

# Program Schedule

AIAA Propulsion and Energy Forum and Exposition  
July 25 - 27, 2016

The Program Report was last updated July 20, 2016 at 01:01 AM EDT. To view the most recent meeting schedule online, visit <https://aiaa-mpe16.abstractcentral.com/planner.jsp>

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Monday, July 25, 2016

Time	Session or Event Info
	8:00 AM-9:00 AM, Ballroom A-D, PLNRY-01. <b>INNOVATE OR DIE! (Note: Dying is easier)</b> , Plenary, <b>Forum Event</b>
	8:45 AM-9:30 AM, Exhibit Hall C, NW-01. <b>Networking Coffee Break</b> , Networking
	9:30 AM-12:00 PM, 255 F, <b>ABPSI-01. Nozzles and Exhaust</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Chen Chuck, chen.chuck@boeing.com, Boeing Commercial Airplanes; Co-Chair: Darius Sanders, dr.darius.sanders@gmail.com, Air Force Reseach Laboratory
9:30-10:00 AM	<b>AIAA-2016-4500. Reducing residue in aluminized fuel-rich propellant for Ramjets.</b> N. Rathi; P. Ramakrishna
10:00-10:30 AM	<b>AIAA-2016-4501. Prediction of NO<sub>x</sub> Emissions Using a Stirred Reactor Modelling Approach for an Aero-Engine with RQL Combustor</b> A. Prakash
10:30-11:00 AM	<b>AIAA-2016-4502. Hot Streak Characterization in Serpentine Exhaust Nozzles</b> D.S. Crowe; C.L. Martin
11:00-11:30 AM	<b>AIAA-2016-4503. Propulsion Aerodynamic Workshop II, Summary of Participant Results for a Dual Separate Flow Reference Nozzle, Including Some Experimental Results</b> R.L. Thornock
11:30-12:00 PM	<b>AIAA-2016-4504. Open and Closed-Loop Responses of a Dual-Throat Nozzle during Fluidic Thrust Vectoring</b> M. Ferlauto; R. Marsilio
	9:30 AM-12:00 PM, 255 E, <b>ADP-01. Additive Manufacturing for Propulsion Systems</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Elizabeth Jens, bethjens@gmail.com, Stanford Univ; Co-Chair: Corinne Gatto, Corinne.E.Gatto@jpl.nasa.gov, Jet Propulsion Laboratory
9:30-10:00 AM	<b>AIAA-2016-4505. Thin film deposition using rarefied gas jet</b> S. Pradhan
10:00-10:30 AM	<b>AIAA-2016-4506. Use of Additive Manufacturing to Develop Advanced Hybrid Rocket Designs</b> J.J. Catina; B. Nellis; D. Grigsby; K. Castonguay
10:30-11:00 AM	<b>AIAA-2016-4507. Additive Manufacturing of Small Scale Rocket Grain Cartridges with Uniformly Distributed Aluminum Particles</b> T.S. Elliott; B. Jenkins; R. Zeineldin; J. Johnson; M. Simons; J. Godfey; T. Mabry
11:00-11:30 AM	<b>AIAA-2016-4508. Design of an Additive Manufactured Compressor Vane with Multi-Hole Pressure Probes for the Application in a Twin-Spool Turbofan Engine</b> F. Kern; S. Bindl; M. Strasser; R. Niehuis

11:30-12:00 PM	<b>AIAA-2016-4509. Additively Manufactured Low NOx Multipoint Lean Direct Injection Fuel Atomizer Concepts</b> G. Zink; S. Pack; J. Ryon; J. Short
9:30 AM-12:00 PM, 150 G, AEC-01. <b>Advanced Engine Control &amp; Intelligent Systems I</b> , Technical Paper, <b>52nd AIAA/SAE/ASSEE Joint Propulsion Conference</b> , Chair: Alireza Behbahani, al.behbahani@wpafb.af.mil, AFRL/RQT; Co-Chair: Richard Millar, r.c.millar@verizon.net, Naval Postgraduate School	
9:30-10:00 AM	<b>AIAA-2016-4510. G2 ISHM Autonomous Control System for Cryogenics Operation</b> J.A. Toro Medina
10:00-10:30 AM	<b>AIAA-2016-4511. Heat Transfer Analysis for Servo Valve in Hydraulic Servo Actuator of Aero Engine Vectoring Nozzle</b> Y. Ding; Y. Liu; Y. Luo; L. Du
10:30-11:00 AM	<b>AIAA-2016-4512. Technical Opportunities for High Temperature Smart P3 Sensors and Electronics for Distributed Engine Control</b> O.A. Watts; L. Frediani; M.W. Usrey
9:30 AM-12:00 PM, 251 C, APC-01. <b>Advanced In-Space Concepts</b> , Technical Paper, <b>52nd AIAA/SAE/ASSEE Joint Propulsion Conference</b> , Co-Chair: Aloysius Reisz, areisz@reiszeng.com, Reisz Engineers; Chair: John Robinson, jwelshr@gmail.com, Retired f/Boeing	
9:30-10:00 AM	<b>AIAA-2016-4513. Roadmap for Long Term Sustainable Space Exploration and Habitation Alternate Basing Concepts</b> J.W. Robinson; R.E. Rhodes; E.M. Henderson
10:00-10:30 AM	<b>Abstract Withdrawn</b>
10:30-11:00 AM	<b>AIAA-2016-4515. Proposed Lunar Mission to Commemorate Apollo 11 Moon Landing</b> D.G. Thorpe; E.M. Henderson
11:00-11:30 AM	<b>AIAA-2016-4516. Space Tug Propellant Options</b> J.W. Robinson
9:30 AM-12:00 PM, 150 DE, APS-01. <b>Space Power Generation, Processing and Performance</b> , Technical Paper, <b>14th International Energy Conversion Engineering Conference</b> , Co-Chair: Mukund Patel, patelm@usmma.edu, US Merchant Marine Academy; Co-Chair: Andrew Baisden, carson.baisden@jhuapl.edu, Johns Hopkins University Applied Physics Laboratory	
9:30-10:00 AM	<b>AIAA-2016-4517. The Van Allan Probes Power System Mission Performance</b> M.H. Butler
10:00-10:30 AM	<b>AIAA-2016-4518. Stability Analysis of Spacecraft Power Systems and Power Processing Units</b> J.R. Lee
10:30-11:00 AM	<b>AIAA-2016-4519. Status of the Development of Flight Power Processing Units for the NASA's Evolutionary Xenon Thruster - Commercial (NEXT-C) Project</b> M.V. Aulisio; J.J. Bontempo; L.R. Pinero; A.G. Birchenough; T. Hertel; B. White; T. Hickman

11:00-11:30 AM	<b>AIAA-2016-4520. Solar Array Design For The Mars InSight Lander Mission</b> G.Q. Lam; S. Billets; T. Norick; R. Warwick
11:30-12:00 PM	<b>AIAA-2016-4521. Planetary Object Geophysical Observer (POGO) and Its Unique Power System</b> E. Adams; E. Hohlfeld; J. Neville; C. Vigil Lopez; B.R. Wilhelm
9:30 AM-12:00 PM, 151 DE, <b>ECD-01. Magnetohydrodynamic, Brayton, and CO2 Cycle Systems</b> , Technical Paper, <b>14th International Energy Conversion Engineering Conference</b> , Chair: Michael Piszczor, Michael.F.Piszczor@nasa.gov, NASA Glenn Research Center; Co-Chair: Steven Geng, Steven.M.Geng@nasa.gov, NASA Glenn Research Center	
9:30-10:00 AM	<b>AIAA-2016-4522. Fundamental Studies of Radio-Frequency Preionization for Frozen Inert Gas Plasma Magnetohydrodynamic Electrical Power Generation</b> M. Tanaka; Y. Hitotsubashi; Y. Okuno
10:00-10:30 AM	<b>AIAA-2016-4523. Numerical Simulation of Frozen Inert Gas Plasma MHD Generator with Collisional-Radiative Model</b> R. Takahashi; F. Takayasu; Y. Okuno
10:30-11:00 AM	<b>AIAA-2016-4524. Numerical Analysis of Non-equilibrium Disk MHD Generator with Swirl Vanes</b> D. Ichinokiyama; F. Takayasu
11:00-11:30 AM	<b>AIAA-2016-4525. Sensitivity Study of a VHTR Powered Brayton Cycle as a Topping Unit for a Steam Cycle</b> W. Freitas; D. Wilson
11:30-12:00 PM	<b>AIAA-2016-4526. Two Types of Analytical Methods for a Centrifugal Compressor Impeller for Supercritical CO<sub>2</sub> Power Cycles</b> L. Blanchette; A. Khadse; M. Mohagheghi; J.S. Kapat
9:30 AM-12:00 PM, 151 G, <b>EDES-01. Waste Heat Recovery and Submerged Offshore Nuclear Power Stations: Technology, Opportunities and Challenges</b> , Panel, <b>14th International Energy Conversion Engineering Conference (non-paper sessions)</b> , Chair: Ashwani Gupta, akgupta@umd.edu, University of Maryland; Co-Chair: Scott Duncan, sduncan@asdl.gatech.edu, Aerospace Systems Design Laboratory, Georgia Tech	
9:30 AM-12:00 PM, 253 AB, <b>EDU-01. Propulsion Education I</b> , Technical Paper, <b>52nd AIAA/SAE/ASME Joint Propulsion Conference</b> , Chair: Eugene Fleeman, genefleeman@mindspring.com; Co-Chair: Matthew Hitt, mah0004@uah.edu, The University of Alabama in Huntsville	
9:30-10:00 AM	<b>AIAA-2016-4527. Practical Techniques for Modeling Gas Turbine Engine Performance</b> J.W. Chapman; T.M. Lavelle; J.S. Litt
10:00-10:30 AM	<b>AIAA-2016-4528. Teaching Risk Analysis for Use in an Aircraft Gas Turbine Engine Capstone Design Course</b> A.R. Byerley; C. Cooper; D. O'Dowd
10:30-11:00 AM	<b>AIAA-2016-4529. The Gas Dynamic Brayton Cycle Power Conversion Test Bed as an Educational Device for Workforce Development</b> J.R. Herdy

11:00-11:30 AM	<b>AIAA-2016-4530. Overview of Vortex Injected Hybrid Rocket Engines-Regression Rate Modeling</b> B.J. Roy; R.A. Frederick
11:30-12:00 PM	<b>AIAA-2016-4531. Development of a Vortex Hybrid Upper Stage Engine</b> A.K. Parlett
9:30 AM-12:00 PM, 250 A, EP-01. <b>Hall Thruster Physics &amp; Modeling I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Hani Kamhawi, hani.kamhawi-1@nasa.gov, NASA Glenn Research Center; Co-Chair: Marlene Patino, mipatino@ucla.edu, University of California, Los Angeles	
9:30-10:00 AM	<b>AIAA-2016-4532. Measurements and theory of driven breathing oscillations in a Hall effect thruster</b> K. Hara; S. Keller; Y. Raitses
10:00-10:30 AM	<b>AIAA-2016-4533. PRINCE: A Software Tool for Characterizing Waves and Instabilities in Plasma Thrusters</b> S. Rojas Mata; E. Choueiri; B. Jorns; R. Spektor
10:30-11:00 AM	<b>AIAA-2016-4534. Growth and Saturation of Ion Acoustic Waves in Hall Thrusters</b> I. Katz; A. Lopez Ortega; B. Jorns; I.G. Mikellides
11:00-11:30 AM	<b>AIAA-2016-4535. Hall Thruster Thermal Modeling and Test Data Correlation</b> J.L. Myers; H. Kamhawi; J. Yim; L. Clayman
9:30 AM-12:00 PM, 250 B, EP-02. <b>Lorentz Force Accelerators</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Michael Keidar, keidar@gwu.edu, The George Washington University; Co-Chair: Nelson Yanes, nelsonyanes135@gmail.com	
9:30-10:00 AM	<b>AIAA-2016-4536. Liquid Metal Mass Flow Measurement Using a JxB Pump for a Lithium Lorentz Force Accelerator</b> M.A. Hepler; W. Coogan; B. Ilardi; E. Choueiri
10:00-10:30 AM	<b>AIAA-2016-4537. Measurement of the Applied-Field Component of the Thrust of a Lithium Lorentz Force Accelerator</b> W. Coogan; M.A. Hepler; E. Choueiri
10:30-11:00 AM	<b>AIAA-2016-4538. Parametric Optimization of the Fusion Driven Rocket Liner Compression Driver</b> A. Shimazu; A.P. Pancotti; B. Cornella; J.T. Slough
9:30 AM-12:00 PM, 250 C, EP-03. <b>EP Flight Programs &amp; Missions</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Taylor Swanson, taylorswanson@gmail.com, AEDC; Co-Chair: Benjamin Jorns, Benjamin.A.Jorns@jpl.nasa.gov,	
9:30-10:00 AM	<b>AIAA-2016-4539. In-Flight Operation of the Dawn Ion Propulsion System Through Operations in the LAMO Orbit at Ceres</b> C.E. Garner; M.D. Rayman
10:00-10:30 AM	<b>AIAA-2016-4540. The Iodine Satellite (iSat) Project Development through Critical Design Review (CDR)</b> J. Dankanich; H. Kamhawi; M.W. Selby; L. Byrne

