

# Paper Reference List for ICES 2019 - Boston

Paper #	Session	Paper Title	Authors
ICES-2019-(#)		click on the linked title to access the manuscript	
<b>ICES101: Spacecraft and Instrument Thermal Systems</b>			
2	101	<a href="#">Novel Concept for Detection of a Fluid Flow Fault in a Pumped Fluid Heat Rejection System</a>	Pradeep Bhandari and Tyler Schmidt
3	101	<a href="#">Thermal Control Technologies for Europa Clipper Mission</a>	Pradeep Bhandari, Mark Duran, Razmig Kandilian, Jenny Hua, A.J. Mastropietro, Tyler Schmidt, Woodmansee Paul and Sean Reilly
29	101	<a href="#">Thermal Design and Analysis of Europa Clipper's Radio Frequency Module</a>	Robert Coker
30	101	<a href="#">Thermal Design and Analysis of the GUSTO Gondola</a>	Robert Coker
42	101	<a href="#">Europa Clipper Thermal Control Valve Thermal and Hydraulic Analysis and Development Testing</a>	Razmig Kandilian, Pradeep Bhandari, Arthur Mastropietro, Conan Zhang and Brian Carroll
155	101	<a href="#">Parker Solar Probe Solar Array Cooling System In-Orbit Performance Review</a>	Wei-Lin Cho, Christopher Miller, Mark Zaffetti, Harold Hansen, Patrick Sears, Jonathan O'Neill, Eric Bechard and Gary Stewart
162	101	<a href="#">On Orbit Servicing of LANDSAT-7: Challenges with Building a Thermal Model from Scratch of a Decades Old Satellite</a>	Warren Tolson
299	101	<a href="#">Post Launch and Early Mission Thermal Performance of Parker Solar Probe</a>	Carl Ercol and G. Allan Holtzman
312	101	<a href="#">The Large UV/Optical/Infrared Surveyor Decadal Mission Concept Thermal System Architecture</a>	Kan Yang, Matthew Bolcar, Jason Hylan, Julie Croke, Bryan Matonak, Andrew Jones, Joseph Generie and Sang Park
327	101	<a href="#">Mechanical Design and Stress Analysis Challenges Overcome to Ensure the Structural Integrity of Europa Clipper's Mechanical Pumped Fluid Loop Heat Redistribution</a>	James Burdick, A J Mastropietro, Bertoni Leonardo, Bobby Lui, Brian Carroll, Bryant Gaume, Conan Zhang and Daniel Kolenz
370	101	<a href="#">Partnering with Industry: Lessons Learned from the Wide Field Instrument on the Wide Field InfraRed Survey Telescope Mission</a>	Hume Peabody and Jeanette Domber
<b>ICES102: Thermal Control for Planetary and Small Body Surface Missions</b>			
4	102	<a href="#">Thermal Design of a Europa Lander Mission Concept</a>	Tyler Schmidt and Pradeep Bhandari
28	102	<a href="#">Thermal Design of the Sample Handling Assembly in the Sampling and Caching Subsystem on the Mars 2020 Rover</a>	Keith Novak, Matthew Redmond, Jason Kempenaar, Chern-Jiin Lee and Takuro Daimaru
34	102	<a href="#">InSight Mars Mission: SEIS Instrument Thermal Design, Testing, and Support to In-Flight Operations and Performances</a>	Maxime Andre, Clement Brysbaert and Gabriel Pont
45	102	<a href="#">Thermal Testing of a Mars 2020 Enhanced Engineering Camera</a>	Kaustabh Singh, Jason Kempenaar and Keith Novak
147	102	<a href="#">Demonstration of a Low Resource Lyophilizer Prototype for Spaceflight Applications</a>	Philipp Hartmüller, Alexander Hoehn and Bruce Hammer
212	102	<a href="#">24 Hour Consumable-based Cooling System for Venus Lander</a>	Kuan-Lin Lee and Calin Tarau
249	102	<a href="#">Thermal Design and Validation of the Mars 2020 Gas Dust Removal Tool (gDRT)</a>	Edgardo Farias, Elizabeth Jens, Barry Nakazono, Jason Kempenaar and Keith Novak
<b>ICES103: Thermal and Environmental Control of Exploration Vehicles and Habitats</b>			
166	103	<a href="#">Membrane Microgravity Air Conditioner Conceptual Design Progress and Long Duration Test Results</a>	John Fricker, Roger Lottridge and Scott Hansen
187	103	<a href="#">A Supported Liquid Membrane System for Steady State CO2 Control in a Spacecraft Cabin</a>	David Wickham, James Nabity, Jordann McCarty and Robert Aaron
331	103	<a href="#">Investigation and Mitigation of Hydraulic Noise in the Orion Service Module ATCS Fluid Control Assembly</a>	Diego Mugurusa and Nicholas Van Derzee
<b>ICES104: Advances in Thermal Control Technology</b>			
22	104	<a href="#">Application and Development of Atomic Layer Deposition Techniques to Improve Thermo-optical Coatings for Spacecraft Thermal Control and Advanced Optical</a>	Vivek Dwivedi, Mark Hasegawa, Raymond Adomaitis, Hossein Salami, Alan Uy, Corinne Grob and Aarathi Vadapalli
69	104	<a href="#">Breadboard Testing of a HiPeR Inflatable Radiator (HiPeR INFRA)</a>	Tom de Groot, Boudewijn Schwieters, Roel van Benthem, Johannes van Es and Aswin Pauw
72	104	<a href="#">Study on thermal stabilization of a GEO-stationary telescope baffling system by integral application of phase change material</a>	Kevin Bergmann, Josefine Gräbener, Dominik Wild, Hendrik Ulfers and Markus Czupalla
75	104	<a href="#">Development of a Low Specific Speed, Centrifugal, Mini Pump for a Two Phase Mechanically Pumped Fluid Loop</a>	Diego Mugurusa, Michael Amer, Caitlin Patruski, Gary Adamson, Mark Neumann and Harold Hansen
137	104	<a href="#">Quantitative analysis on the radiative and conductive heat transfer through Space-borne MLI based on theoretical approach</a>	Jin-Soo Chang, Seung-Uk Yang, Yong-Sang Jung and Hwanil Huh
190	104	<a href="#">Development of a 3D Printed Loop Heat Pipe</a>	Bradley Richard, William Anderson, Joel Crawmer, Merryl Augustine and Chien-Hua Chen
211	104	<a href="#">Variable View Factor Two-Phase Radiator</a>	Andrew Lutz, Calin Tarau and Srujan Rokkam
218	104	<a href="#">3D Printed Thermal Management System for the Next Generation of Gallium Nitride based Solid State Power Amplifiers</a>	Mohammed Ababneh, Calin Tarau and William Anderson
240	104	<a href="#">Hybrid Manufacturing of Custom Heat Acquisition Hardware For Tight Package Integration and Targeted Applications</a>	Thomas Cognata, Chad Bower and Norman Hahn
243	104	<a href="#">Condensate Separator for Microgravity Conditions (COSMIC) for Two-Phase Separation</a>	Brittany Zimmerman and Thomas Cognata
256	104	<a href="#">Biomimicry Based Design for Advanced Thermal Control System on Orion Spacecraft</a>	Paola Gonzalez Marquez and Albert Rajkumar
292	104	<a href="#">Development and Testing of Re-Deployable Radiator for Deep Space Exploration Technology Demonstrator, DESTINY+</a>	Yuki Akizuki, Hoshi Nagano, Tomihiro Kinjo, Kenichiro Sawada, Hiroyuki Ogawa, Takeshi Takashima, Kazutaka Nishiyama, Hiroyuki Toyota, Kazuki Watanabe and Takeshi Kuratomi
306	104	<a href="#">Phase Change Material Heat Accumulator for the HEXAFly Hypersonic glider</a>	Jean-Paul Collette, Pierre Rochus, Johan Steelant, Romain Peyrou-Lauga, Nicolas Nutal, Jean-Yves Andro, Riccardo Nadalini and Pedro Romero Fernandez
<b>ICES105: Thermal Standards and Design/Development Practices</b>			
213	105	<a href="#">Propylene Glycol Water Filter Sizing, Design, and Testing for Minimal Maintenance in Dream Chaser Cargo System Active Thermal Control</a>	Cheryl Perich, Stein Cantrell-Avloes and Marissa Pinnola
377	105	<a href="#">Follow-on Studies Using the Voyager Spacecraft Thermal Model</a>	William Ledeboer, Gordon Cucullu, Juan Villalvazo, Todd Barber and Enrique Medina

