and James Whittington
ICES-2023-442	307	iSTEM to Know NASA Outreach Program at Purdue University Fort Wayne	Dawn Whitaker and Marteze Hammonds
ICES-2023-452	307	Space Hands-on Training at the University of Stuttgart: from Microalgae to Docking Maneuvers	Gisela Detrell
ICES-2023-459	307	A Constellation of Dreamers: Advancing Space Exploration through Democratization	Daniella Ngarambe, Patrick Grubbs, Anatole Trepos, Florent Bourlette, Tarek Ben Slimane and Louise Fleischer
ICES308: Advanced Technologies for In-Situ Resource Utilization			
ICES-2023-3	308	Regenerative Solid Oxide Stack for Energy Storage	Saurabh Vilekar, Christian Junaedi, Kyle Hawley, Eric Allocco and Jessica Rehaag
ICES-2023-17	308	Pressure Retarded Osmosis for Water Supply for Alkaline High Pressure Electrolysis	Sebastian Markgraf, Fabian Fremdling, Walter Jehle and Martino Giobbio
ICES-2023-52	308	Extraterrestrial Mining Via Two Coupled Thermal-Driven Phenomena	Jesus Dominguez, Cara Black, Brittany Brown, Paul Hintze, Shannon Mccall and Kagen Crawford
ICES-2023-108	308	Demonstration of Paragon's ISRU Propellant Production Subsystem Electrolyzer and Electrolysis Assembly	Jordan Holquist, Connor Joyce, Robert G Rivera, Philipp Tewes, Timothy Myles, David Markham, Thomas Ebaugh, Meagan Rich and Jason Willey
ICES-2023-136	308	Demonstration and Model Validation of Freeze Distillation as a Purification Step for Lunar Water Processing	Connor Joyce, Jordan Holquist, Alex Ruble, Robert Rivera and Timothy Moeller
ICES-2023-297	308	Scale Up and Coupling of the MOXIE Solid Oxide Electrolyzer for Mission-Scale Lunar and Martian Applications	Michele Hollist, Joseph Hartvigsen, Jessica Elwell, S. Elangovan, Tyler Hafen and Jenna Pike
ICES-2023-313	308	Carbothermal Reduction System Overview and Developments in Support of the Artemis Program and a Commercial Lunar Economy	Brant White and Nathan Haggerty
ICES-2023-455	308	Ionic Liquid Parameter Prediction Leveraging Quantum Structure Property Relationships	Mitchell Woolever, James Nabity, Ronald Cook and Eric Fox
ICES-2023-475	308	An Experimental Study on Low Pressure Frost Formation for Lunar Polar Water Capture	Beau Compton, Timothy Krause and Leah Struchen Deans