10:30-11:00 AM	<b>AIAA-2016-4541. Psyche: Journey to a Metal World</b> D.Y. Oh; D.M. Goebel; L. Elkins-Tanton; C. Polanskey; P. Lord; S. Tilley; J.S. Snyder; G. Carr; S. Collins; G. Lantoine; D. Landau
11:00-11:30 AM	<b>AIAA-2016-4542. Adaptability of the SSL SPT-140 Subsystem for use on a NASA Discovery Class Missions: Psyche</b> J.J. Delgado; P. Lord; L.C. Rotlisberger
11:30-12:00 PM	<b>AIAA-2016-4543. Performance and Plume Characterization of the PPS 1350-G Hall Thruster</b> K.D. Diamant; T. Lee; R. Liang; J. Noland; V. Vial; N. Cornu
9:30 AM-12:00 PM, 250 D, <b>EP-04. Ion Thruster Development</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Richard Wirz, wirz@ucla.edu, UCLA; Co-Chair: John Foster, jefoster@umich.edu, University of Michigan	
9:30-10:00 AM	<b>AIAA-2016-4544. Maturation of Iodine Fueled BIT-3 RF Ion Thruster and RF Neutralizer</b> M. Tsay; J. Frongillo; J. Zwahlen
10:00-10:30 AM	<b>AIAA-2016-4545. Design of Miniature Ring-Cusp Ion Thrusters via Analysis of Discharge EEDF and Plasma Parameter Mapping</b> B. Dankongkakul; R.E. Wirz
9:30 AM-12:00 PM, 250 E, <b>EP-05. Electrospray I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Benjamin Prince, benjamin.prince@kirtland.af.mil, Air Force Research Laboratory; Co-Chair: Steven Berg, spbryf@mail.mst.edu, Missouri University of Science and Technology	
9:30-10:00 AM	<b>AIAA-2016-4547. Silicon Emitter Needle and Array Design for Indium Electro spray Arrays for Spacecraft Propulsion</b> C. Marrese-Reading; J.R. Anderson
10:00-10:30 AM	<b>AIAA-2016-4548. Simulation and Imaging of Ferrofluid Meniscus Deformation and Spray Onset under Electric and Magnetic Stresse</b> B. Jackson; L.B. King
10:30-11:00 AM	<b>AIAA-2016-4549. Measuring the Effects of Magnetic Surface Stress During Electro spray of an Ionic Liquid Ferrofluid</b> K.J. Terhune; L.B. King
11:00-11:30 AM	<b>AIAA-2016-4550. Species Measurements in the Beam of an Ionic Liquid Ferrofluid Capillary Electro spray Source</b> K.J. Terhune; L.B. King; B.D. Prince; B.S. Hawkett
11:30-12:00 PM	<b>AIAA-2016-4551. Measurement of the Fragmentation Rates of Solvated Ions in Ion Electro spray Thrusters</b> C. Miller; P.C. Lozano
9:30 AM-12:00 PM, Ballroom F, <b>F360-01. NRC Low-Carbon Aviation Report and Recommendations</b> , Forum 360, <b>Forum 360</b>	

9:30 AM-12:00 PM, 250 F, <b>GTE-01. Turbines I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Guillermo Paniagua, gpaniagua@me.com, Purdue University	
9:30-10:00 AM	<b>AIAA-2016-4552. Influence of Laminar-Turbulent Transition on 3D Flow Pattern in Subsonic Turbine Cascade</b> S. Yershov; V. Yakovlev
10:00-10:30 AM	<b>AIAA-2016-4553. Secondary Flows and Losses in a Highly Loaded Low Aspect Ratio Transonic Axial Flow Turbine Stage A.</b> Kaliyaperumal; M. Govardhan
10:30-11:00 AM	<b>AIAA-2016-4554. Secondary Loss Production Mechanisms in a Low Pressure Turbine Cascade</b> P.S. Bear; M. Wolff; A. Gross; C. Marks; R. Sondergaard
11:00-11:30 AM	<b>AIAA-2016-4555. Probabilistic CFD-Analysis of Regeneration-Induced Geometry Variances in a Low-Pressure Turbine</b> B. Ernst; J.R. Seume; F. Herbst
11:30-12:00 PM	<b>AIAA-2016-4556. Integration of a Turbine Stage Optimizer into Engine Simulation Utilizing Numerical Propulsion System Simulation</b> C.R. Thorn; R.J. Hartfield
9:30 AM-12:00 PM, 251 A, <b>GTE-02. Air-Breathing Combustors I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Mohamed Nalim, mnalim@iupui.edu, Indiana University Purdue University Indianapolis	
9:30-10:00 AM	<b>AIAA-2016-4557. Assessment of the Boundary Layer within a Rotating Detonation Combustor</b> J. Braun; J. Sousa; G. Paniagua
10:00-10:30 AM	<b>AIAA-2016-4558. Computational Analysis of Flame Stabilization Using Strong Swirl for Afterburner Applications</b> K.M. Parammasivam; D. D; S. Gunasekar; A. Basidh
10:30-11:00 AM	<b>AIAA-2016-4559. Numerical Evaluation of an Ejector-Enhanced Resonant Pulse Combustor with a Poppet Inlet Valve and a Converging Exhaust Nozzle</b> S. Yungster; D.E. Paxson; H. Perkins
11:00-11:30 AM	<b>AIAA-2016-4560. Optical Diagnostics in a High-g Combustion Cavity</b> A. Cottle; N.A. Gilbert; M.D. Polanka; L.P. Goss; C.Z. Goss
11:30-12:00 PM	<b>AIAA-2016-4561. A CFD Investigation of Multiple Burner Ignition and Flame Propagation with Detailed Chemistry and Automatic Meshing</b> G. Kumar; S.A. Drennan
9:30 AM-12:00 PM, 255 B, <b>HR-01. Combustion Dynamics and Mixing Efficiencies I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Scott Claflin, scott.claflin@rocket.com, Aerojet Rocketdyne; Co-Chair: Dario Pastrone, dario.pastrone@polito.it, Politecnico di Torino	
9:30-10:00 AM	<b>AIAA-2016-4562. Vortex Combustion in a Lab-Scale Hybrid Rocket Motor</b> C. Paravan; J. Glowacki; S. Carlotti; F. Maggi; L. Galfetti

10:00-10:30 AM	<b>AIAA-2016-4563. Thermal Cycling for Development of Hybrid Fuel for a Notional Mars Ascent Vehicle</b> E. Farias; M. Redmond; A.C. Karp; R. Shotwell; F.S. Mechentel; G.T. Story
10:30-11:00 AM	<b>AIAA-2016-4564. Flame Emission Spectroscopy in a Paraffin-Based Hybrid Rocket</b> K.J. Stober; P. Narsai; K. Venkataraman; A. Thomas; B.J. Cantwell
11:00-11:30 AM	<b>AIAA-2016-4565. Bipolar Combustion Response Model for Hybrid Rocket Internal Ballistic Simulation</b> D.R. Greatrix
9:30 AM-12:00 PM, 254 B, HSABP-01. <b>Special/Invited Panel on HSABP: Special Session: Persistence Issues In CFD of Hypersonic Air-Breathing Propulsion</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Faure Malo-Molina, faurejoel@gmail.com, Raytheon Missile Systems; Co-Chair: Stephen Beckel, sabeckel@gmail.com	
9:30-11:00 AM	<b>Panel Discussion</b>
11:00-11:30 AM	<b>AIAA-2016-4566. Reacting Hybrid Reynolds-Averaged Navier-Stokes/Large-Eddy Simulation of a Supersonic Cavity Flameholder</b> E.A. Hassan; D.M. Peterson; M.A. Hagenmaier
11:30-12:00 PM	<b>AIAA-2016-4567. Scaling for Flamelet Calculation of Turbulent Supersonic Combustion</b> F. Ladeinde; Z. Lou
9:30 AM-12:00 PM, 255 A, HSABP-02. <b>Computational Analysis of Supersonic Combustion Flow Paths, Components, and Processes</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Co-Chair: Claudio Bruno, sonic.grafica1@gmail.com, United Technologies Research Center; Chair: Robert Moehlenkamp, robert.moehlenkamp@rocket.com, Aerojet Rocketdyne	
9:30-10:00 AM	<b>AIAA-2016-4568. Performance comparisons, RAM and SCRAM</b> J.K. Tegner
10:00-10:30 AM	<b>AIAA-2016-4569. A Quasi-One-Dimensional Analysis of Hydrogen-Fueled Scramjet Combustors</b> R. Seleznev; S. Surzhikov
10:30-11:00 AM	<b>AIAA-2016-4570. Quasi-One-Dimensional Analysis of Supersonic Combustor Performance</b> Y. Zhao; Q. Shen; F. Guan
11:00-11:30 AM	<b>AIAA-2016-4571. A computational and experimental study of injection structure effect on H<sub>2</sub>-air rotating detonation engine</b> C. Yang; H. Ma; X. Wu; X. Xu
9:30 AM-12:00 PM, 254 C, HSABP-03. <b>Design and Optimization of High Speed Propulsion Flow Paths</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Roy Hartfield, rjh@eng.auburn.edu, Auburn University; Co-Chair: Daniel Paxson, daniel.e.paxson@nasa.gov, NASA Glenn Research Center	
9:30-10:00 AM	<b>AIAA-2016-4572. Investigation of a variable geometry 2D inlet for combined cycle engine.</b> X. Liu; L. Shi; P. Liu; G. He



10:00-10:30 AM	<b>AIAA-2016-4573. Analysis of Mode Transition Performance for a Tandem TBCC Engine</b> M. Zhang; Z. Wang; Z. Liu; X. Zhang
10:30-11:00 AM	<b>AIAA-2016-4574. Analyzing the flow pattern of inward turning inlet combined with variable-geometry</b> Z. Fengyuan; G. Huang; H. Huihui; C. Xia
11:00-11:30 AM	<b>AIAA-2016-4575. Research on a Novel Internal waverider TBCC Inlet for Ramjet Mode</b> H. Huihui; G. Huang; Z. Fengyuan; C. Xia
9:30 AM-12:00 PM, 251 D, LP-01. <b>Green Propellants I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Matthew Deans, mcd18@cwru.edu, NASA Glenn Research Ctr; Co-Chair: Jeff Moore, jmoore5@moog.com	
9:30-10:00 AM	<b>AIAA-2016-4576. Green Propellant Loading Demonstration at U.S. Range</b> H. Mulkey; J.T. Miller; C. Bacha
10:00-10:30 AM	<b>AIAA-2016-4577. AF-M315E Propulsion System Advances and Improvements</b> R. Masse; M. Allen; R. Spores; E.A. Driscoll
10:30-11:00 AM	<b>AIAA-2016-4578. Decomposition of a Double Salt Ionic Liquid Monopropellant on Heated Metallic Surfaces</b> S.P. Berg; J. Rovey
11:00-11:30 AM	<b>AIAA-2016-4579. Linear Burn Rates of Monopropellants for Multi-Mode Micropropulsion</b> A. Mundahl; S.P. Berg; J. Rovey
9:30 AM-12:00 PM, 251 E, LP-02. <b>Combustors I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: David Lineberry, linebed@uah.edu, UAH Propulsion Research Center; Co-Chair: Matthieu Masquelet, matthieu.masquelet@gmail.com, GE Global Research Center	
9:30-10:00 AM	<b>AIAA-2016-4580. Exact Euler Solution of the Beltramanian and Trkalian Bidirectional Vortex in a Cylindrical Annulus</b> T.A. Barber; J. Majdalani
10:00-10:30 AM	<b>AIAA-2016-4581. Effect of Injector Variation on the Bidirectional Vortex</b> B.A. Maicke; G. Talamantes
10:30-11:00 AM	<b>AIAA-2016-4582. Experimental Investigation of Continuous Detonation Rocket Engines for In-Space Propulsion</b> R.D. Smith; S. Stanley
11:00-11:30 AM	<b>AIAA-2016-4583. Validation of Damage Parameter Based Finite Element Fatigue Life Analysis Results to Combustion Chamber Type TMF Panel Test Results</b> G. Thiede; J.R. Riccius; S. Reese
9:30 AM-12:00 PM, 251 F, LP-03. <b>Propellant Storage &amp; Transfer I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Jason Molinsky, jason.molinsky@orbitalatk.com, Orbital ATK; Co-Chair: Michael Meyer, michael.l.meyer@nasa.gov, NASA Glenn Research Center	