## ICES106: Thermal Control for Space Launch Vehicles, Propulsion, and Nuclear Power Systems

303	106	<a href="#">Thermal Control of the Cryogenic Upper Stage of Ariane 6</a>	Rick Burow, Daniel Just, Anna Adamczyk, Cord Jagels, Alexander Milke, Christian Wendt and Helge Kneistler
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## ICES107: Thermal Design of Microsatellites, Nanosatellites, and Picosatellites

94	107	<a href="#">NEA Scout Thermal Control</a>	Elijah Stewart and Brian O'Connor
143	107	<a href="#">Thermal Design and On-Orbit Data Evaluation of the 3U-class CubeSat TRICOM-1R, Correlation Analysis between the Attitude and Thermal Measurement</a>	Kikuko Miyata, Jihoon Kim, Hosei Nagano, Yoshihide Aoyanagi, Takeshi Matsumoto and Shinichi Nakasuka
193	107	<a href="#">Thermal Design and Validation for a 6U Deep Space CubeSat EQUULEUS under Constraints Tightly Coupled with Orbital Design and Water Propulsion System</a>	Shuhei Matsushita, Toshihiro Shibukawa, Keidai Iiyama and Ryu Funase
294	107	<a href="#">Fabrication and Testing of CFRP embedded Oscillating Heat Pipe for Microsatellite</a>	Kanako Noda, Ai Ueno and Hosei Nagano
335	107	<a href="#">Contact Conductance in Common CubeSat Stacks</a>	Philipp Hager, Tobias Flecht, Katja Janzer, Laura Leon Perez, Hugo Brouwer and Martin Jonsson

## ICES108: Thermal Control of Cryogenic Instruments and Optical Systems

276	108	<a href="#">Thermal Design and Analysis of Cooling SOFIA HIRMES to 4K Cryogenic Temperature using Cryocooler</a>	Michael Choi
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## ICES201: Two-Phase Thermal Control Technology

1	201	<a href="#">Lightweight Two-Phase Pumped Cooling System with Aluminium Components produced with Additive Manufacturing</a>	Henk Jan van Gerner, Marc de Smit, Johannes van Es and Maxime Migneau
47	201	<a href="#">Study on Two-Phase Thermal Hydraulics in Porous Structure and Design Method of Capillary Evaporator</a>	Masahito Nishikawara, Yuya Yamada, Shohei Tomita and Hideki Yanada
50	201	<a href="#">A Mechanically Pumped Two-Phase Fluid Loop for Thermal Control Based on the Capillary Pumped Loop</a>	Benjamin Furst, Stefano Cappucci, Eric Sunada and Takuro Daimaru
55	201	<a href="#">Initial Evaluation of On-orbit Experiment of Loop Heat Pipe on ISS</a>	Atsushi Okamoto, Takeshi Miyakita and Hosei Nagano
89	201	<a href="#">Linear Stability Analysis for LHP Operations</a>	Triem T. Hoang
112	201	<a href="#">Thermal Performance of an Ammonia Heat Pipe under Reflux Mode</a>	Jentung Ku
144	201	<a href="#">An Experimental Attempt to Improve Start-up Characteristics of Oscillating Heat Pipe with Check Valves</a>	Makiko Ando, Atsushi Okamoto, Kousuke Tanaka, Rui Matsutomo, Nao Inoue, Hiroki Nagasawa and Hiroki Nagai
176	201	<a href="#">High Heat Flux Two-Phase Thermal Control System using Non-Uniform Capillary Evaporator</a>	Mohammad Borumand and Gisuk Hwang
206	201	<a href="#">Bimodal, Thin Wick Structures for High Heat Flux Two-Phase Thermal Control Systems</a>	Nathan Abu, Jacob Keese and Gisuk Hwang
234	201	<a href="#">Additive Manufacturing of Thin Wick Structures using Microsecond Pulse Laser</a>	Mahmood Bashir, Krishna Sit, Rajeev Nair and Gisuk Hwang
325	201	<a href="#">Development of an Evaporator Using Porous Wick Structure for a Two-Phase Mechanically Pumped Fluid Loop</a>	Takuro Daimaru, Benjamin Furst, Stefano Cappucci, Eric Sunada and Gajanana Birur
343	201	<a href="#">Development of a Miniature, Reliable Ammonia Pump for Spaceborne Two-Phase Pumped Loops</a>	Weibo Chen, Thomas M. Conboy and Gregory Daines
402	201	<a href="#">Charging Considerations Effects in Ground Testing Loop Heat Pipes</a>	Brian d'Entremont and Jay Ochterbeck

## ICES202: Satellite, Payload, and Instrument Thermal Control & Thermal Testing

19	202	<a href="#">BepiColombo MTM First Flight Temperature Results</a>	Bernd Weinert, Juergen Schilke and Daniele Stramaccioni
20	202	<a href="#">JUICE (Jupiter Icy moons Explorer) MAG-Boom Thermal Design and early Thermal Verification</a>	Romain Peyrou-Lauga and Janire Zabaleta Araujo
27	202	<a href="#">The Challenges of Thermal Testing and Correlation of Blackbody Cavities</a>	Katherine Ostojic, Daniel Peters and David Smith
48	202	<a href="#">JUICE (Jupiter Icy Moon Explorer) Instruments Thermal Control and Interface</a>	Romain Peyrou-Lauga and Patrick Rouchit
91	202	<a href="#">BepiColombo "MIO" in-orbit thermal control performance results from LEOP and NECP</a>	Hiroyuki Ogawa
97	202	<a href="#">The Launch and Commissioning of BepiColombo MPO</a>	Andrea Ferrero, Domenico Battaglia, Tiziano Malosti, Juergen Schilke, Bernd Weinert and Daniele Stramaccioni
178	202	<a href="#">Optimized Phase Change Material Module for Thermal Regulation of Cycled Dissipative Units</a>	Jean-Paul Dudon, Martin Raynaud, Julien Bosse, Paul Atinsounon, Michele Ferrier, David Valentini and Gilles Blanc
184	202	<a href="#">SPeXone polarimeter instrument thermal design</a>	Rob van Brakel, Aaldert van Amerongen, Jeroen Rietjens, Marc Oort and Jan Doornink