ICES400: Extravehicular Activity: Space Suits			
ICES-2023-33	400	Exploration Helmet Permanent Anti-fog Study	Kristine Davis and Greg Trude
ICES-2023-34	400	Initial Testing of the Exploration Extravehicular Mobility Unit (xEMU) in Lunar Environment Simulation at the Neutral Buoyancy Lab (NBL) in 2022	Kristine Davis, Zachary Tejral, Tommy Keomany and Linh Vu
ICES-2023-37	400	Establishing Standardized Test Methods for Evaluating Space Suit Gloves	Robert Jones, Richard Rhodes, Morgan Abney, Timothy Brady, Shane McFarland, Joseph Settles, Chanel Stephens, Andrew Hoyle, Andrew Funk and Stephanie Rodgers-Ahnen
ICES-2023-58	400	Exploration Extravehicular Mobility Unit (xEMU) Pressure Garment System (PGS) Cycle Testing Overview and Results	Christine Flaspohler and Richard Rhodes
ICES-2023-121	400	NASA Advanced Space Suit Pressure Garment System Status and Development Priorities 2023	Shane McFarland, Richard Rhodes and Don Campbell
ICES-2023-240	400	Design for Custom Shaped Spacesuit, and Optimizing the Fit of Spacesuit Hard Upper Torso	Will Green, Pablo De Leon, Jesse Rhoades and Han Kim
ICES-2023-257	400	Testing Fit, Mobility, and Comfort of the Exploration Pressure Garment Subsystem (xPGS)	Richard Rhodes, Christine Flaspohler and Shane Mcfarland
ICES-2023-286	400	Exploration Extra-Vehicular Mobility Unit (xEMU) Composite Hard Upper Torso (CHUT) Development	Shridhar Yarlagadda, David Roseman, Joseph Cipriani, Nicholas Shevchenko, John Tierney, John Gillespie Jr, Mohan Parthasarathy, Richard Rhodes, Daniel Kim and Jeremy Jacobs
ICES-2023-466	400	Development of ARGOS Offloading Assessments and Methodology for Lunar EVA Simulations	Sarah Jarvis, Richard Rhodes, Linh Vu, Garima Gupta, Elizabeth Benson, Han Kim and Sudhakar Rajulu
ICES401: Extravehicular Activity: Systems			
ICES-2023-25	401	Requirements Engineering Scorecard and the Next-Generation Space Suit	Michael Cabrera, Steve Simske and Julia Worrell
ICES-2023-236	401	Using Virtual Reality to Envision Deployment of Spacesuit-Compatible Augmented Reality Displays for Lunar Surface Operations	Jacob Keller, Lanssie Ma, Matthew Noyes, Daren Welsh, Lauren Brady, Joseph Vacca, Forrest Porter, Skye Ray, Paromita Mitra and Matthew Miller
ICES-2023-268	401	Compatibility between Exploration EVA System and Exploration Spacecrafts	Christine Kovich and Caitlin Meyer
ICES402: Extravehicular Activity: PLSS Systems			
ICES-2023-26	402	Space Suit Portable Life Support System Thermal Control Valve Ball Design	Ryan Ogilvie, Sean Miller and Tessa Rundle
ICES-2023-27	402	Space Suit Portable Life Support System Oxygen Regulator History, Development, & Testing Results	Ryan Ogilvie, Colin Campbell, Ioannis Hatziprokopiou, Robert Walz and James Rogers