9:30-10:00 AM	<b>AIAA-2016-4584. Experimental, Numerical and Analytical Study of Cryogenic Slosh Dynamics in a Spherical Tank</b> J.M. Storey; J. Poothokaran; D.R. Kirk; H. Gutierrez; M. de Natris; B. Marsell; P.A. Schallhorn
10:00-10:30 AM	<b>AIAA-2016-4585. New CFD Method for Simulation of Slosh &amp; Microgravity Fluid Dynamics</b> R.E. Manning; I. Ballinger; M. Dowdy
10:30-11:00 AM	<b>AIAA-2016-4586. Coupling sloshing, GNC and rigid body motions during ballistic flight phases</b> P. Behruzi; F. De Rose; F. Cirillo; M. Konopka
11:00-11:30 AM	<b>AIAA-2016-4587. Validation of High-Resolution CFD Method for Slosh Damping Extraction of Baffled Tanks</b> H.Q. Yang; J. West
11:30-12:00 PM	<b>AIAA-2016-4588. Numerical calculation and reduced gravity experiment for dynamic wetting behavior in liquid container</b> R. Imai
9:30 AM-12:00 PM, 255 C, PC-01. <b>Combustion Dynamics I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: William Anderson, wanderso@purdue.edu, Purdue University	
9:30-10:00 AM	<b>AIAA-2016-4589. Experimental Combustion Dynamics Behavior Of A Multi-Element Lean Direct Injection (LDI) Gas Turbine Combustor</b> W.A. Acosta; C. Chang
10:00-10:30 AM	<b>AIAA-2016-4590. Computation of Combustion Noise from a Premixed and Pressurized Propane Flame Using Statistical Noise Modeling</b> W.C. Ullrich; C. Hirsch; T. Sattelmayer
10:30-11:00 AM	<b>AIAA-2016-4591. Assessing Computational Fluid Dynamics Turbulence Models for Rocket Exhaust Plume Simulation</b> D. Watts
11:00-11:30 AM	<b>AIAA-2016-4592. A structural variation of the methane-air premixed flame affected by an ultrasonic standing wave</b> J. Kim; M. Kim; S. Bae; D. Bae; H. Seo
9:30 AM-12:00 PM, 255 D, PC-02. <b>Propellant Development - Solid Fuel</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Thong Nguyen, thong.nguyen@rocket.com, Aerojet Rocketdyne; Co-Chair: Christian Paravan, christian.paravan@polimi.it, Politecnico di Milano	
9:30-10:00 AM	<b>AIAA-2016-4593. Measurements of Dielectric Properties of Condensed Phase Aluminized Composite Propellants</b> S.J. Barkley; K. Zhu; M. Ballesterio; J. Michael; T.R. Sippel
10:00-10:30 AM	<b>AIAA-2016-4594. Modern Scanning Electron Microscopy in the Study of Solid Propellant Combustion: Surface structure and Elemental Identification Via EDS</b> G.R. Morrow; A.R. Demko; E.L. Petersen
10:30-11:00 AM	<b>AIAA-2016-4595. Pyrotechnic Dispersion and Ignition of Boron Particles in Gels</b> Y. Solomon; D. Grinstein; B. Natan

11:00-11:30 AM	<b>AIAA-2016-4596. Novel Activated Metal Powders for Improved Hybrid Fuels and Green Solid Propellants</b> S. Dossi; C. Paravan; F. Maggi; M. Di Lorenzo; J. Ardalic; L. Galfetti
11:30-12:00 PM	<b>AIAA-2016-4597. Numerical Method to Estimate Thermal Conductivity of a Model Composite Propellant</b> G. Rajoriya; C. Vijay; P. Ramakrishna
9:30 AM-12:00 PM, 254 A, SR-01. <b>Solid Rocket Grain Design and Ballistics</b> , Technical Paper, <b>52nd AIAA/SAE/ASSEE Joint Propulsion Conference</b> , Chair: Michel Berdoyes, michel.berdoyes@herakles.com, Herakles; Co-Chair: Scott McHenry, scott.mchenry@orbitalatk.com, OrbitalATK	
9:30-10:00 AM	<b>AIAA-2016-4598. 3D Flame Spread and Starting Transient in Dual-thrust Solid Propellant Rocket Motors</b> S. Ajith; C. Nichith; S. Vignesh; S. Mani; T. Ramesh kumar; V. Sanal Kumar
10:00-10:30 AM	<b>AIAA-2016-4599. Burning Rate and Temperature Measurements of HTPB/AP/Al Propellants at Standard Rocket Motor Tests</b> R.P. de Araujo; P.T. Lacava; L.N. de Almeida; F.A. Cunha
10:30-11:00 AM	<b>Abstract Withdrawn</b>
9:30 AM-12:00 PM, 151 AB, TM-01. <b>Thermal System Applications and Unique Environments I</b> , Technical Paper, <b>14th International Energy Conversion Engineering Conference</b> , Chair: Michael Choi, Michael.K.Choi@nasa.gov, NASA-Goddard Space Flight Center; Co-Chair: Calin Tarau, calin.tarau@1-act.com, Advanced Cooling Technologies	
9:30-10:00 AM	<b>AIAA-2016-4601. Using Paraffin PCM to Make Optical Communication Type of Payloads Thermally Self-Sufficient for Operation in Orion Crew Module</b> M.K. Choi
10:00-10:30 AM	<b>AIAA-2016-4602. Novel Multiphase Change Materials for Energy Storage Application in Buildings</b> J. Darkwa; W. Su
10:30-11:00 AM	<b>AIAA-2016-4603. Alkali Metal Heat Pipes for Kilopower</b> C. Tarau; W.G. Anderson; D. Beard
11:00-11:30 AM	<b>AIAA-2016-4604. Computational Investigation of Impingement Cooling for Regeneratively Cooled Rocket Nozzles</b> B. De Angelo; M.A. Ricklick
11:30-12:00 PM	<b>AIAA-2016-4605. Heat Pipe Embedded Thermoelectric Generator for Diesel Generator Set Waste Heat Recovery</b> J. Schmidt; M. Ababneh
1:30 PM-3:00 PM, Ballroom A-D, PLNRY-02. <b>System Needs in Propulsion and Energy</b> , Plenary, <b>Forum Event</b>	
3:00 PM-3:30 PM, Exhibit Hall C, NW-02. <b>Networking Coffee Break</b> , Networking	

3:30 PM-6:00 PM, 255 F, ABPSI-02. <b>High-Speed Inlets</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: M Hassan, mohammed.hassan@gatech.edu, Georgia Institute of Technology	
3:30-4:00 PM	<b>AIAA-2016-4606. Optimizing Probe Placement to Determine Inlet Distortion</b> S.F. Walter; J. Nability; R.P. Starkey
4:00-4:30 PM	<b>AIAA-2016-4607. Design of Wave Derived Inlet for High Curvature Fuselage</b> E.B. Saheby; G. Huang; A. Hays
4:30-5:00 PM	<b>AIAA-2016-4608. Effects of Ridge Configuration on the Performance of Integrated inlets</b> G. Huang; E.B. Saheby; M. Akhlaghi; Z. Yu
5:00-5:30 PM	<b>AIAA-2016-4609. Vortex Generators in a Two-Dimensional, External-Compression Supersonic Inlet</b> E. Baydar; F.K. Lu; J.W. Slater
3:30 PM-6:00 PM, 250 E, AEP-01. <b>Aircraft Electric Propulsion I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Lie-Mine Gea, lie-mine.gea@boeing.com, Boeing Engineering Operations & Technology ; Co-Chair: Chen Chuck, chen.chuck@boeing.com, Boeing Commercial Airplanes	
3:30-4:00 PM	<b>AIAA-2016-4610. Parallel Hybrid Gas-Electric Geared Turbofan Engine Conceptual Design and Benefits Analysis</b> C.E. Lents; L.W. Hardin; J. Rheame; L. Kohlman
4:00-4:30 PM	<b>AIAA-2016-4611. NASA Turbo-electric Distributed Propulsion Bench</b> K.V. Papathakis; K.J. Kloesel; Y. Lin; S.C. Clarke; J.J. Ediger; S.R. Ginn
4:30-5:00 PM	<b>AIAA-2016-4612. Hybrid Regional Aircraft: A Comparative Review of New Potentials Enabled by Electric Power</b> J. Thauvin; G. Barraud; M. Budinger; X. Roboam; D. Leray; B. Sareni
5:00-5:30 PM	<b>AIAA-2016-4613. Airbus Group Electrical Aircraft Program, The E-Fan Project</b> L. Juvé; J. Fosse; E. Joubert; N. Fouquet
3:30 PM-6:00 PM, 151 G, APS-02. <b>Space Transportation Development and Progress</b> , Panel, <b>14th International Energy Conversion Engineering Conference (non-paper sessions)</b> , Chair: Paul Anderson, paul.m.anderson@lmco.com, Lockheed Martin Space Systems	
3:30 PM-6:00 PM, 251 C, ECS-01. <b>Energetic Material, Detonation Transition and Ignition of Components</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: James Baglini, jlbaglini@exodynamics.com, Exodynamics Technology Incorporated; Co-Chair: Stephanie Sawhill, stephanie.sawhill@systema.com, Systema Technologies, Inc.	
3:30-4:00 PM	<b>AIAA-2016-4614. The Evolution of Retonation During DDT of Low Density HMX</b> K.A. Gonthier; P. Rao
4:00-4:30 PM	<b>AIAA-2016-4615. Multiscale Simulation of Shock to Detonation</b> E.P. Fahrenthold

3:30 PM-6:00 PM, 151 DE, EDES-02. <b>Energy Technologies for Aerospace and Terrestrial Applications</b> , Technical Paper, <b>14th International Energy Conversion Engineering Conference</b> , Chair: Scott Duncan, sduncan@asdl.gatech.edu, Aerospace Systems Design Laboratory, Georgia Tech; Co-Chair: Lee Mason, lee.s.mason@nasa.gov, NASA Glenn Research Center	
3:30-4:00 PM	<b>AIAA-2016-4616. Improving the Simple Gas Turbine Cycle with Compressed Air Energy Storage (CAES)</b> P. Lemieux
4:00-4:30 PM	<b>AIAA-2016-4617. Efficient Liquid Fuel Consumption in Household Cooking Appliances without Back-flow Tendencies</b> F. Ajibade; E.O. Ogedengbe
3:30 PM-6:00 PM, 250 A, EP-06. <b>Hall Thruster Physics &amp; Modeling II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Justin Koo, koojie@gmail.com, ; Co-Chair: Cesar Huerta, cesar@seas.ucla.edu,	
3:30-4:00 PM	<b>AIAA-2016-4618. Hall2De Simulations with a First-principles Electron Transport Model Based on the Electron Cyclotron Drift Instability</b> I.G. Mikellides; B. Jorns; I. Katz; A. Lopez Ortega
4:00-4:30 PM	<b>AIAA-2016-4619. Continuum Kinetic Study of Magnetized Sheaths for Use in Hall Thrusters</b> P. Cagas; B. Srinivasan; A. Hakim
4:30-5:00 PM	<b>AIAA-2016-4620. Comparing Two-Dimensional, Axisymmetric, Hybrid-Direct Kinetic and Hybrid-Particle-in-Cell Simulations of the Discharge Plasma in a Hall Thruster</b> A. Raisanen; K. Hara; I.D. Boyd
5:00-5:30 PM	<b>AIAA-2016-4621. Development of a hybrid particle-continuum kinetic method for Hall thruster discharge plasmas</b> K. Hara; S. Cho
3:30 PM-6:00 PM, 250 B, EP-07. <b>Hall Thruster Development</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: William Hargus, william.hargus@us.af.mil, USAF/AFRL/RQRC; Co-Chair: Gary Li, g.li@ucla.edu	
3:30-4:00 PM	<b>AIAA-2016-4622. Parametric studies of velocity distribution functions for Xenon ions and neutrals in cylindrical Hall thruster by laser-induced fluorescence</b> I. Romadanov; P. Svarnas; A. Diallo; Y. Raitses; A. Smolyakov
4:00-4:30 PM	<b>AIAA-2016-4623. Annular Hall Thruster with High Anode Efficiency</b> S. Lee; H. Kim; J. Kim; Y. Lim; W. Choe
4:30-5:00 PM	<b>AIAA-2016-4624. Laser Induced Fluorescence Measurements in a Hall Thruster as a Function of Background Pressure</b> R. Spektor; W.G. Tighe
5:00-5:30 PM	<b>AIAA-2016-4625. Operational Properties of UT-58 Anode Layer Hall Thruster with Modified Magnetic Field and Guard-ring Material</b> J. Bak; Y. Hamada; Y. Hirano; K. Komurasaki; T. Schönherr; H. Koizumi