## ICES204: Bioregenerative Life Support

84	204	<a href="#">EDEN ISS Rack-like food production unit: results after mission in Antarctica</a>	Giorgio Boscheri, Cesare Lobascio, Paul Zabel, Giovanni Marchitelli and Antonio Saverino
95	204	<a href="#">PBR@LSR: the Algae-based Photobioreactor Experiment at the ISS – Configuration and Operations</a>	Gisela Detrell, Harald Helisch, Jochen Keppler, Johannes Martin, Oliver Angerer, Astrid Adrian, Reinhold Ewald and Stefanos Fasoulas
106	204	<a href="#">From Project Mercury to the Breadboard Project</a>	William Knott, Ralph Prince, John Sager, Raymond Wheeler and Thomas Dreschel
138	204	<a href="#">Crewtime in a Space Greenhouse based on the Operation of the EDEN ISS Greenhouse in Antarctica</a>	Paul Zabel, Conrad Zeidler, Vincent Vrakking, Markus Dorn and Daniel Schubert
164	204	<a href="#">Dwarf Tomato and Pepper Cultivars for Space Crops</a>	Lashelle Spencer, Mary Hummerick, Gary Stutte, Takiya Simons, Thomas Graham, Gioia Massa and Raymond Wheeler
210	204	<a href="#">Conceptual Development of a Hybrid Life Support System Integrating a Biological Wastewater Processor with a Plant Growth Unit</a>	W. Andrew Jackson and Robert Morrow
258	204	<a href="#">A Predictive Model for The Production Rates Of A Bioregenerative Life Support System</a>	Sean Gellenbeck, Roberto Furfaro, Gene Giacomelli and Robert Lepore
259	204	<a href="#">Mushrooms on Mars: A Subsystem for Human Life Support</a>	Sean Gellenbeck, Gene Giacomelli and Barry Pryor
342	204	<a href="#">Crop Readiness Level (CRL): A Scale to Track Progression of Crop Testing for Space</a>	Matthew Romeyn, Lashelle Spencer, Gioia Massa and Raymond Wheeler

## ICES205: Advanced Life Support Sensor and Control Technology

67	205	<a href="#">ANITA2 Trace Gas Analyser for the ISS - Flight Model Finalization and ground test results</a>	Michael Gisi, Armin Stettner, Timo Stuffer, Atte Honne, Kristin Kaspersen, Kari Bakke, Johannes Witt and Pierre Rebevre
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200	205	<a href="#">International Space Station Smart Sample Concentrator for Microbial Monitoring of Potable Water</a>	Alec Adolphson, Michael Hornback, Andy Page, Amy Zimmer-Faust and John Griffith
254	205	<a href="#">Concepts for a Total Organic Carbon Analyzer for Exploration Missions</a>	Chad Morrison, Christopher McPhail, Michael Callahan and Stuart Pensinger
315	205	<a href="#">Initial Trade Study for In-line Silver Sensor for Spacecraft Potable Water Systems</a>	Phillip Hicks, Jason Nelson and Michael Callahan
321	205	<a href="#">The Technology Demonstration of the Spacecraft Atmosphere Monitor</a>	Steven Schowalter, Stojan Madzunkov, Murray Darrach, Ernesto Diaz, Brad Moore, Jurij Simic, Dragan Nikolic and Byunghoon Bae
358	205	<a href="#">Tunable Laser Absorption Spectroscopy for Human Spaceflight</a>	Christopher Matty and Lance Christensen
366	205	<a href="#">Design of an Aerodynamic Lens for PM2.5 Chemical Composition Analysis</a>	Dragan Nikolic, David Keicher and Fa-Gung Fan
405	205	<a href="#">The Combustion Product Monitor Instrument for the Spacecraft Fire Safety Demonstration Project</a>	Mathieu Fradet, Ryan Briggs and Rudi Bendig

### ICES206: Manned Orbiting Infrastructures, Habitats, Space Station and Payload Thermal Control

31	206	<a href="#">The International Space Station (ISS) Port 1 (P1) External Active Thermal Control System (EATCS) Ammonia Leak</a>	Darnell Cowan, Timothy Bond and Jordan Metcalf
85	206	<a href="#">Preparing for Columbus 3-Way Valve Replacement: Telemetry Analysis and Thermo-Hydraulic Evaluations</a>	Savino De Palo

### ICES207: Thermal and Environmental Control Engineering Analysis and Software

74	207	<a href="#">Uncertainty Quantification Using Reduced-Order Models</a>	Derek Hengeveld and Jacob Moulton
167	207	<a href="#">Modeling Lunar and Martian Environments with Simcenter 3D Space Systems Thermal</a>	Armin Veshkini, Kevin Lee, Chris Jackson and Christopher Pye

### ICES300: ECLSS Modeling and Test Correlations

76	300	<a href="#">Numerical Simulation of Toilet System Air Flow Characteristics in the International Space Station</a>	Chang Son, Nikolay Ivanov, Evgueni Smirnov and Denis Telnov
86	300	<a href="#">A System Dynamics Model of a Hybrid Life Support System</a>	Paul Zabel and Martin Tajmar
186	300	<a href="#">Risk Analysis Associated with Loss of Toxic Gases during Orion Landing and Recovery Operations</a>	Mic Swickrath, Moses Navarro and Imelda Stambaugh
207	300	<a href="#">Dynamic Simulation of Performance and Mass, Power, and Volume prediction of an Algal Life Support System</a>	Thomas Ruck, Tobias Niederwieser and Daniel Pütz
235	300	<a href="#">The Dynamics of Massively Parallel Open Capillary Channel Systems for Direct-Contact Liquid Sorbent Applications in Spacecraft Life Support</a>	Samuel Mohler, Mark Weislogel, John Graf and Laura Soto
238	300	<a href="#">Dynamic Modeling of Gaseous Multicomponent Trace Contaminant Adsorption</a>	Stephanie Roohi, Kevin Lange, Jay Perry and Matthew Kayatin
368	300	<a href="#">An agent-based model for high-fidelity ECLSS and bioregenerative simulation.</a>	Kai Staats, Iurii Milovanov, John Adams, Gregory Schoberth, Thomas Curry, Katherine Morgan, Jason Deleeuw and Gene Giacomelli
394	300	<a href="#">Development and Characterization of a LiOH Air Regeneration Model in Thermal Desktop</a>	Cheyne Worn and John Keener

### ICES301: Advanced Life Support Systems Control

133	301	<a href="#">Hierarchical Determination of Repair Order for Complex Material Circulation Control on Life Support System</a>	Masakatsu Nakane and Hiroyuki Miyajima
196	301	<a href="#">Rapid Determination of Total Organic Carbon (TOC) in Water Systems</a>	Badawi Dweik, Katherine Harrison and Avni Argun
244	301	<a href="#">Simulation Study of Environmental Control and Life Support System Design for Deep Space Exploration</a>	Reiji Moroshima, Eriko Moriyama, Takuma Terao, Ayako Taguchi, Tomofumi Hirotsuki, Samuel Eshima and Hiroyuki Miyajima