ICES-2023-35	402	Ventilation Heat Exchanger/Flow Meter for xPLSS	Michael Izenson, Adam Niblick, Sheldon Stokes and Tessa Rundle
ICES-2023-53	402	Development of a Multi-Gas Microsensor Array for the Exploration Portable Life Support System	James Makel, Richard Kokoletsos, Darby Makel, Ryan Ogilvie and Sepehr Bastami
ICES-2023-64	402	xPLSS Structural Backplate Design, Manufacture, and Test Overview	Sarah Hargrove and Sean Miller
ICES-2023-160	402	The Development of Carbon-Based Sorbent Monoliths – a Review	Marek A. Wojtowicz, Joseph E. Cosgrove, Michael A. Serio, Andrew E. Carlson and Cinda Chullen
ICES-2023-267	402	SERFE PLSS Component Lessons Learned from ISS	Alicia Contreras-Baker, David Westheimer and Chane Sladek
ICES-2023-320	402	Nanoporous Silica as a Regenerable Sorbent for Potential Integration into NASA's Trace Contamination Control System	Evgueni Kadossov, Nick Materer, Allen Apblett, Shoaib Shaikh, Mallikharjuna Komarneni, Michael Teicheira, Cinda Chullen, John Hostetler and Kelsey Boom
ICES-2023-324	402	Test Bed for Evaluation of Sorbents Used in the Exploration Portable Life Support System	Nick Materer, Evgueni Kadossov, Allen Apblett, Mallikharjuna Komarneni, Shoaib Shaikh, Michael Teicheira, Cinda Chullen and Kelsey Bloom
ICES-2023-399	402	Design and Performance Maturation of Regenerable Trace Contaminant Control for Removal of Ammonia and Other Trace Constituents	Christian Junaedi, Kyle Hawley, Codruta Loebick and Sinead Flanagan
ICES403: Extravehicular Activity: Space Suit and Surface Mobility Operations			
ICES-2023-59	403	Testing the Exploration Conops(Excon) Mockup Suit in Lunar Analog Environments in 2022	Zachary Tejral, Zachary Fester, Christine Flaspohler, Tommy Keomany, Kristine Davis, Trevor Graff and David Coan
ICES-2023-278	403	New Equipment and Techniques for Steep and Vertical Terrain Access in Planetary EVA Operations	Nate Ball, Daniel Walker and Gino Kahauaele
ICES-2023-298	403	Trades, Architecture, and Design of the Joint Augmented Reality Visual Informatics System (Joint AR) Product	Paromita Mitra, Matthew Miller, Briana Krygier, Sarosh Nandwani, Matthew Noyes, Vishnuvardhan Selvakumar, Amanda Smith and Tyler Garrett
ICES-2023-327	403	A Decision Support System for Extravehicular Operations Under Significant Communication Latency	Timothy McGrath, Jason Norcross, Brianna Sparks, Fernando Figueroa, Jon Morris, Federico Piatti and Jeffrey Somers
ICES-2023-352	403	Developing a Hybrid Spacesuit Simulator as a Research Tool for Assessing Extravehicular Activity Relevant Workload	Yayu Monica Hew, Bradley Hoffmann, Zachary Wusk, Karina Marshall-Goebel and Jeffrey Somers