3:30 PM-6:00 PM, 250 C, EP-08. <b>Hollow Cathode Physics &amp; Modeling</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Wensheng Huang, wensheng.huang@nasa.gov, NASA Glenn Research Center; Co-Chair: Jason Frieman, jfrieman3@gatech.edu,	
3:30-4:00 PM	<b>AIAA-2016-4626. First-principles Modelling of the IAT-driven Anomalous Resistivity in Hollow Cathode Discharges I: Theory</b> B. Jorns; A. Lopez Ortega; I.G. Mikellides
4:00-4:30 PM	<b>AIAA-2016-4627. First-principles modeling of the IAT-driven anomalous resistivity in hollow cathode discharges II: Numerical simulations and comparison with measurements</b> A. Lopez Ortega; I.G. Mikellides; B. Jorns
4:30-5:00 PM	<b>AIAA-2016-4628. Numerical and Experimental Study on Discharge Characteristics of High-Current Hollow Cathode</b> K. Kubota; Y. Oshio; H. Watanabe; S. Cho; Y. Ohkawa; I. Funaki
5:00-5:30 PM	<b>AIAA-2016-4629. The High Frequency Potential Oscillations Near the Hollow Cathode in Ion Thrusters</b> Y. Qin; K. Xie; Q. Xia; J. Ouyang
3:30 PM-6:00 PM, 250 D, EP-09. <b>NEXT Ion Thruster Development</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Eric Cardiff, Eric.H.Cardiff@nasa.gov, NASA; Co-Chair: Daniel Herman, daniel.a.herman@nasa.gov, NASA Glenn Research Ctr	
3:30-4:00 PM	<b>AIAA-2016-4630. Post-test Examination of NASA's Evolutionary Xenon Thruster Long-Duration Test Hardware: Discharge Chamber</b> R. Shastry; G.C. Soulas
4:00-4:30 PM	<b>AIAA-2016-4631. Post-test Examination of NASA's Evolutionary Xenon Thruster Long-Duration Test Hardware: Discharge and Neutralizer Cathodes</b> R. Shastry; G.C. Soulas
4:30-5:00 PM	<b>AIAA-2016-4632. Post-test Examination of NASA's Evolutionary Xenon Thruster Long-Duration Test Hardware: Ion Optics</b> G.C. Soulas; R. Shastry
5:00-5:30 PM	<b>AIAA-2016-4633. NEXT Thruster Performance Curve Analysis And Validation</b> P. Saripalli; E.H. Cardiff; J.A. Englander
3:30 PM-6:00 PM, Ballroom F, <b>F360-02. Launch Vehicle Reusability: Holy Grail, Chasing Our Tail, or Somewhere in Between</b> , Forum 360, <b>Forum 360</b>	
3:30 PM-6:00 PM, 150 DE, <b>FFP-01. Fossil-Fuel Power Technologies I</b> , Technical Paper, <b>14th International Energy Conversion Engineering Conference</b> , Chair: Bhupendra Khandelwal, bhupendra.khandelwal@gmail.com, The University of Sheffield; Co-Chair: Ahsan Choudhuri, ahsan@utep.edu, University of Texas at El Paso	
3:30-4:00 PM	<b>AIAA-2016-4634. Investigation on Flow-Flame Front Characteristics in a Backward Facing Step Combustor Using Laser Diagnostics</b> A. Acosta-Zamora; M. de la Torre; N.D. Love; A.R. Choudhuri

4:00-4:30 PM	<b>AIAA-2016-4635. Conceptual Study of Oxy-Methane Flows in a Constant-Velocity Faraday Magnetohydrodynamic Generator</b> M.J. Hernandez; L.A. Cabrera; A.R. Choudhuri; N.D. Love
4:30-5:00 PM	<b>AIAA-2016-4636. Conceptual Design of a Supercritical Oxyfuel Combustor Based on LOX/Methane Rocket Engine Technologies</b> A.R. Chowdhury; A. Badhan; L.A. Cabrera; A.R. Choudhuri; N.D. Love
5:00-5:30 PM	<b>AIAA-2016-4637. High Intensity Combustion of Methane and Propane using Oxygen Enhanced Air</b> A. Said; A.K. Gupta
3:30 PM-6:00 PM, 250 F, <b>GTE-04. Thermodynamic Topics of Gas Turbine Engines</b> , Technical Paper, <b>52nd AIAA/SAE/ASME Joint Propulsion Conference</b> , Chair: Xinfeng Gao, Xinfeng.Gao@colostate.edu, Colorado State Univ	
3:30-4:00 PM	<b>AIAA-2016-4638. Exergy-Based Performance Analysis of a Turbojet Engine</b> M. Abbas; D.W. Riggins
4:00-4:30 PM	<b>AIAA-2016-4639. Gas Turbine Transient Response to Subsystem Architecture Secondary Power Off-Takes</b> M.F. Ozcan; I. Chakraborty; J.C. Tai; D.N. Mavris
4:30-5:00 PM	<b>AIAA-2016-4640. Environmental Assessment of a Micro Turbojet Engine with the Aid of Exergy</b> K. Coban; Y. Sohret; T. Karakoc; C. Colpan
5:00-5:30 PM	<b>AIAA-2016-4641. Aerothermodynamic Benefits of Mixed Exhaust Turbofans</b> S.J. Khalid
3:30 PM-6:00 PM, 251 A, <b>GTE-05. Compressors I</b> , Technical Paper, <b>52nd AIAA/SAE/ASME Joint Propulsion Conference</b> , Chair: Magdy Attia, magdy.attia@erau.edu, Embry-Riddle Aeronautical University	
3:30-4:00 PM	<b>AIAA-2016-4642. Rotor Blade Fault Detection through Statistical Analysis of Stationary Component Vibration</b> J.R. Cox; S. Arnold; P. Anusonti-Inthra
4:00-4:30 PM	<b>AIAA-2016-4643. Stationary Simulation of the Fluid-Structure Interaction to Determine the Operating Geometry of a Blade in a Transonic Axial Compressor</b> S.M. Aberle; R. Niehuis
4:30-5:00 PM	<b>AIAA-2016-4644. A Hybrid Vortex Solution for Surge Margin Enhancement in Axial Compressors</b> M.S. Attia; D.F. Port; A.V. Rozendaal
5:00-5:30 PM	<b>AIAA-2016-4645. Stall and Surge Characteristics of a Two-Volume Compression System</b> A.R. Hickman; S.C. Morris
5:30-6:00 PM	<b>AIAA-2016-4646. Computational Study of the Effects of Protruding Studs Casing Treatment on the Performance of an Axial Transonic Turbofan</b> M.D. Collao; R.S. Webster; K. Sreenivas; W. Lin

3:30 PM-6:00 PM, 251 B, **GTE-06. Air-Breathing Combustors II**, Technical Paper, **52nd AIAA/SAE/ASEE Joint Propulsion Conference**, Chair: May-Fun Liou, may-fun.liou@nasa.gov, NASA Glenn Research Center; Co-Chair: Andrew Caswell, andrew.caswell.4@us.af.mil, USAF AFRL/RQTC

3:30-4:00 PM	<b>AIAA-2016-4647. Investigation of differences in lean blowout of liquid single-component fuels in a gas turbine model combustor</b> J. Grohmann; B. Rauch; T. Kathrotia; W. Meier; M. Aigner
4:00-4:30 PM	<b>AIAA-2016-4648. The Effect of Axial Spacing of Constant and Variable Blockages on the Deflagration to Detonation Transition in a Pulse Detonation Engine</b> N. Gagnon; M.S. Attia
4:30-5:00 PM	<b>AIAA-2016-4649. Precursors to blowout in a turbulent combustor based on recurrence quantification</b> V.R. Unni; R.I. Sujith
5:00-5:30 PM	<b>AIAA-2016-4650. The Impact of Venturi Geometry on Reacting Flows in a Swirl-Venturi Lean Direct Injection Airblast Injector</b> X. Ren; X. Xue; C. Sung; K.B. Brady; H.C. Mongia; P. Lee
5:30-6:00 PM	<b>AIAA-2016-4651. Enhancement of the Open National Combustor Code (Open NCC) and Initial Simulation of Energy Efficient Engine</b> K. Miki; J.P. Moder; M. Liou

3:30 PM-6:00 PM, 254 B, **GTE-09. Engine Control Systems**, Technical Paper, **52nd AIAA/SAE/ASEE Joint Propulsion Conference**, Chair: David Foutch, david.w.foutch@boeing.com, The Boeing Company

3:30-4:00 PM	<b>AIAA-2016-4652. A Network Scheduling Model for Distributed Control Simulation</b> D.E. Culley; E. Aretskin-Hariton; G.L. Thomas
4:00-4:30 PM	<b>AIAA-2016-4653. Advanced Control Considerations for Turbofan Engine Design</b> J.W. Connolly; J. Csank; A. Chicatelli
4:30-5:00 PM	<b>AIAA-2016-4654. The Application of Hardware in the Loop Testing for Distributed Engine Control</b> G.L. Thomas; D.E. Culley; A. Brand
5:00-5:30 PM	<b>AIAA-2016-4655. Aircraft Engine Advanced Controls Research under NASA Aeronautics Research Mission Programs</b> S. Garg

3:30 PM-6:00 PM, 255 B, **HR-02. Design and Development of Novel Hybrid Rocket Motor Concepts I**, Technical Paper, **52nd AIAA/SAE/ASEE Joint Propulsion Conference**, Chair: Mario Kobald, mario.kobald@dlr.de, DLR-German Aerospace Center; Co-Chair: Shane Coogan, shane.coogan@swri.org, Southwest Research Institute

3:30-4:00 PM	<b>AIAA-2016-4656. Hybrid Propulsion In-Situ Resource Utilization Test Facility Results for Performance Characterization</b> F.S. Mechental; A.C. Karp; B. Nakazono; M. Parker; D. Vaughan
4:00-4:30 PM	<b>AIAA-2016-4657. Experimental Evaluation of a Polyethylene/Nitrous Oxide Axial-Injection, End-Burning Hybrid</b> M.A. Hitt; R.A. Frederick