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

5	302	<a href="#">CO2 Removal for the International Space Station – 4-Bed Molecular Sieve Material Selection and System Design</a>	Gregory Cmarik and James Knox
41	302	<a href="#">Spacecraft Carbon Dioxide Deposition Subscale System Design and Test</a>	Grace Belancik, Darrell Jan and Roger Huang
58	302	<a href="#">The Impacts of Cabin Atmosphere Quality Standards and Control Loads on Atmosphere Revitalization Process Design</a>	Jay Perry
73	302	<a href="#">Ammonia Stability in a Simulated Trace Contaminant Rich Cabin Environment</a>	Matthew Kayatin and Jay Perry
83	302	<a href="#">Development of a CO2 Reduction Catalyst with High Temperature Tolerance</a>	Asuka Shima, Masato Sakurai, Keiichiro Moriwaki, Miyuki Kobayashi and Takayuki Abe
103	302	<a href="#">Hydrogen Recovery by Methane Pyrolysis to Elemental Carbon</a>	Stephen Yates, Amanda Childers, Nicholas Brom, Charles Lo, Sean Skomurski and Morgan Abney
105	302	<a href="#">Results from the Plasma Pyrolysis Assembly (PPA) Zero-g Flight Experiment</a>	Richard Wheeler, John Holtsnider, Ryan Olson, Ross Dewberry, Zachary Greenwood and Cara Black
107	302	<a href="#">Advanced Oxygen Generation Assembly for Exploration Missions</a>	Kevin Takada, Steven Van Keuren, Luis Velasquez, Phillip Baker and Stephen McDougle
141	302	<a href="#">Preliminary Study of CO2 Electrolysis in Ionic Liquid</a>	Masato Sakurai, Asuka Shima, Kazuyuki Iwasaki, Yoshiyuki Sometani, Takuya Goto, Yasuhiro Fukunaka and Mitsuhiro Kanakubo
150	302	<a href="#">Closed-Loop Hydrogen Recovery Enabled by Electrochemical Hydrogen Separation</a>	Karen Murdoch, Zachary Greenwood, Remi Blanchard, Thomas Stracensky, Manav Sharma, Sanjeev Mukerjee, Ryan Pavlicek and Emory S. DeCastro
153	302	<a href="#">Electrochemical Solutions for Advanced Life Support</a>	Robert Roy, Christopher Ellithorpe, Karen Murdoch, Timothy Myles, Ashley Wilson and John Graf
174	302	<a href="#">A Thermally-Regenerated Solid Amine CO2 Removal System Incorporating Water Vapor Recovery and Ullage Air Recovery</a>	Holden Ranz, Steven Dionne and John Garr
219	302	<a href="#">Scale-up of the Carbon Dioxide Removal by Ionic Liquid Sorbent (CDRILS) System</a>	Phoebe Henson, Rebecca Kamire, Stephen Yates, Ted Bonk, David Loeffelholz, Rehan Zaki, Eric Fox, William Kaukler and Christopher Henry
250	302	<a href="#">Highly Efficient Closed-Loop CO2 Removal System for Deep-Space ECLSS</a>	Ambalavanan Jayaraman, Margarita Dubovik, Sarah Devoss, Arturo Hernandez-Maldonado, Bethzaely Fernandez-Reyes, Silvana Urcia-Romero, Paola A Baldaguez-Medina and Carlos E Tra-My Justine Richardson and Darrell Jan
318	302	<a href="#">Current Development Status of the Temperature Swing Adsorption Systems and Updated Trade Study Results</a>	Giraldo Alvarez, Geoff DeGraff, Michael Swickrath, Grace Belancik and Jeffrey Sweterlitsch
320	302	<a href="#">Continued Development of a Liquid Amine Carbon Dioxide Removal System for Microgravity Applications</a>	John Graf
326	302	<a href="#">Mapping the Capabilities and Attributes of Solid Oxide Electrochemical Systems to Human Spaceflight Needs</a>	John Graf
378	302	<a href="#">Advanced Glass Seal for Electrochemical Oxygen Separation-Compression Device</a>	Michael Reisert, Ashish Aphale, Junsung Hong, Manoj Mahapatra and Prabhakar Singh