ICES404: International Space Station ECLS: Systems			
ICES-2023-97	404	Status of ISS Water Management and Recovery	Jill Williamson, Hieu Luong, Kristina Robinson and Jonathan P. Wilson
ICES-2023-435	404	Recent Major Constituent Analyzer Performance on the International Space Station	Ben Gardner, Stephen Denson, Mark Huffman and Tyler Zimmerman
ICES-2023-437	404	International Space Station (ISS) Environmental Control and Life Support (ECLS) System Overview of Events 2022	Steven Balistreri and John Cover
ICES405: Human/Robotics System Integration			
ICES-2023-78	405	A Simulated Air Revitalization Task to Investigate Remote Operator Human-Autonomy Teaming With Communication Latency	Jacob Kintz, Young-Young Shen, Savannah Buchner, Allison Anderson and Torin Clark
ICES-2023-156	405	Roles of Human and Robotic Agents Toward Operating a Smart Space Habitat	Xiaoyu Liu, Amir Behjat, Shirley Dyke, Dawn Whitaker, Julio Ramirez and Ilias Biliotis
ICES-2023-464	405	Development and Testing of Crew Interfaces for an Advanced Unpressurized Exploration Rover	Charles Hanner, Nicolas Bolatto, Daniil Gribok, Spencer Quizon, Rowan Quintero, Ian Welfeld and David Akin
ICES406: Spacecraft Water/Air Quality: Maintenance and Monitoring			
ICES-2023-110	406	Progress on the Organic and Inorganic Modules of the Spacecraft Water Impurity Monitor, a Next Generation Complete Water Analysis System for Crewed Vehicles	Stuart Pensinger, Michael Callahan, Evan Neidholdt, Aaron Noell, Nathan Oborny, Byunghoon Bae, Valeria Lopez, Bruce Hancock, Marianne Gonzalez, Margie Homer, Stojan Madzunkov, Murray Darrach and Richard Kidd
ICES-2023-230	406	Evaluation of Long-Term Microbial Regrowth in Slosh Water Tanks from the International Space Station	Luke Roberson, Jason Fischer, Daniella Saetta, Carolina Franco, Christina Khodadad, Mary Hummerick, Cory Spenn, Daniel Yeh and Melanie Pickett
ICES-2023-333	406	Culture-Independent Fungal Profiling for the International Space Station using Nanopore Sequencing: Method Development	Hang Nguyen, Sarah Stahl-Rommel, Marie G. Sharp, Christian L. Castro and Sarah Castro-Wallace
ICES407: Extravehicular Activity: Emerging Space Suit Technologies			
ICES-2023-32	407	Thinking Outside the Apollo Toolbox: Designing SAMPLERS - Spacesuit Attached Multi-Purpose Lunar EVA Retrieval System	Samuel Stenzel
ICES-2023-239	407	Design Process intended to protect xEMU components from Lunar Dust	Thomas Stapleton, Cinda Chullen, Kelsey Bloom, Otis Walton, Beichuan Yan and Saikat Chakraborty Thakur
ICES-2023-271	407	Conceptual Design for the Advancement of Mechanical Counterpressure Spacesuits	Michelle Kostin
ICES-2023-336	407	Design of an Augmented Reality User Interface for Lunar Extravehicular Activity Operations	Michael Fornito, Nicholas Lopac, Graydon Russell, Joseph Demartini, Riley Flanagan, Lea Miller and Miranda Young
ICES-2023-371	407	Heat Balance Model to Inform Requirements for Martian Spacesuit Architectures	Gabriella Schauss and Allison Anderson
ICES-2023-396	407	Implementing a Biorobotic Spacesuit Glove Solution to Optimize Crew Performance for Planetary Surface Operations	Danielle Carroll, Spencer Dansereau, Taylor Tvrdy, Allison Anderson and Stephen Robinson
ICES-2023-426	407	A Localized Compute Platform to Support EVA Software Applications	Michael Vandi, Larysa Paliashchuk and Ashish Upadhyay
ICES408: ISS US EVA-80 Water Helmet Incident Investigation			
ICES-2023-62	408	EMU Ventilation Loop Simulation and Assessment of Contamination of the EMU Sublimator Hydrophilic Coating	Alex Wickham, Colin Campbell, Michael Humbert and David Wickham
ICES-2023-346	408	Comparative Analysis for EMU Fleet Latent Loading Characterization in Support of US EVA 80 Failure	Noah Andersen
ICES-2023-347	408	Extravehicular Mobility Unit System-Level Model (SINDA EMU) Usage for Operational Mitigations in Support of US EVA 80	Noah Andersen and Bruno Miranda
ICES-2023-355	408	Integrated Computational Fluid Dynamics and Thermal Desktop Thermal Modeling for Assessment of the EMU in Support of ISS EVA 80	Blain Lancaster, Abigail Baukus, Kambiz Andish and Anthony Hanford
ICES-2023-356	408	EMU CO2 Washout Comparative Assessments for the HAB/HAP-E in Support of EVA 80	Moses Navarro, Abigail Baukus and Monica Mah
ICES-2023-402	408	Excess Water in Astronaut Helmet During EVA on ISS: Mitigations with Flight Demonstrations	Mark Weislogel, John Graf, Logan Torres, Oleg Krishcko, Paul Dum, Colin Campbell and Tessa Rundle
ICES-2023-431	408	Assessment of HAB Particulate Tracing in EMU Helmet in Support of EVA 80	Abigail Baukus and Colin Campbell
ICES-2023-432	408	EMU Helmet Free Water Transport Assessment for the HAB in Support of EVA 80	Abigail Baukus and Colin Campbell