4:30-5:00 PM	<b>AIAA-2016-4658. Throttled Launch-Assist Hybrid Rocket Motor for an Airborne NanoSat Launch Platform.</b> S.A. Whitmore; Z.S. Spurrier; S.D. Walker; S.L. Merkley
5:00-5:30 PM	<b>AIAA-2016-4659. Investigation on Tri-propellant Hybrid Rocket Performance</b> Y. Chen; A. Lai; J. Lin; S. Wei; T. Chou; J. Wu
3:30 PM-6:00 PM, 255 A, <b>HSABP-04. Advances in Hypersonic Air-Breathing Propulsion Systems</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Erik Axdahl, Erik.L.Axdahl@NASA.gov, NASA Langley Research Center; Co-Chair: Guillermo Paniagua, gpaniagua@me.com, Purdue University	
3:30-4:00 PM	<b>AIAA-2016-4660. Experimental and Numerical Studies of Kerosene Fueled Scramjet Control Technology</b> Q. Fu
4:00-4:30 PM	<b>AIAA-2016-4661. Characterization of the time-resolved starting process of supersonic diffusers</b> N. Thiry; G. Paniagua
4:30-5:00 PM	<b>AIAA-2016-4662. Prediction of Mixing Efficiency between Incoming Air and Embedded Rocket Exhaust within an RBCC Engine</b> T. Isono; R. Nakano; S. Tomioka; K. Kudo; A. Murakami; S. Ueda
3:30 PM-6:00 PM, 251 D, <b>LP-04. Green Propellants II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Eric Besnard, besnarde@csulb.edu, California State University–Long Beach; Co-Chair: Christoph Kirchberger, christoph.kirchberger@dlr.de, German Aerospace Center (DLR)	
3:30-4:00 PM	<b>AIAA-2016-4663. Predicting Flashing Phenomena: A Combined Approach of Numerical Simulation and Experiments</b> C. Hendrich; L. Gury; S. Schlechtriem
4:00-4:30 PM	<b>AIAA-2016-4664. Combustion Characteristics of GAP for the Liquid Monopropellant -Effects of the Spray Droplet Diameters-</b> K. Hayashi; T. Kuwahara
4:30-5:00 PM	<b>AIAA-2016-4665. Overview on the Gelled Propellants Activities of DLR Lampoldshausen</b> C.U. Kirchberger; P. Kröger; M. Negri; H.K. Ciezki
5:00-5:30 PM	<b>AIAA-2016-4666. Long Duration Test Runs of a Highly Throttleable Gelled Propellant Rocket Motor</b> P.C. Pinto; J. Ramsel; K. Bauer; S. Risse; K.W. Naumann; A. Thumann; G. Kurth
5:30-6:00 PM	<b>AIAA-2016-4667. Green Gelled Propellant Gas Generator for High-Performance Divert- and Attitude Control Systems</b> K.W. Naumann; G. Tussiwand
3:30 PM-6:00 PM, 251 E, <b>LP-05. Nozzles I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Kevin Lohner, kevinlohner@gmail.com, Stanford University	
3:30-4:00 PM	<b>AIAA-2016-4668. Experimental investigation of cold flow TIC nozzles, a spectral analysis</b> C. Genin; R.H. Stark

4:00-4:30 PM	<b>AIAA-2016-4669. Scaling Effects on Side Load Generation in Subscale Rocket Nozzles</b> R.H. Stark; C. Genin
4:30-5:00 PM	<b>AIAA-2016-4670. Hybrid RANS-LES Simulation of Separated Nozzle Flow</b> R. Larusson; N. Andersson; J. Östlund
5:00-5:30 PM	<b>AIAA-2016-4671. A Numerical Model for Nozzle Flow Application under LOX/CH4 Hot Flow Conditions</b> D. Schneider; C. Genin; S. Karl; V. Hannemann
5:30-6:00 PM	<b>AIAA-2016-4672. CFD Analysis of Film Cooling and Heat Transfer in a Bipropellant Rocket Nozzle, Incorporating Chemically Reacting Flow</b> N. Amato; J.C. Leylegian; M.H. Naraghi
3:30 PM-6:00 PM, 251 F, LP-06. <b>Propellant Storage &amp; Transfer II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Philipp Behruzi, Philipp.Behruzi@airbus.com, Airbus Defence & Space; Co-Chair: Stewart Bushman, stewart.bushman@jhuapl.edu, Johns Hopkins University Applied Physics Laboratory	
3:30-4:00 PM	<b>AIAA-2016-4673. Modeling Droplet Heat and Mass Transfer during Spray Bar Pressure Control of the Multipurpose Hydrogen Test Bed (MHTB) Tank in Normal Gravity</b> O.V. Kartuzova; M. Kassemi
4:00-4:30 PM	<b>AIAA-2016-4674. Self-Pressurization of a Flightweight, Liquid Hydrogen Tank: Simulation and Comparison with Experiments</b> M. Stewart; J.P. Moder
4:30-5:00 PM	<b>AIAA-2016-4675. Numerical Approach to Measure Accommodation Coefficients for Long-Duration Spaceflight Cryogenic Propellants</b> S.J. Alberts; P. Srikanth; S.H. Collicott; S.D. Heister
5:00-5:30 PM	<b>AIAA-2016-4676. Numerical Modeling of Pressurization of Cryogenic Propellant Tank for Integrated Vehicle Fluid System</b> A.K. Majumdar; A. LeClair; A. Hedayat
5:30-6:00 PM	<b>AIAA-2016-4677. Modeling Ullage Dynamics of Tank Pressure Control Experiment during Jet Mixing in Microgravity</b> O.V. Kartuzova; M. Kassemi
3:30 PM-6:00 PM, 253 AB, LP-07. <b>Propulsion Systems - Design &amp; Test I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Corinne Gatto, Corinne.E.Gatto@jpl.nasa.gov, Jet Propulsion Laboratory; Co-Chair: Robert Bell, cryoteach@aol.com, Sierra Nevada	
3:30-4:00 PM	<b>AIAA-2016-4678. Vinci® propulsion system: Transition from Ariane 5 ME to Ariane 6</b> J. Sannino; J. Delange; V. De Korver; A. Lekeux; B. Vieille
4:00-4:30 PM	<b>AIAA-2016-4679. Extending MESSENGER's Low-Altitude Hover Campaign by Using Helium Pressurant as Cold-Gas Propellant</b> S.S. Bushman; C. Engelbrecht; S. Flanigan; M. Kirk; J. McAdams; D. Moessner

4:30-5:00 PM	<b>AIAA-2016-4680. Primary Mission Flight Performance of the Van Allen Probes Propulsion Systems</b> J.W. John; S.S. Bushman
5:00-5:30 PM	<b>AIAA-2016-4681. Integrated Pressure-Fed Liquid Oxygen / Methane Propulsion Systems – Morpheus Experience, MARE, and Future Applications</b> E.A. Hurlbert; M.J. Atwell; J.C. Melcher; R.L. Morehead
5:30-6:00 PM	<b>AIAA-2016-4682. Cold Helium Pressurization for Liquid Oxygen / Liquid Methane Propulsion Systems: Fully-Integrated Initial Hot-Fire Test Results</b> R.L. Morehead; M.J. Atwell; J.C. Melcher; E.A. Hurlbert
3:30 PM-6:00 PM, 150 G, NFF-01. <b>Fusion and Alternative Nuclear Concepts I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Jason Cassibry, Jason.Cassibry@uah.edu, ; Co-Chair: George Williams, george.j.williams@nasa.gov, Ohio Aerospace Institute	
3:30-4:00 PM	<b>AIAA-2016-4683. Progress on Computational Modeling of Z-Pinch Nuclear Fusion Reactor Components for Spacecraft Propulsion</b> M.A. Rodriguez; J.T. Cassibry
4:00-4:30 PM	<b>AIAA-2016-4684. Development of a magnetic thrust chamber for a laser fusion rocket</b> M. Edamoto; N. Saito; T. Morita; N. Yamamoto; A. Sunahara; R. Kawashima; S. Miura; Y. Itadani; H. Nakashima; S. Fujioka; A. Yogo; H. Nishimura; Y. Mori; T. Johzaki
4:30-5:00 PM	<b>AIAA-2016-4685. On the Use of a Pulsed Nuclear Thermal Rocket for Interplanetary Travel.</b> F.J. Arias
5:00-5:30 PM	<b>AIAA-2016-4686. Test Suite for Hydrodynamic Modeling for Plasma Driven Magneto-Inertial Fusion</b> K.J. Schillo; J.T. Cassibry; M.A. Rodriguez
3:30 PM-6:00 PM, 255 C, PC-03. <b>Ignition</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Bruce Chehrouddhi, chehrouddhi@aol.com, Advanced Technology Consultants; Co-Chair: Subith Vasu, subith@ucf.edu, University of Central Florida	
3:30-4:00 PM	<b>AIAA-2016-4687. Ignition and Flame Propagation in a Liquid-Fueled Swirling Combustor</b> M.M. Masquelet; S. Cao; M. Pai
4:00-4:30 PM	<b>AIAA-2016-4689. Alternative Jet Fuel Spray and Combustion at Intermittent-Combustion Engine Conditions</b> J. Temme; M. Tess; C.M. Kweon; V. Coburn
4:30-5:00 PM	<b>AIAA-2016-4690. Burning Rate and Ignition Delay Times of AP/HTPB-Based Solid Rocket Propellants Containing Graphene</b> C.A. Dillier; A.R. Demko; T. Sammet; K. Grossman; S. Seal; E.L. Petersen
5:00-5:30 PM	<b>AIAA-2016-4691. Shock Tube Ignition Studies of Advanced Biofuels</b> O. Pryor; G. Barari; B. Koroglu; J. Lopez; L. Nash; S. Vasu
5:30-6:00 PM	<b>AIAA-2016-4688. Design and Test of a Resonance Ignition System for Green In-Orbit Propulsion Systems</b> C. Bauer; O.J. Haidn

3:30 PM-6:00 PM, 255 D, <b>PC-04. Spray Combustion</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: William Anderson, wanderso@purdue.edu, Purdue University; Co-Chair: Grazia Lamanna, gl@itlr.uni-stuttgart.de, Universitaet Stuttgart	
3:30-4:00 PM	<b>AIAA-2016-4692. Experimental Combustion Investigations from Like-Impingement Sprays of Green Propellants</b> C. Indiana; M. Bellenoue; B. Boust; S. Petitot
4:00-4:30 PM	<b>AIAA-2016-4693. Influence of Sleeve Angle on the LBO Performance of TeLESS-II Combustor</b> B. Wang; C. Zhang; X. Hui; Y. Lin; J. Li
4:30-5:00 PM	<b>AIAA-2016-4694. A Hybrid Eulerian-Eulerian/Eulerian-Lagrangian Method for Dense-to-Dilute Dispersed Multiphase Reacting Flows</b> A. Panchal; G. Hannebique; R. Ranjan; M. Akiki; S. Menon
5:00-5:30 PM	<b>AIAA-2016-4695. Crosswise Distribution of Kerosene Spray in Crossflow</b> Y. Zhao; C. Zhang; Y. Lin; Y. Cheng
3:30 PM-6:00 PM, 255 E, <b>PC-05. Advanced Concepts</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Richard Hausen, richard.hausen@honeywell.com, Honeywell; Co-Chair: Adam Steinberg, steinberg@utias.utoronto.ca, University of Toronto	
3:30-4:00 PM	<b>AIAA-2016-4696. Analysis of MHD Generators for use with solid rocket motors</b> Y. Metsker; J. Kugele; S. Nobbe; O.J. Haidn
4:00-4:30 PM	<b>AIAA-2016-4697. Application of Additive manufacturing in Solid and Hybrid Grain Design</b> C. Bauer; Y. Metsker; C. von Sethe; M. Mutschler; M. Bambauer; P. Lungu; M. Brandl
4:30-5:00 PM	<b>AIAA-2016-4698. Experimental and numerical investigation of spray characteristics in a new FLOX<sup>®</sup> based combustor for liquid fuels for Micro Gas Turbine Range Extender (MGT-REX).</b> J.D. Gounder; A. Zizin; L. Oliver; M. Rachner; S.R. Kulkarni; M. Aigner
5:00-5:30 PM	<b>AIAA-2016-4699. Experimental Investigation of Ignition and Combustion Processes in a Constant-Volume Combustion Chamber for Air-Breathing Propulsion</b> B. Boust; Q. Michalski; M. Bellenoue
5:30-6:00 PM	<b>AIAA-2016-4700. Performance and Thermal Characteristics of Low-Power DC Arcjet Thrusters with Radiation-Cooled Anodes for Green Propellants</b> S. Shiraki; H. Tahara
3:30 PM-6:00 PM, 254 A, <b>SR-02. Solid Rocket Modeling and Simulation</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Co-Chair: Enrico Cavallini, enrico.cavallini@uniroma1.it, University of Roma "La Sapienza"; Chair: Joseph Majdalani, joe.majdalani@auburn.edu, Auburn University	
3:30-4:00 PM	<b>AIAA-2016-4701. Local Linear Stability Analysis of Non-Circular Injection-Driven Channel Flows</b> M. Bouyges; F. Chedeveigne; G. Casalis