379	302	<a href="#">Solid State Electrochemical Oxygen Separation and Compression</a>	Michael Reisert, Ashish Aphale, Dale Taylor, John Graf, Prabhakar Singh, Boxun Hu, Su Jeong Heo and Junsung Hong
380	302	<a href="#">Capture of Trace Airborne Contaminants: Application to Electrochemical Systems</a>	Ashish Aphale, Michael Reisert, Junsung Hong, Su Jeong Heo, Boxun Hu and Prabhakar Singh
<b>ICES303: Physio-Chemical Life Support - Water Recovery &amp; Management Systems - Technology and Process Development</b>			
63	303	<a href="#">Biocontamination Integrated Control of Wet Systems for Space Exploration (BIOWYSE) – Testing campaign results</a>	Ilaria Locantore, Giorgio Boscheri, Vincenzo Guarneri, Giovanni Marchitelli, Antonio Saverino and Cesare Lobascio
70	303	<a href="#">Changes in Chemical Composition of ISS Archive Water Samples from Collection to Analysis</a>	William Wallace, Edgar Hudson, Brandon Dunbar, Tanner Hamilton, Sarah Wallace and Daniel Gazda
109	303	<a href="#">Evaluation of Biofilm Inhibitors for the Environmental Control and Life Support Water Recovery System</a>	Wendy Williams, Layne Carter, Mononita Nur and Cynthia Buzell
117	303	<a href="#">Thermoelectric Membrane Distillation System Engineering Design Improvement Concepts</a>	Jurek Parodi, Jeffrey Lee, Serena Trieu and Greg Pace
118	303	<a href="#">Feasibility of Ultraviolet Technology to Disinfect Spacecraft Water Systems</a>	Audry Almengor, Susan Gilbert, Kristina Todd, Niklas Adam, Michael Callahan, C. Mark Ott and Anthony Hanford
124	303	<a href="#">BioMoSS: Biocidal MoS2 for Disinfection of Spacecraft Potable Water Systems</a>	Lance Delzeit and John Vance
125	303	<a href="#">Mitigation of Silver Ion Loss from Solution by Polymer Coating of Metal Surfaces</a>	John Vance and Lance Delzeit
146	303	<a href="#">Status of the Small Water Recovery Unit Breadboard - Performance Evaluation</a>	Maria Salud Camilleri-Rumbau, Jörg Vogel, Kim Kleinschmidt, Hans Henrik Dahlmann and Maja Bender Tommerup
152	303	<a href="#">Water Supply of Long-Term Space Flights on the Basis of Physico-Chemical Processes for Water Regeneration</a>	Petr Andreychuk, Sergey Romanov, Alexander Zeleznyakov, Leonid Bobe, Alexey Kochetkov, Alexander Tsygankov, Yu.E. Sinyak and Dmitry Arakcheev
191	303	<a href="#">Membrane Distillation Coupled Photocatalytic Reactor for Water Reclamation During Space Travel</a>	Krishnaswamy Rangan, Jacob Coppage-Gross, Jordan Terrazas and Tirumalai Sudarshan
203	303	<a href="#">Passive no moving parts capillary solutions for spacecraft life support systems</a>	Mark Weislogel and Ryan Jenson
222	303	<a href="#">On-Demand Non-Contact Distillation: Low-g Demonstrations of a Leidenfrost Waste-Water Processor</a>	Rawand Rasheed and Mark Weislogel
271	303	<a href="#">Investigation of Biofilm Formation and Control for Spacecraft – An Early Literature Review</a>	Angie Diaz, Wenyan Li, Luz Calle, Michael Callahan and Tesia Irwin
272	303	<a href="#">Silver Foam as Long-Term Passive Biocide for Potable Water Systems</a>	Tesia Irwin, Wenyan Li, Jerry Buhrow, Angie Diaz, Luz Calle and Michael Callahan
273	303	<a href="#">Effects of Surface Treatments on Stainless Steel 316 Exposed to Potable Water Containing Silver Disinfectant</a>	Wenyan Li, Jerry Buhrow, Angie Diaz, Tesia Irwin, Luz Calle and Michael Callahan
340	303	<a href="#">Rapid and Reliable Startup of Biological Wastewater Treatment Systems in Space</a>	Bill Cumbie, John Whitelaw, Fei Dai, Suzanne Zaremski, Kevin Gilmore, Matias Vanotti and Charles Bott
341	303	<a href="#">Biological Treatment of Space Habitation Waste Waters using a Two Stage Reactor</a>	Bill Cumbie, John Whitelaw, Fei Dai, Holly Anne Matel and W. Andrew Jackson
345	303	<a href="#">Development of a Personal Water Reclamation System (PWRS)</a>	Michael Flynn, Jurek Parodi, Jaione Romero-Mangado, Ofir Stefanson, Hali Shaw and Seth Pedersen
<b>ICES304: Physio-Chemical Life Support - Waste Management Systems - Technology and Process Development</b>			
128	304	<a href="#">Demonstration of Plasma Assisted Waste Conversion to Gas</a>	Anne Meier, Malay Shah, Katerina Quinn and Kenneth Engeling
129	304	<a href="#">Microgravity Experimentation of Long Duration Space Mission Waste Conversion</a>	Malay Shah, Anne Meier and Jaime Toro Medina
154	304	<a href="#">Exploration Toilet Integration Challenges on the International Space Station</a>	Melissa Borrego, Yadira Zaruba, James Broyan, Melissa McKinley and Shelley Baccus
159	304	<a href="#">Additive Manufacturing Fan Housings for the Universal Waste Management System Using the Electron-Beam Powder Bed Fusion Process</a>	Samuel Anderson and Timothy Boysen
189	304	<a href="#">Membrane Distillation Bags for Water Recovery in Trash Compaction and Processing Systems</a>	Krishnaswamy Rangan, Jacob Coppage-Gross, Jordan Terrazas, Michael McHale and Tirumalai Sudarshan
285	304	<a href="#">Space Mission Trash Processing Operational and Technical Limits</a>	Jeffrey Lee, Kevin Martin, Jeffrey Feller, Gregory Pace, Jurek Parodi, Serena Trieu, Ali Kashani and Ben Helvensteijn
291	304	<a href="#">Operational Data for a Full Scale Prototype Torrefaction Processing Unit (TPU) for Spacecraft</a>	Michael Serio, Marek Wojtowicz, Joseph Cosgrove, Thomas Stapleton and Jeffrey Lee
<b>ICES305: Environmental and Thermal Control of Commercial and Exploration Spacecraft</b>			
13	305	<a href="#">Dormancy Should Be Avoided for Mars and Deep Space Recycling Life Support</a>	Harry Jones
227	305	<a href="#">Photoelectric Smoke Detector Performance at Particle Sizes Representative of Smoke in Microgravity</a>	Thomas Horn, Katie Tiedrich and Mclain Cowan
308	305	<a href="#">Environmental Control and Life Support Module Architecture for Deployment across Deep Space Platforms</a>	Jonathan O'Neill, Jason Bowers, Roger Corallo, Miguel Torres and Thomas Stapleton
372	305	<a href="#">Water Removal Performance Degradation of Nafion Due to Ammonia Loading in Representative Orbital Environments</a>	Joshua Hecht, Barry Finger, John Lumpkin, Elizabeth Bowman, Dave Williams and Chau Pham
<b>ICES307: Collaboration, Education Outreach, and Public Engagement</b>			
52	307	<a href="#">Furthering Inclusion of Minority Serving Institutions (MSIs) in the Johnson Space Center (JSC) Small Business Innovation Research (SBIR) / SBIR Technology Transfer (STTR)</a>	Doug Goodman, Kathryn Packard and James Whittington
96	307	<a href="#">LSS design tool for the Space Station Design Workshop at the Institute of Space Systems – University of Stuttgart</a>	Gisela Detrell and Reinhold Ewald
122	307	<a href="#">U.S. Spacesuit Knowledge Capture – Sharing Knowledge through Lessons Learned</a>	Cinda Chullen and Vladenka Oliva
391	307	<a href="#">NASA Centennial Challenges Program: A crowdsourcing tool to advance life support technologies for future NASA missions</a>	Monsi Roman, Molly Anderson, Angela Herbet, Christopher Frangione and Jennifer Bravo
<b>ICES308: Advanced Technologies for In-Situ Resource Utilization</b>			
33	308	<a href="#">Improved Electrostatic Precipitator and Ionic Pump in Martian Environment</a>	Hiroyuki Kawamoto
38	308	<a href="#">In-Situ Resource Utilization for Electrochemical Generation of Hydrogen Peroxide for Disinfection</a>	Santosh Vijapur, Timothy Hall, E. Jennings Taylor, Dan Wang, Stephen Snyder, Brian Skinn, Carlos Cabrera, Armando Peña Duarte and Jeffrey Sweterlitsch
40	308	<a href="#">Experimental Configuration and Preliminary Results of Testing a Rapid Cycle Adsorption Pump for Martian CO2 Acquisition</a>	Jared Berg, Anthony Iannetti and Hashmatullah Hasseeb
77	308	<a href="#">Study of Sabatier Catalyst Performance for a Mars ISRU Propellant Production Plant</a>	Carolina Franco, Robert Devor, Sarah J. Snyder, Elspeth M. Petersen and Paul Hintze
110	308	<a href="#">Parametric Propulsion using Titanic Conditions</a>	Zain Koita

182	308	<a href="#">Chemical Lidar Science Payload for the Lunar Volatile and Mineralogy Mapping Orbiter</a>	Roman Kruzelecky, Piotr Murzionak, Jonathan Lavoie, Ian Sinclair, Gregory Schinn, Yang Gao, Craig Underwood, Edward Cloutis, Christopher Bridges, Roberto Armellini, Andrea Luccafabris, Mike Daly, Amélie St-Amour, Jean de Lafontaine and Johan Leijtens
247	308	<a href="#">Unitized Regenerative Solid Oxide Stack</a>	Saurabh Vilekar, Christian Junaedi, Eric Allocco, Zhan Gao and Subir Roychoudhury
252	308	<a href="#">Development of Highly Efficient Mars ISRU CO2 Recovery System</a>	Gokhan Alptekin, Ambalavanan Jayaraman, Trevor Haanstad and Sarah Devoss
257	308	<a href="#">OxEon Energy Demonstration of Manned-Mission Scale ISRU Process Systems</a>	Joseph Hartvigsen, S Elangovan and Lyman Frost
264	308	<a href="#">Redox Tolerant Cathode for Solid Oxide Electrolysis Stacks</a>	S Elangovan, Joseph Hartvigsen, Dennis Larsen, Tyler Hafen and Megan Adams
381	308	<a href="#">Carbon Resistant Electrode for Direct Utilization of Hydrocarbon Fuels in Elevated Temperature Solid State Electrochemical Systems</a>	Boxun Hu, Seraphim Belko, Junsung Hong, Ashish Aphale, Michael Reisert, Rajesh Kumar, Avinash Dongare and Prabhakar Singh