ICES500: Life Science/Life Support Research Technologies			
ICES-2023-124	500	Legume Crop Testing for Space	Lashelle Spencer, Jennifer Gooden, Aaron Curry, Takiyah Sirmons, Raymond Wheeler and Matthew Romeyn
ICES-2023-125	500	Novel Microgreen Crop Testing for Space	Lashelle Spencer, Jennifer Gooden, Aaron Curry, Takiyah Sirmons, Raymond Wheeler and Matthew Romeyn
ICES-2023-147	500	ECLSS Technology Roadmap at Spaceship FR	Gregory Navarro, Marie-Christine Desjean and Alexis Paillet
ICES-2023-163	500	XROOTS ISS Tech Demo of Aeroponics and Hydroponics Nutrient Delivery in Microgravity	John Wetzel, Robert Morrow, Guillermo Tellez and Daniel Wyman
ICES-2023-224	500	Assessing the Recycling Potential of Cupriavidus necator for Space Travel: Production of SCPs and PHAs from Organic Wastes	Pierre Joris, Eric Lombard, Gregory Navarro, Alexis Paillet, Nathalie Gorret and Stephane Guillouet
ICES-2023-453	500	SCAMPI Project: Design of an Aquatic Closed Ecological System for Microgravity	Tarek Ben Slimane, Costanza Torchia, Patrick Grubbs, Jorge Galvan Lobo, Alvaro Roper, Jorge Alberto Rodriguez, Joshua Smith, Anatole Berger and Solène Roche
ICES501: Life Support Systems Engineering and Analysis			
ICES-2023-89	501	Human Landing System ECLSS Research and Design	Cody Bahan, Nathan Foote, Kathleen Laughton, Adam Oswald, Aanshi Panchal, Chad Pflieger, Samuel Trux, Stuart Tozer and James Nabity
ICES-2023-169	501	Break-Even Point Analysis of In Situ Resource Utilization for Mars Settlement by SpaceX Starship	Hiroyuki Miyajima
ICES-2023-250	501	Optimal PV and Battery Sizing for a Space Microgrid Near the Lunar South Pole Considering ISRU, Habitat and Water Subsystem Power Demand	Diptish Saha, Najmeh Bazmohammadi, Juan C. Vasquez and Josep M. Guerrero
ICES502: Space Architecture			
ICES-2023-128	502	A Methodology for the Systematic Review of Space Architecture Concepts	Annika Rollock, Danielle DeLatte and Ariel Ekblaw
ICES-2023-149	502	Definition of a Reusable Lunar Habitat to Extend Exploration Range	Gregory Navarro, Alexis Paillet, Sebastien Barde and Marie-Christine Desjean
ICES-2023-172	502	Swarm Habitat: Lava Tube Base Design with Non-Orthogonal Modular Coordination of The Truncated Octahedral Modules	Takashi Mizuguchi and Yashushi Ikeda
ICES-2023-182	502	Anthropocentric Habitation of Mars Through Parametric Design	Chi Lan Huynh, Erin Quigley, Logan Miller and Christopher Hisle
ICES-2023-187	502	XR Testing Framework for Human-System Interaction Design Validation	Vittorio Netti, Albert Rajkumar and Olga Bannova
ICES-2023-189	502	Proposal for a testing standard for Planetary Construction technologies with ISRU	Vittorio Netti and Tara Bisharat
ICES-2023-231	502	Design of Space Music Hall as a Module of Low Earth Orbit Space Station	Kazuki Toma, Shuto Takashita and Shinichi Nakasuka
ICES-2023-253	502	Drop the Base: Biological, ISRU-Based Aleatory Construction System for Martian Habitats	Monika Brandić Lipińska, Martyn Dade-Robertson, Meng Zhang and Lynn J. Rothschild
ICES-2023-270	502	Atlas of Habitats Beyond Earth. Architectural Solutions for Space Applications	Giacomo D'Amico and Marina Tornatora
ICES-2023-294	502	Multi-layered 3D Printed Mars Habitat Proposal. Analysis of Habitability Requirements and Autonomous Building Technologies from the NEST Team's Design at the NASA Centennial Challenge	Jose-Miguel Armijo-Vielma, José Hernández Vargas and Priyanka Naidu
ICES-2023-319	502	Practical Lunar Surface Site Selection Criteria to Optimize Habitat Environmental Control	William O'Hara and Jennifer Matty
ICES-2023-449	502	Simulation-Based Assessment of Hazardous States in a Deep Space Habitat	Luca Vaccino, Kenneth Pritchard, Mohsen Azimi, Shirley Dyke and Alana Lund
ICES-2023-454	502	Developing an Integrated Logistics Infrastructure for Lunar Surface Habitats	David Akin
ICES-2023-458	502	Successful Testing of Advanced Space Habitat	James Kirwan, John Lin, Beth Schaepe, Gerard Valle, Matthew Morgan and Shawn Buckley
ICES503: Radiation Issues for Space Flight			
ICES-2023-365	503	Nuclear Data Needs for GCR Shielding Models	Lawrence Heilbronn
ICES-2023-474	503	Artemis-I - Development and Testing of Radiation Mitigation Strategies for Crewed Missions	Janet Barzilla, Ramona Gaza and Nicholas Stoffle
ICES504: Management of Air Quality in Sealed Environments			
ICES-2023-229	504	Advanced Adsorbents for Ammonia Control in Enclosed Environments	Charles Cummings and Edward Harris