4:00-4:30 PM	<b>AIAA-2016-4702. Random Vibration Environment Standard Deviation Variation Verification for Solid Rocket Motors</b> R. Ott
4:30-5:00 PM	<b>AIAA-2016-4703. VEGA Launch Vehicle Dynamic Loads due to Solid Propulsion Ignition Transients and Pressure Oscillations</b> E. Cavallini; B. Favini; M. Castelli; A. Neri
3:30 PM-6:00 PM, 151 AB, <b>TM-02. Thermal System Applications and Unique Environments II</b> , Technical Paper, <b>14th International Energy Conversion Engineering Conference</b> , Chair: Calin Tarau, calin.tarau@1-act.com, Advanced Cooling Technologies; Co-Chair: Michael Choi, Michael.K.Choi@nasa.gov, NASA-Goddard Space Flight Center	
3:30-4:00 PM	<b>Oral Presentation. High Temperature Titanium-Water Heat Pipes for Kilopower Fission Power Systems</b> M. Ababneh; W.G. Anderson; D. Beard; C. Tarau
4:00-4:30 PM	<b>AIAA-2016-4704. Swift BAT Thermal Recovery After Loop Heat Pipe #0 Secondary Heater Controller Failure in October 2015</b> M.K. Choi
4:30-5:00 PM	<b>AIAA-2016-4705. Status of the Development of Low Cost Radiator for Surface Fission Power - III</b> C. Tarau; T.P. Maxwell; W.G. Anderson; C. Wagner; M. Wrosch; M.H. Briggs
3:30 PM-6:00 PM, 254 C, <b>VS-01. Advanced Vehicle Systems Concepts</b> , Technical Paper, <b>52nd AIAA/SAE/ASME Joint Propulsion Conference</b> , Chair: Frank Chandler, fochandler@cpp.edu, Boeing Defense, Space & Security; Co-Chair: Timothy Chen, timothy.t.chen@gmail.com, NASA	
3:30-4:00 PM	<b>AIAA-2016-4706. Hypersonic Waverider Stream Surface Actuation for Variable Design Point Operation</b> J.R. Maxwell
4:00-4:30 PM	<b>AIAA-2016-4707. Disruptive Propulsion Technology Makes Endo/Exoatmosphere Operating Commercial Aircraft Possible</b> B. Pande
6:00 PM-7:30 PM, Exhibit Hall C, <b>NW-03. Welcome Reception, Networking</b>	
7:30 PM-9:30 PM, 150 G, <b>NFF-02. Open Forum: Nuclear Propulsion in the 21st Century</b> , Panel, <b>52nd AIAA/SAE/ASME Joint Propulsion Conference (non-paper sessions)</b> , Chair: Raymond Sedwick, sedwick@umd.edu, University of Maryland	

Tuesday, July 26, 2016

Time	Session or Event Info
8:00 AM-9:00 AM, Ballroom A-D, <b>PLNRY-03. Game Changing Developments in Propulsion and Energy</b> , Plenary, <b>Forum Event</b>	
8:45 AM-9:30 AM, Exhibit Hall C, <b>NW-04. Networking Coffee Break</b> , Networking	

9:30 AM-12:00 PM, 255 F, <b>ABPSI-03. Supersonic and Hypersonic Inlets</b> , Technical Paper, <b>52nd AIAA/SAE/ASSEE Joint Propulsion Conference</b> , Chair: John Slater, john.w.slater@nasa.gov, NASA Glenn Research Center; Co-Chair: Ryan Starkey, ryan.p.starkey@raytheon.com, Raytheon Missile Systems	
9:30-10:00 AM	<b>AIAA-2016-4708. Role of wall temperature on shock train in a rectangular isolator</b> H. Lu; D. Wang; Z. Liu; L. Yue; X. Zhang
10:00-10:30 AM	<b>AIAA-2016-4709. Computational experiments for improving the performance of Fugine based on supermulti-jets colliding working for a wide range of speeds from startup to hypersonic condition</b> K. Tsuru; K. Naitoh
10:30-11:00 AM	<b>AIAA-2016-4710. Investigation on Strut-based RBCC Engine Configuration to Improve Performance in M3-6</b> D. Yan; G. He; F. Qin; X. Wei; L. Shi
9:30 AM-12:00 PM, 150 DE, <b>AEP-02. Aircraft Electric Propulsion II</b> , Technical Paper, <b>52nd AIAA/SAE/ASSEE Joint Propulsion Conference</b> , Chair: Lie-Mine Gea, lie-mine.gea@boeing.com, Boeing Engineering Operations & Technology ; Co-Chair: Chen Chuck, chen.chuck@boeing.com, Boeing Commercial Airplanes	
9:30-10:00 AM	<b>AIAA-2016-4711. Principles of High-efficiency Electric Flight</b> J. Barnes
10:00-10:30 AM	<b>AIAA-2016-4712. Optimizing Power Density and Efficiency of a Double-Halbach Permanent-Magnet Ironless Axial Flux Motor</b> K.P. Duffy
10:30-11:00 AM	<b>AIAA-2016-4713. Potential of Aircraft Electric Propulsion with SOFC/GT Hybrid Core</b> K. Okai; T. Himeno; T. Watanabe; H. Nomura; T. Tagashira; A. Nishizawa
9:30 AM-12:00 PM, 151 G, <b>ECD-02. Thermoelectric, Fuel Cell, and Photovoltaic Conversion Systems</b> , Technical Paper, <b>14th International Energy Conversion Engineering Conference</b> , Chair: Carl Sandifer, carl.e.sandifer@nasa.gov, NASA Glenn Research Center; Co-Chair: Scott Wilson, scott.d.wilson@nasa.gov, NASA Glenn Research Center	
9:30-10:00 AM	<b>AIAA-2016-4714. Development of Filled-Skutterudite Based Thermopile for High Temperature Sensors for Space and Terrestrial Applications</b> K.L. Smith; B.C. Li; S. Firdosy; S. Sujittosakul; M. Errico; G. Nakatsukasa; J. Fleurial; R. Ewell
10:00-10:30 AM	<b>AIAA-2016-4715. Development of High Temperature Thermoelectric Device Technologies to Validated Materials Performance and Reliability for Advanced ThermoElectric Couple (ATEC) Program</b> B.C. Li; S. Firdosy; V.A. Ravi; K.L. Smith; D. Uhl; J. Ni; K. Star; S. Sujittosakul; O. Villalpando; M. Aranda; S. Bux; J. Ma; S. Chanakian; G. Nakatsukasa; J. Fleurial
10:30-11:00 AM	<b>AIAA-2016-4716. Thermoelectric Generator Opportunity Analysis for Commercial Gas Turbine Engines</b> J.M. Rheume; D. Gerlach

11:00-11:30 AM	<b>AIAA-2016-4717. Optimal Thickness Analysis of the Microporous Layer in an <i>M.pudica</i> Based Photovoltaic Solar Cell</b> M.B. Shitta; E.O. Ogedengbe; I. Feyintola
11:30-12:00 PM	<b>AIAA-2016-4718. Dynamic Model of Solid Oxide Fuel Cell Integrated with Fan and Exhaust Nozzle</b> V. Chakravarthula; R.A. Roberts; M. Wolff
9:30 AM-12:00 PM, 251 C, ECS-02. <b>Updates to Acceptance Methodologies for Energetic Components</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: John Scott, john.g.scott@ulalaunch.com, United Launch Alliance, LLC	
9:30-10:00 AM	<b>AIAA-2016-4719. Variations in the use of dynamics environments in the screening of ordnance components in LAT</b> J.G. Scott; K. Kostecka
10:00-10:30 AM	<b>AIAA-2016-4720. Methodology for Analyzing Non-Steady-State Thermal Transient Test (<math>T^3</math>) Data</b> L.C. Yang
10:30-11:00 AM	<b>AIAA-2016-4721. Technical Evaluation and Proposed Modifications for Ordnance Component Shock and Random Vibration Test Requirements</b> J. Niehues
9:30 AM-12:00 PM, 251 B, EDU-02. <b>Propulsion Education II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Matthew Hitt, mah0004@uah.edu, The University of Alabama in Huntsville; Co-Chair: Rene Rezende, renenardi@hotmail.com,	
9:30-10:00 AM	<b>AIAA-2016-4722. UAH Propulsion Research Center - 25th Anniversary Highlights</b> R.A. Frederick
10:00-10:30 AM	<b>AIAA-2016-4723. K-12 Minority STEM Education Program: MAA Southwest</b> H. Keerthi; P. Uptergrove; M.L. Everett; N.D. Love; A.R. Choudhuri
10:30-11:00 AM	<b>AIAA-2016-4724. An Overview of Combustion Instabilities and Rocket Engine Injector Design</b> C. Staschus; R.A. Frederick
11:00-11:30 AM	<b>AIAA-2016-4725. Overview of X-Ray Techniques for Solid Rocket Propellant Regression Measurements</b> D.A. Jones; R.A. Frederick
9:30 AM-12:00 PM, 250 A, EP-10. <b>Hall Thruster Physics &amp; Modeling III</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: James Polk, james.e.polk@jpl.nasa.gov, Jet Propulsion Laboratory; Co-Chair: Stephen Samples, Stephen.samples@gmail.com,	
9:30-10:00 AM	<b>AIAA-2016-4726. A Unified Model for Axial-Radial and Axial-Azimuthal Hall Thruster Simulations</b> R. Kawashima; K. Hara; K. Komurasaki; H. Koizumi
10:00-10:30 AM	<b>AIAA-2016-4727. Influence of multiple factors on electron behavior and transport process in a miniaturized hall thruster</b> Q. Liu; H. Tang; J. Ren; X. Shi; X. Lu

10:30-11:00 AM	<b>AIAA-2016-4728. The Effects of Cathode Boundary Condition on Particle Simulation of a SPT-100-like Hall Thruster</b> S. Cho; H. Watanabe; K. Kubota; I. Funaki
9:30 AM-12:00 PM, 250 B, EP-11. <b>Hall Thruster Alternative Propellants</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Lyon King, lbking@mtu.edu, Michigan Technological University; Co-Chair: Ben Dankongkakul, BenDankongkakul@gmail.com,	
9:30-10:00 AM	<b>AIAA-2016-4729. Overview of Iodine Propellant Hall Thruster Development Activities at NASA Glenn Research Center</b> H. Kamhawi; T. Haag; G. Benavides; T. Hickman; T. Smith; G. Williams; J.L. Myers; K.A. Polzin; J. Dankanich; L. Byrne; J.J. Szabo; L.P. Lee
10:00-10:30 AM	<b>AIAA-2016-4730. Engineering Model Propellant Feed System Development for an Iodine Hall Thruster Demonstration Mission</b> K.A. Polzin; S.R. Peeples; A. Martinez; J.F. Seixal; S. Mauro; A.O. Burt; J.L. Myers
10:30-11:00 AM	<b>AIAA-2016-4731. Condensable Propellant Hall Thruster for Metallic Thin Film Deposition</b> M.A. Hopkins; L.B. King; J. Drelich; J. Goldman; K. Baker
9:30 AM-12:00 PM, 250 C, EP-12. <b>Hollow Cathode Development</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Ioannis Mikellides, ioannis.g.Mikellides@jpl.nasa.gov, Jet Propulsion Laboratory; Co-Chair: Christopher Dodson, cdodson@ucla.edu	
9:30-10:00 AM	<b>AIAA-2016-4732. Characterization and Qualification of a Low Current Heaterless Hollow Cathode</b> D.R. Lev; G. Alon; D. Mikitchuk; L. Appel
10:00-10:30 AM	<b>AIAA-2016-4733. Advanced Dispenser-Type Cathode Development for Electric Propulsion</b> W.L. Ohlinger; B. Vancil; J.E. Polk
9:30 AM-12:00 PM, 250 D, EP-13. <b>Helicon Thruster</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Eric Pencil, Eric.J.Pencil@nasa.gov, NASA Glenn Research Center; Co-Chair: Neil Arthur, arthurne@umich.edu,	
9:30-10:00 AM	<b>AIAA-2016-4734. Current Status of the Helicon Injected Inertial Plasma Electrostatic Rocket</b> D.M. Ahern; G. Miley
10:00-10:30 AM	<b>AIAA-2016-4735. Effects of Water Vapor Propellant on Helicon Thruster Performance</b> E.M. Petro; R.J. Sedwick
10:30-11:00 AM	<b>AIAA-2016-4736. A Solid Propellant High Power Helicon Thruster</b> I.K. Johnson; B. Roberson; R. Winglee; I. Slobodov; J. Prager; T. Ziemba
11:00-11:30 AM	<b>AIAA-2016-4737. Effects of Magnetic Nozzles and a Downstream Antenna to the High Power Helicon Thruster</b> B. Roberson; I.K. Johnson; I. Slobodov; R. Winglee; J. Prager; T. Ziemba