### ICES400: Extravehicular Activity: Space Suits

25	400	<a href="#">Advanced Testing of an Intravehicular Activity Space Suit</a>	Theodore Southern and Nikolay Moiseev
44	400	<a href="#">Design and Control of Reduced Power Actuation for Active-Contracting Orthostatic Intolerance Garments</a>	Rachael Granberry, Santo Padula, Kevin Eschen, Julianna Abel and Brad Holschuh
99	400	<a href="#">Range of Motion Evaluation of a Final Frontier Design IVA Spacesuit using Motion Capture</a>	Ryan Kobrick, Nicholas Lopac, Chase Covello, Michael Fornito II, Benjamin Banner, Theodore Southern and Nikolay Moiseev
119	400	<a href="#">Revisiting the Mark III/AX-5 Suit "Fly-Off": Lessons Learned Applicable to Modern-Day Suits</a>	David Akin
173	400	<a href="#">The "Space Activity Suit" – A Historical Perspective and A Primer On The Physiology of Mechanical Counter-Pressure</a>	Shane Mcfarland, Amy Ross and Robert Sanders
179	400	<a href="#">Development of a Custom Space Suit for Orion</a>	Shane Jacobs, Donald Tufts, Daniel Green and Dustin Gohmert
185	400	<a href="#">NASA Advanced Space Suit Pressure Garment System Status and Development Priorities 2019</a>	Amy Ross, Richard Rhodes and Shane Mcfarland
277	400	<a href="#">Development and Testing of a 3D-Printed Spacesuit Elbow Assembly</a>	Harrison Bartlett, Joe Bowser, Carlos Callejon-Hierro, Sarah Garner, Lawrence Guloy, Christina Hnatov, Jonathan Kalman, Baram Sosis and David Akin
298	400	<a href="#">Urine Removal from Suited Crew in Orion Vehicle Depressurization Scenario</a>	Cory Kaufman, Samuel Anderson and Kirstyn Johnson
334	400	<a href="#">System Design for Tensioning Limb Sections in a Mechanical Counter Pressure Spacesuit</a>	Akshay Kothakonda, Logan Kluis and Dava Newman
337	400	<a href="#">Testing of the NASA Exploration Extravehicular Mobility Unit Demonstration (xEMU Demo) Architecture at the Neutral Buoyancy Laboratory</a>	Kristine Davis and Ian Meginnis
352	400	<a href="#">Development of Novel Helmet Support Assembly for NASA Orion Crew Survival Suit</a>	Jeffrey Suhey, Dustin Gohmert and Shane Jacobs
371	400	<a href="#">Development of Human-Spacesuit Interaction Models</a>	Sarah Jarvis, Linh Vu, Elizabeth Benson and Sudhakar Rajulu

### ICES401: Extravehicular Activity: Systems

21	401	<a href="#">Extravehicular Activity Framework for Exploration - 2019</a>	Brian Alpert and Brian Johnson
26	401	<a href="#">Commercial EVA Space Suit System Development</a>	Theodore Southern and Nikolay Moiseev
142	401	<a href="#">Parametric Analysis of Internal Heat Transfer for Full-body Radiative-cooled Space Suit Concepts</a>	Jan Junker and David Klaus
175	401	<a href="#">Advanced Liquid Cooling and Ventilation Garment Using Thermally Conductive Tubing</a>	Daniel Murphy, Brian Tucker and David Sykes
198	401	<a href="#">Optimal Cooling Garment Design Based on Analysis, Modeling, and Testing</a>	Michael Izenson, Jerry Bieszczad and Ariane Chepko
232	401	<a href="#">BioBot: Investigating an Alternative Paradigm for Planetary EVA</a>	David Akin, Kate Melone, Brady Sack and Jeffrey Zhu

### ICES402: Extravehicular Activity: PLSS Systems

286	402	<a href="#">Monolithic Trace-Contaminant Sorbents Fabricated from 3D-printed Polymer Precursors</a>	Marek A. Wójciewicz, Joseph E. Cosgrove, Michael A. Serio, Andy Carlson and Cinda Chullen
338	402	<a href="#">Critical Review of Thermal Management Technologies for Portable Life Support Systems</a>	Jeremy Stroming and Dava Newman
353	402	<a href="#">Metal Oxide Sorbent Deactivation Study</a>	Sandra Guerrero, James Auman, Robert Boyle, Thomas Chase, Daniel Goberman, Brian Macias and Timothy Nalette
385	402	<a href="#">A User-Driven Tool for Predicting Contaminant Loading Profiles in the Thermal Control Loop of the Exploration PLSS</a>	Tsvetelina Baryakova
386	402	<a href="#">Updates to the Metabolic Rate Computation Methods Employed by the Caution and Warning System in the Exploration PLSS</a>	Tsvetelina Baryakova
388	402	<a href="#">Modeling of Complex Oxygen Compression Heating Scenarios for the Exploration Extravehicular Mobility Unit Umbilical</a>	Margot Steely and Thomas Paul
389	402	<a href="#">Exploration PLSS Thermal Desktop Modeling</a>	Bruce Barnes, Brittany Abraham, Bruno Miranda, Latham Speasmaker and Quoc Nguyen
390	402	<a href="#">Design and Analysis of a Fan Outlet Check Valve for the Exploration Portable Life Support System</a>	Glenn Waguespack, Anthony Hanford and Bruce Barnes
400	402	<a href="#">Rapid Cycle Amine Testing History</a>	Rachel Sturtz, Bruce Conger and Cinda Chullen
401	402	<a href="#">Robust Liquid Volume Sensor for Flexible Bladders in Microgravity</a>	Marc Ramsey, Cinda Chullen, Eric Desjardins, David Callender, Jed Wilbur, Nicolas Espinosa and Jay Buckey

### ICES403: Extravehicular Activity: Operations

80	403	<a href="#">Relevant Environments for Analysis and Development (READY): Enabling Human Space Exploration Through Integrated Operational Testing</a>	David Coan, Trevor Graff, Kelsey Young and Marc Reagan
322	403	<a href="#">Mission Safety for Repair of the Alpha Magnetic Spectrometer using the Extravehicular Mobility Unit Space Suit Assembly</a>	Jinny Ferl, Mallory Jennings, Patrick Lynn, Steve Wyatt and Trent Barrett
357	403	<a href="#">Pushing the limits beyond 2020- Extending the life of the Extra-Vehicular Mobility Unit (EMU) to 50 years.</a>	Jenn Matty

### ICES404: International Space Station ECLS: Systems

12	404	<a href="#">Controls and Automation Research in Space Life Support</a>	Harry Jones
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36	404	<a href="#">Status of ISS Water Management and Recovery</a>	Layne Carter, Jill Williamson, Daniel Gazda, Chris Brown, Ryan Schaezler, Frank Thomas, Jesse Bazley and Sunday Molina
43	404	<a href="#">Upgrades to the International Space Station Urine Processor Assembly</a>	Jill Williamson, Layne Carter, Jimmy Hill, Rex Graves, Davey Jones and Danielle Morris
49	404	<a href="#">Chemical Analysis of Return-To-Ground Node 1 Charcoal Air Filters From ISS</a>	David Jackson, Elizabeth Bowman, Samuel Manuel, Kevin Braman, Susan Snyder, Alyssa Sherman and Danielle Bowman
53	404	<a href="#">Microbial Analysis of Return-To-Ground Node 1 Charcoal Air Filters From ISS</a>	Darren Dunlap, Natalee Weir, Mark Wilson, Kevin Braman, Susan Snyder and Elizabeth Bowman
59	404	<a href="#">Methane and Carbon Monoxide Concentration Dynamics of the International Space Station's Cabin Atmosphere</a>	Jay Perry
307	404	<a href="#">International Space Station Major Constituent Analyzer (MCA) On-orbit Performance</a>	Ben Gardner, Phillip Erwin, Stephen Denson and Bettylynn Ulrich
373	404	<a href="#">International Space Station (ISS) Environmental Control and Life Support (ECLS) System Overview of Events 2018-2019</a>	Steven Balistreri and Zachary Bryant
374	404	<a href="#">Design and Implementation of Combination Charcoal and HEPA Filters for the International Space Station Cabin Air Ventilation System</a>	Kevin Braman and Susan Snyder