ICES506: Human Exploration Beyond Low Earth Orbit: Missions and Technologies

ICES-2023-170	506	Dynamic Simulation Study on the Effect of Airtightness on the Sensitivity of Air Composition Monitoring in SPACE FOODSPHERE	Hiroyuki Miyajima, Yoshitoki Tanaka, Hidekazu Tsuda and Soichi Mori
ICES-2023-233	506	Passive Deployment Mechanisms for Minimal Composition of Lunar/Martian Base Camp Implanted into Lava Tube	Jun Sato, Saneyuki Kawabata, Tomohiro Yokozeki, Kazuya Saito, Masato Sakurai, Yasuhiro Awata and Nao Hoshinouchi
ICES-2023-242	506	Supporting Exploration Missions by Enabling Exploration Mission System Software	Matthew Miller, James Montalvo, Ben Feist, David Charney, David Rynearson, Jackie Vu, Katie Heinemann, Trey Davis, Stephen Lin, Omar Baig and Cameron Pittman
ICES-2023-255	506	NASA Crew Health & Performance Capability Development for Exploration: 2022 to 2023 Overview	Andrew Abercromby, Grace Douglas, Kent Kalogera, Karina Marshall-Goebel, Jeffrey Somers, Rahul Suresh, Moriah Thompson, Scott Wood, Ralph Fritsche, Emma Hwang, Justin Yang and James Broyan
ICES-2023-259	506	International Space Station as a Testbed for Exploration Environmental Control and Life Support Systems – 2023 Status	Alesha Ridley, Christopher Brown, John Garr, Lynda Gavin, David Hornyak, Katherine Toon, Paul Caradec and Allen Williams
ICES-2023-265	506	Environmental Control and Life Support (ECLS) System Options for Mars Transit and Mars Surface Missions	Zach Bryant, Andrew Choate and David Howard
ICES-2023-300	506	Mission-Scale MOXIE Development Driven Prospects for ISRU and Atmosphere Revitalization	Joseph Hartvigsen, Michele Hollist, Jessica Elwell, S. Elangovan and Gerald Voecks
ICES-2023-312	506	NASA Environmental Control and Life Support Technology Development for Exploration: 2022-2023 Status	Walter Schneider, Arthur Brown, Chris Allen, Melissa McKinley, Imelda Stambaugh, Alesha Ridley, Daniel Barta and Daniel Gazda
ICES-2023-321	506	NextSTEP Appendix A Modular ECLSS Effort Lessons Learned	James Clawson, Daniel Barta, Walter Schneider, Marlon Cox and David Howard
ICES-2023-334	506	Multi-Sensor 3D Data Visualization in Virtual Reality for Planetary Science and Mission Operations	Ferrous Ward, Cody Paige, Jess Todd, Don Derek Haddad, Jennifer Heldmann, Darlene Lim, Dava Newman and Ariel Ekblaw
ICES-2023-349	506	The Roles of Plants in a Commercial Space Habitat	Robert Morrow, John Wetzel, Samuel Moffatt, Matthew Bair and Laura Kelsey
ICES-2023-361	506	Final Report of the COSPAR Meeting Series on Knowledge Gaps in Planetary Protection for Crewed Missions to Mars	J Andy Spry, Bette Siegel, Elaine Seasley and J Nick Benardini
ICES-2023-362	506	Data Collection in Svalbard, Norway to Test the use of Virtual Reality for Lunar and Planetary Surface Exploration	Cody Paige, Don Derek Haddad, Ferrous Ward, Jessica Todd, Gordon R. Osinski, Ariel Ekblaw and Dava Newman
ICES-2023-368	506	Utilizing Gaps and Performance Measures to Inform NASA Environmental Control and Life Support Systems and Crew Health and Performance Technology Decisions	James Broyan, Andrew Abercromby and Alexander Burg
ICES-2023-451	506	Lunar SmartHab Mission Operations and Crew Day-In-The-Life	Kenneth Pritchard, Luca Vaccino, Xiaoyu Liu, Dawn Whitaker, Shirley Dyke and Brian Joyal