9:30 AM-12:00 PM, 250 E, **EP-14. Electro Spray II**, Technical Paper, **52nd AIAA/SAE/ASEE Joint Propulsion Conference**, Chair: John Dankanich, john.dankanich@nasa.gov, NASA Marshall Space Flight Center; Co-Chair: Catherine Miller, cmiller8991@gmail.com,

9:30-10:00 AM	<b>AIAA-2016-4738. Microfluidic Electro Spray Propulsion(MEP) Thruster Performance with Microfabricated Emitter Arrays for Indium Propellant</b> C. Marrese-Reading
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10:00-10:30 AM	<b>AIAA-2016-4739. Electro Spray Thruster Propellant Feedsystem for a Gravity Wave Observatory Mission</b> N.R. Demmons; N. Lamarre; J.K. Ziemer; M. Parker; D. Spence
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10:30-11:00 AM	<b>AIAA-2016-4740. Mass Spectrometry of Selected Ionic Liquids in Capillary Electro Spray at Nanoliter Volumetric Flow Rates</b> S.W. Miller; B.D. Prince; R.J. Bemish; J. Rovey
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9:30 AM-12:00 PM, Ballroom F, **F360-03/LP-11. Liquid Propulsion History Session: Lessons Learned**, Panel, **52nd AIAA/SAE/ASEE Joint Propulsion Conference (non-paper sessions)**, Chair: Benjamin Austin, bjaustin@inspacellc.com, IN Space LLC; Co-Chair: William Marshall, william.m.marshall@nasa.gov, NASA-Glenn Research Center

9:30 AM-12:00 PM, 254 B, **GEPC-01. Low Carbon Aviation-Propulsion Integration, Gas Turbines, and Fuels**, Technical Paper, **52nd AIAA/SAE/ASEE Joint Propulsion Conference**, Chair: Marty Bradley, marty.k.bradley@boeing.com, Boeing Commercial Airplanes; Co-Chair: Tarek Abdel-Salam, abdel-salamt@ecu.edu, East Carolina University

9:30-10:00 AM	<b>Oral Presentation. National Research Council - Low Carbon Aviation: Study Background and Expectations</b> B. Esker
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10:00-10:30 AM	<b>Oral Presentation. Sustainable Alternative Jet Fuel Deployment for Low Carbon Aviation: Goals, Progress, and Research Needs Remaining</b> S. Csonka
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10:30-11:00 AM	<b>Oral Presentation. The Role and Future of Gas Turbine Propulsion in Low Carbon Aviation</b> A. Epstein
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11:00-11:30 AM	<b>Oral Presentation. Technologies and Innovation for Low Carbon Aviation</b> E. Ducharme
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11:30-12:00 PM	<b>Oral Presentation. Low Carbon Aviation: Fleet Level System Studies</b> D. DeLaurentis
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9:30 AM-12:00 PM, 250 F, **GTE-07. Turbines II**, Technical Paper, **52nd AIAA/SAE/ASEE Joint Propulsion Conference**, Chair: Mark Ricklick, Mark.Ricklick@erau.edu, Embry Riddle Aeronautical University

9:30-10:00 AM	<b>AIAA-2016-4741. Validation of Magnetic Resonance Thermometry through Experimental and Computational Approaches</b> J. Spirnak; M. Samland; B. Tremont; A. McQuirter; E. Williams; M. Benson; B. Van Poppel; C. Verhulst; C. Elkins; L. Burton; J.K. Eaton; M. Owkes
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10:00-10:30 AM	<b>AIAA-2016-4742. Experimental Analysis of an Axial Turbine Driven by Periodic Pressure Pulses</b> M. Fernelius; S.E. Gorrell
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10:30-11:00 AM	<b>AIAA-2016-4743. A Detailed Experimental and Numerical Investigation of Flow and Heat Transfer in a Single Row Narrow Impingement Channel Using PIV and LES</b> J. Hossain; E. Fernandez; J.S. Kapat
9:30 AM-12:00 PM, 251 A, <b>GTE-08. Compressors II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Karthik Mani, karthik.mani@rolls-royce.com, Rolls-Royce Corporation	
9:30-10:00 AM	<b>AIAA-2016-4744. Design and Analysis of a High Pressure Ratio Mixed Flow Compressor Stage</b> A. Nassar; G. Giri; L. Moroz; A. Sherbina; I. Klimov
10:00-10:30 AM	<b>AIAA-2016-4745. Validation of a Two-Equation VLES Turbulence Model Using a Transonic Axial Compressor Stage</b> R. Kelly; A.R. Hickman; K. Shi; S.C. Morris; A. Jemcov
10:30-11:00 AM	<b>AIAA-2016-4746. Implementation of Fourier methods in CFD to analyze distortion transfer and generation through a transonic fan</b> M.W. Peterson; S.E. Gorrell; M.G. List; C. Custer
9:30 AM-12:00 PM, 253 AB, <b>HR-03. Internal Ballistics Modeling I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Brian Evans, bevans7@stanford.edu, Stanford University; Co-Chair: Scott Clafin, scott.clafin@rocket.com, Aerojet Rocketdyne	
9:30-10:00 AM	<b>AIAA-2016-4747. Method for Determining Nozzle Throat Erosion History in Hybrid Rockets</b> L.T. Kamps; Y. Saito; R. Kawabata; Y. Takahashi; H. Nagata
10:00-10:30 AM	<b>AIAA-2016-4748. Numerical analysis of grain port scale and firing test of long-time working hybrid motor</b> X. Sun; H. Tian; Y. Zhang; H. Zhu
10:30-11:00 AM	<b>AIAA-2016-4749. Optimization of Hybrid Sounding Rockets Through Coupled Motor-Trajectory Simulation</b> M. Ghilardi; F. Barato; D. Pavarin
11:00-11:30 AM	<b>AIAA-2016-4750. Scaling of Hybrid Rocket Motors with Swirling Oxidizer Injection - Part 2</b> E. Paccagnella; F. Barato; D. Pavarin; A.M. Karabeyoglu
11:30-12:00 PM	<b>AIAA-2016-4751. Quasi 1-D Numerical Analysis of Combustion Instability in Hybrid Rocket Motor Incorporating Boundary Layer Lags</b> G. Karthikeyan; T. Shimada
9:30 AM-12:00 PM, 255 B, <b>HR-04. Combustion Dynamics and Mixing Efficiencies II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Brian Cantwell, cantwell@stanford.edu, Stanford University; Co-Chair: Yen-Sen Chen, ychen_esi@yahoo.com, National Space Organization Taiwan	

9:30-10:00 AM	<b>AIAA-2016-4752. Experimental and Analytical Investigation of Effect of Pressure on Regression Rate of Axial-Injection End-Burning Hybrid Rockets</b> Y. Saito; T. Yokoi; H. Nagata; H. Yasukochi; K. Soeda; T. Totani; M. Wakita
10:00-10:30 AM	<b>AIAA-2016-4753. Measuring Nozzle Erosion in a Hybrid Rocket Motor with Ultrasound</b> P. Narsai; K. Venkataraman; K. Stober; B.J. Cantwell
10:30-11:00 AM	<b>AIAA-2016-4754. Development of a Hybrid Rocket Slab Motor</b> R. Theba; K.L. Veale; C. Bemont
11:00-11:30 AM	<b>AIAA-2016-4755. Fuel Regression Behavior of a Swirling-Injection End-Burning Hybrid Rocket Engine using Paraffin-based Fuels</b> Y. Oishige; D. Hayashi; T. Sakurai
9:30 AM-12:00 PM, 254 C, HSABP-05. <b>Numerical Analysis of Supersonic Combustion Flow Paths, Components, and Processes</b> , Technical Paper, 52nd AIAA/SAE/ASEE Joint Propulsion Conference, Chair: Faure Malo-Molina, faurejoel@gmail.com, Raytheon Missile Systems; Co-Chair: Foluso Ladeinde, FL@ttctech.com, TTC Technologies Inc	
9:30-10:00 AM	<b>AIAA-2016-4756. Combustion Performance of Hydrocarbon Fuel in a Dual-Mode Combustor</b> K. Nojima; M. Soejima; T. Arakawa; S. Tomioka; N. Sakuranaka
10:00-10:30 AM	<b>AIAA-2016-4757. Research on Mixing Control by Injection Scheme in Dual-Mode Combustor</b> T. Arakawa; S. Ishizaki; K. Nojima; S. Tomioka; N. Sakuranaka
10:30-11:00 AM	<b>AIAA-2016-4758. Performance Prediction of Diverging Dual-mode Combustors at Ramjet-mode Operation</b> S. Tomioka; M. Takahashi; K. Kobayashi; K. Tani; K. Nojima; T. Arakawa
11:00-11:30 AM	<b>AIAA-2016-4759. Asymmetric Combustion Characteristics of Transverse Ethylene Injection in a Rectangular Supersonic Combustor with Single-side Expansion</b> M. Sun
11:30-12:00 PM	<b>AIAA-2016-4760. Supersonic Mixing and Combustion studies using Decoupling Strategy</b> Y. Wang; W. Song; H. Bai
9:30 AM-12:00 PM, 255 A, HSABP-06. <b>High Fidelity Simulations of High-Speed Air-Breathing Systems</b> , Technical Paper, 52nd AIAA/SAE/ASEE Joint Propulsion Conference, Co-Chair: Venkat Tangirala, tangiral@crd.ge.com, General Electric; Chair: Ronald Springer, ronald.springer@jhupl.edu, Johns Hopkins University Applied Physics Laboratory	
9:30-10:00 AM	<b>AIAA-2016-4761. Detached Eddy Simulation of a high-Ma regenerative-cooled scramjet combustor based on skeletal kerosene mechanism</b> W. Yao; Y. Lu; X. Li; J. Wang; X. Fan
10:00-10:30 AM	<b>AIAA-2016-4762. Computational Analysis of Flow Phenomena in a Back-Pressured Supersonic Isolator</b> M.A. Hagenmaier; E.A. Hassan

10:30-11:00 AM	<b>AIAA-2016-4763. Control of Shock-Induced Boundary Layer Separation by High Momentum Blowing</b> D.R. Cuppoletti; C. Saucier; C. Harris
11:00-11:30 AM	<b>AIAA-2016-4764. CFD Analysis of Mixing Characteristics of Several Fuel Injectors at Hypervelocity Flow Conditions</b> T.G. Drozda; R. Baurle
9:30 AM-12:00 PM, 151 DE, ITAR-01. <b>Gas Turbines and Associated Equipment (CAT-XIX)</b> , ITAR Presentations, <b>ITAR Presentations</b> , Co-Chair: Chiping Li, chiping.li@afosr.af.mil, Air Force Office of Scientific Research; Chair: Knox Millsaps, millsaps@nps.edu, Naval Postgraduate School	
9:30-10:00 AM	<b>AIAA-2016-4765. Initial Comparison of Experimental and Numeric Premixed Rotating Detonation Engines</b> I.Q. Andrus; P.I. King; M.D. Polanka; F.R. Schauer; J.L. Hoke
10:00-10:30 AM	<b>Oral Presentation. NRL Simulations of a Rotating-Detonation-Wave Engine Concept</b> K. Kailasanath; D.A. Schwer
10:30-11:00 AM	<b>AIAA-2016-4766. Integrated Fiber Optic Sensor (IFOS) System</b> N. Ma; A. Ghoshal; T. Nielsen; V. Romanov
11:00-11:30 AM	<b>AIAA-2016-4767. Thermodynamics of RDE Flow with Axial Flow Turbine</b> C.A. Nordeen; R. Munipalli; Z. Liu; B. Cetegen
9:30 AM-12:00 PM, 251 D, LP-08. <b>Nozzles II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Scott Forde, Scott.Forde@rocket.com, Aerojet Rocketdyne; Co-Chair: Scott Miller, scott.miller@rocket.com, Aerojet Rocketdyne	
9:30-10:00 AM	<b>AIAA-2016-4768. Performance Evaluation of Aerospike Nozzles for Lucrative Thrust Vector Control</b> S. Ajith; A. S; M. Raj; R. S; T. Ramesh kumar; S. Vivek; V. Sanal Kumar
10:00-10:30 AM	<b>AIAA-2016-4769. 3D Numerical Studies on Thrust Vectoring using Shock Induced Self Impinging Secondary Jets</b> N. Vishnu; S. Vigneshwaran ; S. Vignesh; C. Nichith; S. Sharan; V. Sanal Kumar
10:30-11:00 AM	<b>AIAA-2016-4770. Diagnostic Investigation of Nozzle Flow Choking Time and Stage Separation Sequence of a Multi-stage Rocket</b> V. Sanal Kumar; C. Nichith; S. Vigneshwaran ; A. S; A. Kumar; S. Ajith; S. Sharan; S. Mani
11:00-11:30 AM	<b>AIAA-2016-4771. Rapid Fabrication Techniques for Liquid Rocket Channel Wall Nozzles</b> P.R. Gradl
9:30 AM-12:00 PM, 251 E, LP-09. <b>Propellant Storage &amp; Transfer III</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Michael Meyer, michael.l.meyer@nasa.gov, NASA Glenn Research Center; Co-Chair: Daniel Kirk, dkirk@fit.edu, Florida Institute of Technology	