### ICES405: Human/Robotics System Integration

108	405	<a href="#">Development of an Augmented Reality System for Human Space Operations</a>	Carlos Pinedo, Jordan Dixon, Christine Chang, Donna Auguste, McKenna Brewer, Devin Desilva, Chris Hill, Cassidy Jensen, Amanda Jones, James Voss and Allison Anderson
287	405	<a href="#">Development of a Heads-Up Display for Extravehicular Activities</a>	Kathryn Fox, Radhika Karsalia, Jillian Kunze, Cristoph Neisess, Zachary Peters, Roshan Rao, Brady Sack, Matthew Sieh, Ryan Skoletsky, Shelly Szanto, Matthew Wilkin and David Akin

### ICES500: Life Science/Life Support Research Technologies

92	500	<a href="#">Microalgae-based Photobioreactors for a Life Support System of a Lunar Base</a>	Johannes Martin, Gisela Detrell, Jochen Keppler, Harald Helisch, Stefanos Fasoulas and Reinhold Ewald
139	500	<a href="#">Close the gap – Potential of microalgal biomass for closed ECLSS and future in-situ resource utilization in space</a>	Harald Helisch, Frédéric Lapierre, Juy-Kieu Chak, Stefanos Fasoulas and Arnd Heyer
195	500	<a href="#">Astro GardenTM Aeroponic Plant Growth System Design Evolution</a>	Sam Moffatt, Robert Morrow and John Wetzel
199	500	<a href="#">An ISS testbed approach to passive fluid phase separator device development for life support</a>	Logan Torres, Ryan Jenson and Mark Weislogel
242	500	<a href="#">Omni-gravity Hydroponics for Space Exploration</a>	Rihana Mungin, Mark Weislogel, Tyler Hatch and John McQuillen
328	500	<a href="#">Troubleshooting Performance Failures of Chinese Cabbage for Veggie on the ISS</a>	Samuel Burgner, Robert Morrow, Gioia Massa, Raymond Wheeler, Matthew Romeyn and Cary Mitchell

### ICES501: Life Support Systems Engineering and Analysis

16	501	<a href="#">Program Promotion Can Distort Space Systems Engineering and Deny Risk</a>	Harry Jones
17	501	<a href="#">Moon Base Life Support Design Depends on Launch Cost, Crew Size, and Mission Duration</a>	Harry Jones
62	501	<a href="#">CO2-Recycling for Future Exploration Missions</a>	Jochen Keppler and Stefanos Fasoulas
126	501	<a href="#">Astronaut Mass Balance for Long Duration Missions</a>	Michael Ewert and Chel Stromgren
158	501	<a href="#">Self-Sustainable Smart City Design on the Red Planet</a>	Hiroyuki Miyajima
160	501	<a href="#">Development Status of the Virtual Habitat (V-HAB) Simulation System</a>	Daniel Pütz, Claas Olthoff, Jonas Schnaitmann and Ulrich Walter
201	501	<a href="#">Mitigation of Micro-Droplet Ejections During Open Cabin Unit Operations Aboard ISS</a>	Caleb Turner, Mark Weislogel, Jesse Goodman, Sam Mohler, Rihana Mungin, Eugene Ungar and Jennifer Buchli
236	501	<a href="#">Water Recovery Trades for Long-Duration Space Missions</a>	Melanie French and Kevin Lange
239	501	<a href="#">Quantifying ECLSS Robustness for Deep Space Exploration</a>	Christine Escobar, James Nability and Adam Escobar
347	501	<a href="#">Planetary Water Recycling Systems Trade Study</a>	Michael Flynn, Amanda Delos Reyes, Freddie Begabovic, Carlos Flores, Josh Hinkle and Soomin Choi

### ICES502: Space Architecture

23	502	<a href="#">Gateway Gravity Testbed (GGT)</a>	A Scott Howe, Brent Sherwood, Theodore Hall and Damon Landau
113	502	<a href="#">Payload Fairing Geometries as Space Stations with Flexible "Plug and Play" Rack System</a>	Leonardo Guzman
121	502	<a href="#">Application of Multi-Mission Single-Person Spacecraft (MMSPS) to Gateway Mission</a>	Kazuhiko Momose and Olga Bannova
163	502	<a href="#">Improvements to On-Orbit Sleeping Accommodations</a>	Brandon Maryatt
205	502	<a href="#">Application of Composite Materials to Reduce Mass of Internal and External Exploration Habitat Structures</a>	Matthew Simon, Lemuel Carpenter, Glenn Hinda, Andrew Bergan, Jamshid Samareh and Anatoli Mitrou
268	502	<a href="#">Mars X-House: Design Principles for an Autonomously 3D-Printed ISRU Surface Habitat</a>	Melodie Yashar, Christina Ciardullo, Michael Morris, Rebecca Pailes-Friedman, Robert Moses and Daniel Case
275	502	<a href="#">Development and Testing of an Inflatable Airlock Module for Gateway Station and Beyond</a>	David Akin
280	502	<a href="#">Moon Village Reference Masterplan and Habitat Design</a>	Georgi Petrov, Daniel Inocente, Max Haney, Neil Katz, Colin Koop, Advenit Makaya, Marlies Arnhof, Hanna Lakk, Aidan Cowley, Claudie Haignere, Piero Messina, Valentina Sumini and Heather Hava, Larissa Zhou, Elizabeth Lombardi, Kaixin Cui, Heeyeon Joung, Sarah Aguasvivas Manzano, Abby King, Hayley Kinlaw, Kyri Baker, Andy Kaufman and Nikolaus Correll
302	502	<a href="#">SIRONA: Sustainable Integration of Regenerative Outer-space Nature and Agriculture. Part 1 – Architecture and Technology</a>	Heather Hava, Larissa Zhou, Elizabeth Lombardi, Kaixin Cui, Heeyeon Joung, Sarah Aguasvivas Manzano, Abby King, Hayley Kinlaw, Kyri Baker, Andy Kaufman and Nikolaus Correll
309	502	<a href="#">Bringing Nature into Space: The Restorative Potential of Virtual Environments for Long Term Space Travel</a>	Elizabeth Lockard and Andrew Kaufman

### ICES503: Radiation Issues for Space Flight

18	503	<a href="#">Geomagnetically-Trapped and Galactic Cosmic Radiation Environments and Absorbed Dose Calculations for a Hypothetical Sounding Rocket Trajectory</a>	Bill Atwell, Kyle Copeland and Francis Badavi
35	503	<a href="#">Estimates of Radiation Exposures to Crews on Missions in Cis-Lunar Space and on the Lunar Surface from the August 1972 SEP Event</a>	Lawrence Townsend, Wouter de Wet and Fahad Zaman
237	503	<a href="#">Using Plants and Trash to Mitigate Radiation Dose</a>	Elizabeth Marandola, John Wetzel and Robert Morrow
367	503	<a href="#">CRaTER Observations from Lunar Orbit of the Galactic Cosmic Radiation Environment Through the Complete Solar Cycle 24</a>	Wouter de Wet, Fatemeh Rahmanifard, Lawrence Townsend, Nathan Schwadron and Harlan Spence