ICES509: Fire Safety in Spacecraft and Enclosed Habitats

ICES-2023-18	509	Chemical Challenge Tests on ISS Fire Cartridges	Cristina Muko, Steven Beck, Edgar Hudson, Lawrence Barrett, Adam Korona, Emily Rabel, William Wallace, Spencer Williams and Daniel Gazda
ICES-2023-21	509	A Study of the Kinetics of the CO Oxidation Catalyst in a Human Spaceflight Fire Cartridges as a Method to Understand and Predict Performance	Adam Korona, Lawrence Barrett, Emily Rabel, Cristina Muko, Steven Beck and Edgar Hudson
ICES-2023-24	509	Characterizing Fit Factor of a One Size Fits-Most Emergency Mask using Subjects with Smaller Neck Circumferences	Adam Korona, Emily Rabel, Justine Wiles, Matt Meyer, Alicia Ruiz and Jeff Hahn
ICES-2023-133	509	Limiting Oxygen Concentrations of Burning PMMA Cylinders under External Radiant Heating and Subatmospheric Pressure	Christina Liveretou, Charles Scudiere, Jose Rivera, Carlos Fernandez-Pello, Michael Gollner, Sandra Olson and Paul Ferkul
ICES-2023-171	509	Sooting Behavior in Concurrent and Upward Burning of Cylindrical PMMA-samples	Christian Eigenbrod, Florian Meyer, Hans-Christoph Ries and Jan Heissmeier
ICES-2023-191	509	Upward Flame Spread over a Thin Fabric in Normoxic Atmospheres	Maria Thomsen, Luca Carmignani, Priya Garg, Carlos Fernandez-Pello, Michael Gollner, David Urban and Gary Ruff
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ICES-2023-434	509	Trade Study Considerations for Fire Detection, Suppression and Remediation Systems for Commercial Space Missions	Marit Meyer and Bettylynn Ulrich

ICES510: Planetary and Spacecraft Dust Properties and Mitigation Technologies

ICES-2023-200	510	Flight Environment HEPA Filter Testing for Lunar Dust Removal Capability	Andrew Walcker, Juan Agui, Zach Turner, Robert Green and Gordon Berger
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ICES-2023-277	510	Development of Challenge Aerosols for Testing Filters in Spacecraft Air Revitalization Systems	Robert Green, Gordon Berger, Benjamin Sumlin, R. Vijayakumar and Juan Agui
ICES-2023-285	510	Low Temperature, Durable Siloxane/Epoxy Nanocomposite Coating for Drastic Reduction in Lunar Particulate Adhesion	Lauryn Baranowski, Denis Kissounko, Matt Peppel, Amrita Singh and James Nabity
ICES-2023-322	510	Updated Analysis of Particulate Data from the Airborne Particulate Monitor ISS Payload	Claire Fortenberry and Marit Meyer
ICES-2023-469	510	Cyclone Sub-Micron Particulate Separator	Matthew Haggerty, Matthew Emmons, Andrew Wagner and Michael Cutbirth

ICES511: Reliability for Space Based Systems

ICES-2023-138	511	Coatings for Space-Based Systems: Impacts of Plasma Processes	Richard Clergereaux, Veronica Orlandi, Myrtil Kahn, Gregory Navarro and Alexis Paillet
ICES-2023-183	511	Development of a Damageable ECLSS and Interior-Environment Virtual Testbed Model to Simulate Future Resilient Deep Space Habitats	Seungho Rhee, Zoe Noble, Jaewon Park, Amanda Lial, Laura Collazo Carballude and Davide Ziviani
ICES-2023-433	511	Design and Optimization of a Test Setup for Low Thermal Conductance Measurements	Natalie Walsh, Christopher Ye, Christopher Bertagne, Yoshimi Takeuchi and John McHale

ICES513: Human Health and Performance Analysis

ICES-2023-98	513	An Investigation into the Effect of Liquid Accumulation on Thermo-Physiologic State using an Advanced Moisture Model Coupled with a High Resolution Human Thermal Model	Timofey Golubev, Mark Hepokoski, Kevin Ward, Joel Coffel and Hee Jong Song
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