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369	402	Oxygen Compatibility and Challenge Testing of the Portable Life Support System Variable Oxygen Regulator for the Advanced Extravehicular Mobility Unit	Colin Campbell, Marlon Cox, Eric Falconi, Carly Meginnis, Bruce Barnes and Bruce Conger

288	403	Development and Testing of a Next-Generation Spacesuit Simulator for Analog Field Tests	David Akin
333	403	An Alternative Approach to Human Servicing of Crewed Earth Orbiting Spacecraft	John Mularski and Brian Alpert
17	404	International Space Station Major Constituent Analyzer On-orbit Performance	Ben Gardner and Phillip Erwin
36	404	Status of ISS Water Management and Recovery	Donald Carter, Chris Brown, Jesse Bazley, Daniel Gazda, Kevin Takada and Ryan Schaezler
40	404	Upgrades to the International Space Station Water Recovery System	Matthew Kayatin, Jennifer Pruitt, Mononita Nur, Kevin Takada and Donald Carter
59	404	International Space Station (ISS) Environmental Control and Life Support (ECLS) System Overview of Events 2016-2017	Gregory Gentry
85	404	Would Current International Space Station (ISS) Recycling Life Support Systems Save Mass on a Mars Transit?	Harry Jones
231	404	Microbial Growth Control in the International Space Station Potable Water Dispenser	Brandon Maryatt and Melanie Smith
236	404	Inter-Module Ventilation Changes to the International Space Station Vehicle to support separated USOS and RSOS atmospheres in support of troubleshooting CO2 removal	Steven Balistreri and Kevin Braman
241	404	CDRA-4EU Testing to Assess Increased Number of ISS Crew	Warren Peters and James Knox
253	404	Analysis of Chemical and Microbial Components Adsorbed on the Ion Exchange Bed in the Oxygen Generation System Recirculation Loop	Elizabeth Bowman, Eric Cramblit, Danielle Bowman, Darren Dunlap, Mark Wilson, Ahmed Ghariani, Omoniyi Obashe and Steve Van Keuren
251	405	Development and Testing of Robotically Assisted Extravehicular Activity Gloves	Jonathan Rogers, Benjamin Peters, Evan Laske and Emily McBryan
255	405	The Influence of Robotic Assistance on Reducing Neuromuscular Effort And Fatigue During Extravehicular Activity Glove Use	Kaci Madden, Ashish Deshpande, Benjamin Peters, Jonathan Rogers, Evan Laske and Emily McBryan
159	406	Characterization of Biological Fallout Particles of Cleanrooms to Measure Spacecraft Cleanliness	Ganesh Babu Malli Mohan, James Benardini, Ryan Hendrickson, Kasthuri Venkateswaran and Moogega Stricker
307	406	A fast, accurate and sensitive GC-FID method for the analyses of glycols in Water and Urine	Chung-Kung Kuo, James Alverson and Daniel Gazda
320	406	Development of an Electrolytic Silver Biocide Dosing System for Use in a Spacecraft Potable Water Bus	Cody Gossel, Michael Callahan and Dejan Raskovic
60	500	Recovery of Nutrients from Inedible Biomass of Tomato and Pepper to Recycle Fertilizer	Griffin Lunn, Gary Stutte, Lashelle Spencer, Mary Hummerick, Les Wong and Raymond Wheeler
129	500	Extraterrestrial Farming with the Leafy Green Machine – LED Performance Testing	Doug Chickarello, Malena Agyemang, Amaninder Singh Gill, Joshua Summers, Cameron Turner and John Wagner
131	500	Microbial Characteristics of ISS Environmental Surfaces	Kasthuri Venkateswaran
147	500	Innovative biological and physico-chemical recycling of CO2 in human spaceflight	Stefan Belz, Jochen Keppler, Jens Bretschneider, Harald Helisch and Gisela Detrell
196	500	Evaluation of Low-Pressure Cold Plasma for Disinfection of ISS Grown Produce and Metallic Instrumentation	Paul Hintze, Carolina Franco, Mary Hummerick, Phillip Maloney and Lashelle Spencer
301	500	Evolution of Space-Based Plant Growth Technologies for Hybrid Life Support Systems	Robert Morrow, John Wetzel, Robert Richter and Thomas Crabb
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32	501	Life Support System Trade Study for SpaceX Mars Mission	Hiroyuki Miyajima

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