406	503	<a href="#">ARMAS Flight System for Operational Aerospace Radiation Measurements</a>	Kent Tobiska, Leonid Didkovsky, Kevin Judge, David Bouwer, Seth Wieman, Brad Gersey, Bill Atwell and Rick Wilkins
<b>ICES504: Management of Air Quality in Sealed Environments</b>			
9	504	<a href="#">Enhanced AQM: Development of an Exploration Compatible Air Quality Monitor</a>	William Wallace, Thomas Limero, Kenneth Clark, Ariel Macatangay, Paul Mudgett and Daniel Gazda
37	504	<a href="#">History of NASA's Determination of Offgassed Products (Test 7)</a>	Benjamin Greene, Vanessa Buchanan and Susana Tapia Harper
65	504	<a href="#">Re-generable and functionalised charcoal for submarine atmosphere control</a>	Charles Cummings, Timothy Taylor and Paul 'O'Mahony
93	504	<a href="#">Seeking the Tricorder: Evolution of the NASA Anomaly Gas Analyzer</a>	Paul Mudgett, Mary Coan Skow, Thomas Limero, Steven Beck and Jeffrey Pilgrim
157	504	<a href="#">Advanced Nanostructured Catalysts For Efficient In-Cabin Air Purification</a>	Tanya Shirman, Elijah Shirman, Sissi Liu, Anna Shneidman, Judith Lattimer, Yamin Htet, Keeve Gurkin, Michael Aizenberg and Joanna Aizenberg
171	504	<a href="#">Innovative Environmental Control System for Aircraft</a>	Erica Zavaglio, Mathieu Le Cam, Catherine Thibaud, Giusi Quartarone, Yonghua Zhu, Giovanni Franzini, Paul D. Roux, Marilena Dinca, Andreas Walte and Peter Rothe
172	504	<a href="#">Carbon Monoxide Release From Whole Bean Roasted Coffee in Storage</a>	Alan McCarrick, Benjamin Letter and Sara Jane Neal
266	504	<a href="#">Testbed for Characterizing the Adsorptive Capacities of Pleated Panel Filters</a>	Oscar Monje and Joshua Finn
323	504	<a href="#">Disabled Submarine Escape and Rescue Considerations</a>	Stephanie Mohundro, Sara Jane Neal and Steve Thoresen
<b>ICES506: Human Exploration Beyond Low Earth Orbit: Missions and Technologies</b>			
168	506	<a href="#">From Simulations Towards a Functional Base: the Moon and Mars Base Analog (MaMBA)</a>	Christiane Heinicke
260	506	<a href="#">New Frontiers in Food Production Beyond LEO</a>	Oscar Monje, Tom Dreschel, Matthew Nugent, Mary Hummerick, Lashelle Spencer, Matthew Romeyn, Gioia Massa, Raymond Wheeler and Ralph Fritsche
297	506	<a href="#">NASA Environmental Control and Life Support Technology Development and Maturation for Exploration: 2018 to 2019 Overview</a>	Molly Anderson, Miriam Sargusingh, Robyn Gatens, Jay Perry, Walter Schneider, Ariel Macatangay, Nikzad Toomarian, Melissa McKinley and Laura Shaw
305	506	<a href="#">In-Flight Maintenance Design Philosophy for Gateway and Deep-Space Life Support Systems</a>	Jake Rohrig, Jonathan O'Neill and Tom Stapleton
329	506	<a href="#">Expanded Set of Criteria for Life Support Comparative Assessment</a>	Robert Morrow, John Wetzel and Christopher Loyd
363	506	<a href="#">International Space Station as a Development Testbed for Advanced Environmental Control and Life Support Systems</a>	Laura Shaw
<b>ICES509: Fire Safety in Spacecraft and Enclosed Habitats</b>			
32	509	<a href="#">Development of a Carbon Dioxide Removal Bed and a Combustion Products Removal Bed for Saffire</a>	Michael Casteel and John Graf
101	509	<a href="#">Flammability limits from BASS-II testing in microgravity compared to normal gravity limits</a>	Sandra Olson, Paul Ferkul, Carlos Fernandez-Pello, Fletcher Miller, Indrek Wichman, Subrata Bhattacharjee and James T'len
180	509	<a href="#">Development and Validation of a Model to Account for Gaseous HCl and Aluminum Surface Interactions for Spacecraft Fire Safety Applications</a>	Justin Niehaus, Suleyman Gokoglu, Sandip Mazumder, Gordon Berger and John Easton
188	509	<a href="#">Characterization of Laptop Fires in Spacecraft</a>	Rosa Padilla, Daniel Dietrich, Kelly Lynch, Alfredo Juarez, Susana Harper, Christopher Nagel, Gary Ruff and David Urban
220	509	<a href="#">A Comparison of CFD and Lumped Capacity Analyses of Fires in Spacecraft</a>	John Brooker, Dan Dietrich, Suleyman Gokoglu, Gary Ruff and David Urban
263	509	<a href="#">The Effect of Buoyancy on Upward-Concurrent Flame Spread over Thin Paper</a>	Maria Thomsen, Carlos Fernandez-Pello, David Urban and Gary Ruff
313	509	<a href="#">Pre-Filter Development for Protecting Emergency Mask Respirator Filters in Fire-Generated Environmental Conditions</a>	Gokhan Alptekin, Andrew Hagen and Trevor Haanstad
395	509	<a href="#">Orion Laptop Fire Thermal Analysis</a>	Thomas Paul
<b>ICES510: Planetary and Spacecraft Dust Properties and Mitigation Technologies</b>			
87	510	<a href="#">Stainless Steel HEPA and SuperHEPA Cabin Environment Crossflow Filters for Deep Space Manned Missions</a>	Nicos Andreas, Christopher Cox, Masaaki Tamura and Katsuji Azuma
102	510	<a href="#">Measurement of fungi and bacteria from dust collected on the International Space Station (ISS)</a>	Sarah R. Haines, Ashleigh Bope, Nick Nastasi, John M. Horack, Marit E. Meyer and Karen C. Dannemiller
181	510	<a href="#">The Mars Global Dust Storm of 2018</a>	Michael Smith and Scott Guzewich
223	510	<a href="#">DTVAC Dusty Planetary Thermo-VACuum Simulator and LN2 Commissioning</a>	Roman Kruzelecky, Piotr Murzionak, Jonathan Lavoie, Martin Mena, Ian Sinclair, Gregory Schinn, Edward Cloutis, Nadeem Ghafoor and Josh Newman
246	510	<a href="#">Further Characterization of Aerosols Sampled on the International Space Station</a>	Marit Meyer
295	510	<a href="#">Scroll Filter System Development for Crewed Deep Space Missions</a>	Juan Agui
<b>ICES511: Reliability for Space Based Systems</b>			
11	511	<a href="#">Cost-Effective High Reliability for Space Life Support Requires Using Storage</a>	Harry Jones
14	511	<a href="#">High Reliability Requires More Than Providing Spares</a>	Harry Jones
66	511	<a href="#">How Much Testing is Needed to Manage Supportability Risks for Beyond-LEO Missions?</a>	Andrew Owens and Olivier de Weck
224	511	<a href="#">The Unrealized Potential of Superhydrophobic Substrates in Advanced Life Support Systems</a>	Rawand Rasheed and Mark Weislogel
265	511	<a href="#">In-Space Manufacturing Production Rate and Reliability Targets for On-Demand Fabrication of ECLSS Spares</a>	Matthew Moraguez and Olivier de Weck
<b>ICES513: Computational Modeling for Human Health and Performance Analysis</b>			
169	513	<a href="#">Assessment of Age-Related Organ Size Changes in Various Populations &amp; The Assessment of Tissue Distribution in The Human Body</a>	Jan Weber
170	513	<a href="#">Length and Circumference Assessment of Body Parts – The Creation of Easy-To-Use Predictive Formulas</a>	Jan Weber
225	513	<a href="#">Comparative Assessment of Wearable Surface EMG Electrode Configurations for Biomechanical Applications</a>	J. Walter Lee, Alireza Golgouneh and Lucy Dunne