9:30-10:00 AM	<b>AIAA-2016-4772. A Detailed Historical Review of Propellant Management Devices for Low Gravity Propellant Acquisition</b> J.W. Hartwig
10:00-10:30 AM	<b>AIAA-2016-4773. Experimental Investigation on Liquid Acquisition Devices by Mesh-type Baffles</b> S. Hamajima; T. Himeno; Y. Sakuma; Y. Umemura; H. Negishi; K. Ishikawa; T. Watanabe; S. Uzawa
10:30-11:00 AM	<b>AIAA-2016-4774. Analytical Prediction of Peak Pressure Transients Occurring During The Priming of a Spacecraft Propulsion System</b> J.J. Flynn
11:00-11:30 AM	<b>AIAA-2016-4775. Design and Operation of a Calorimeter for Advanced Multilayer Insulation Testing</b> D.J. Chato; W.L. Johnson; N. Van Dresar
9:30 AM-12:00 PM, 150 G, NFF-03. <b>Fusion and Alternative Nuclear Concepts II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Mitchell Rodriguez, mar0017@uah.edu, ; Co-Chair: Bryan Palaszewski, bryan.a.palaszewski@nasa.gov, NASA Glenn Research Center	
9:30-10:00 AM	<b>AIAA-2016-4776. Inertial Electrostatic Confinement Fusion Simulation and a Statistical Treatment of Coulomb Collisions</b> A.M. Chap; R.J. Sedwick
10:00-10:30 AM	<b>AIAA-2016-4777. Novel Inertial Electrostatic Confinement Fusion with Buckyball Shaped Grids</b> J. Wulfkuehler; M. Tajmar
10:30-11:00 AM	<b>AIAA-2016-4778. A Hybrid Solid/Gas Core Nuclear Thermal Rocket Engine for Future Solar System Exploration.</b> L. Beveridge
9:30 AM-12:00 PM, 255 C, PC-06. <b>Combustion Chemistry</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Thomas Jackson, tlj@ufl.edu, University of Florida; Co-Chair: Nadja Slavinskaya, nadja.slavinskaya@dlr.de, DLR - German Aerospace Center	
9:30-10:00 AM	<b>AIAA-2016-4779. Characterizing NOx Emissions for Air-Breathing Rotating Detonation Engines</b> D.A. Schwer; K. Kailasanath
10:00-10:30 AM	<b>AIAA-2016-4780. Density Functional Theory Investigations on Bulk Iridium Structures for ReaxFF Catalysis Parameterization</b> D.D. Depew; J.J. Wang
10:30-11:00 AM	<b>AIAA-2016-4781. Skeletal Mechanism of the Methane Oxidation for Space Propulsion Applications</b> N. Slavinskaya; O.J. Haidn
11:00-11:30 AM	<b>AIAA-2016-4782. Ignition Delay Testing of Various Hypergolic Ionic liquids and Oxidizers</b> A. Thomas; K. Stober; R. Al Otaibi; M. Alotaibi; N. Almuqati; B.J. Evans; H. Gao; J. Shreeve; B.J. Cantwell

9:30 AM-12:00 PM, 255 D, PC-07. <b>Air-Breathing Combustion Modeling</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Suresh Menon, suresh.menon@ae.gatech.edu, Georgia Institute of Technology; Co-Chair: Lance Smith, smithll@utrc.utc.com, United Technologies Research Center	
9:30-10:00 AM	<b>AIAA-2016-4783. CFD Based Design of a Filming Injector for N+3 Combustors</b> K. Ajmani; H.C. Mongia; P. Lee
10:00-10:30 AM	<b>AIAA-2016-4784. Effect of Radiation on Gas Turbine Combustor Liner Temperature with Conjugate Heat Transfer (CHT) Methodology</b> Y. Saygin; S. UsLu
10:30-11:00 AM	<b>AIAA-2016-4785. LES validation practices in a model aero-engine combustor at engine relevant conditions</b> S. Yellapantula; K. Venkatesan; A. Pratt; C. Slabaugh; R.P. Lucht
11:00-11:30 AM	<b>AIAA-2016-4786. Large-Eddy Simulation of a Full Annular RQL Combustion Chamber &amp; Fuel Distribution Effects on the Combustor Exit Temperature Profile</b> O. Kocaman; T. Aksu; S. UsLu
9:30 AM-12:00 PM, 255 E, PC-08. <b>Cryogenic Sprays</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Venke Sankaran, venkateswaran.sankaran@us.af.mil, US Air Force/AFRL/RQRC; Co-Chair: Hiroshi Terashima, htera@eng.hokudai.ac.jp, Hokkaido University	
9:30-10:00 AM	<b>AIAA-2016-4787. Cryogenic Flashing Jets: A Review (Invited Paper)</b> G. Lamanna
10:00-10:30 AM	<b>AIAA-2016-4788. Trajectory and Breakup of Cryogenic Jets in Crossflow</b> W.S. Richards; A.M. Steinberg
10:30-11:00 AM	<b>AIAA-2016-4789. Sub- or Supercritical? A flamelet analysis of high pressure rocket propellant injection</b> D.T. Banuti; J. Hickey; M. Ihme
11:00-11:30 AM	<b>AIAA-2016-4790. Injection of Cryogenic Propellants under Low Pressure Conditions</b> M. Luo; O.J. Haidn
11:30-12:00 PM	<b>AIAA-2016-4791. High Fidelity Large Eddy Simulation of Reacting Supercritical Fuel Jet-in-Cross-Flow using GPU acceleration</b> K.C. Gottiparthi; R. Sankaran; J.C. Oefelein
9:30 AM-12:00 PM, 254 A, SR-03. <b>Solid Rocket Combustion Instability</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Co-Chair: Alana Spurling, alana.spurling@navy.mil, Naval Air Warfare Center Weapons Division; Chair: Charle Rousseau, Werner.Rousseau@rheinmetall-denelmunition.com, Denel (Pty) Ltd.	
9:30-10:00 AM	<b>AIAA-2016-4792. Biglobal Instability of the Compressible Taylor-Culick Solution in Cylindrical Rockets</b> M. Akiki; J. Majdalani
10:00-10:30 AM	<b>AIAA-2016-4793. Motor Scale and Propellant Geometry Effects on Pressure Oscillations in Aft-Finocyl Solid Rocket Motors</b> E. Cavallini; B. Favini; A. Neri

9:30 AM-12:00 PM, 151 AB, TM-03. <b>Thermal System Applications and Unique Environments III</b> , Technical Paper, <b>14th International Energy Conversion Engineering Conference</b> , Co-Chair: Jayesh Mehta, jmehta@belcan.com, Belcan AETD; Chair: Calin Tarau, calin.tarau@1-act.com, Advanced Cooling Technologies	
9:30-10:00 AM	<b>AIAA-2016-4794. Investigations into the thermal performance of a helically coiled closed loop oscillating heat pipe</b> S.K. Yeboah; J. Darkwa
10:00-10:30 AM	<b>AIAA-2016-4795. Development of a radiative heating system for studies of heat transfer in fuel-cooled structures</b> D. Dong; Y. Lu; Y. Yuan; X. Fan
10:30-11:00 AM	<b>AIAA-2016-4796. Copper-Methanol Heat Pipes Development for Electronics Cooling of Surveillance Equipment</b> R. Riehl
11:00-11:30 AM	<b>AIAA-2016-4797. A novel spiral regenerator suitable for MICSE and the study on its hybrid thermodynamic cycle</b> Z. Zhang; G. Huang; C. Xia; Y. Xu
11:30-12:00 PM	<b>AIAA-2016-4798. Investigation of Insulation Effect on Spacecraft Thermal Control System</b> A.M. Farag; A.M. Elzahaby; M.K. Khalil; T.Z. Wafi; E.E. Khalil
1:00 PM-2:30 PM, Ballroom A-D, PLNRY-04. <b>High Power Systems for Aerospace Applications</b> , Plenary, <b>Forum Event</b>	
2:30 PM-3:00 PM, Exhibit Hall C, NW-05. <b>Networking Coffee Break</b> , Networking	
3:00 PM-6:00 PM, 255 F, ABPSI-04. <b>Subsonic Inlets &amp; Aerodynamic Interaction</b> , Technical Paper, <b>52nd AIAA/SAE/ASSEE Joint Propulsion Conference</b> , Chair: Thomas Berens, thomas.berens@airbus.com, AIRBUS Defence and Space; Co-Chair: Mitchell Hageman, mitchell.hageman@usafa.edu,	
3:00-3:30 PM	<b>AIAA-2016-4799. Design point analysis of a distributed propulsion system with boundary layer ingestion implemented in UAV's for agriculture in the Andean region</b> E. Valencia; V. Hidalgo; J. Cisneros
3:30-4:00 PM	<b>AIAA-2016-4800. Installed Performance Assessment of a Boundary Layer Ingesting Distributed Propulsion System at Design Point C.</b> Goldberg; D. Nalianda; P. Pilidis; D. MacManus; J. Felder
4:00-4:30 PM	<b>AIAA-2016-4801. Numerical Investigation of the Effect of Wing Position on the Aeroacoustic Field of a Propeller</b> D. Boots; D. Feszty
4:30-5:00 PM	<b>AIAA-2016-4802. Three Dimensional Design Optimization Using Adjoint Method with Newton Krylov Solver</b> A. Yildirim; S. Eyi

5:00-5:30 PM	<b>AIAA-2016-4803. Studies on Boundarylayer Blockage and External Flow Choking at Moving Wing in Ground Effect</b> S. Vignesh; S. Vivek; S. Ganesh Shankar; S. Ajith; S. Mani; V. Sanal Kumar
3:00 PM-6:00 PM, 150 DE, AEC-02. <b>Advanced Engine Control &amp; Intelligent Systems II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Richard Millar, r.c.millar@verizon.net, Naval Postgraduate School; Co-Chair: Alireza Behbahani, al.behbahani@wpafb.af.mil, AFRL/RQT	
3:00-3:30 PM	<b>AIAA-2016-4804. Intelligent Nodal-Based Controls Technologies for Integrated Propulsion Energy / Power / Thermal Management Systems</b> A.R. Behbahani; R.A. Roberts; A.K. Chandoke
3:30-4:00 PM	<b>AIAA-2016-4805. Development of Distributed Control Systems for Aircraft Turbofan Engines</b> T.M. Seitz; O.B. Macmann; A.R. Behbahani; F. Khoury
4:00-4:30 PM	<b>AIAA-2016-4806. Modeling of a Gas Turbine Using Distributed Networks with Smart Nodes and Multiple Time Delays</b> T.M. Seitz; R.K. Yedavalli; O.B. Macmann; A.R. Behbahani
4:30-5:00 PM	<b>AIAA-2016-4807. Performing Diagnostics &amp; Prognostics On Simulated Engine Failures Using Neural Networks</b> O.B. Macmann; T.M. Seitz; A.R. Behbahani; K. Cohen
5:00-5:30 PM	<b>AIAA-2016-4808. Reconfigurable Distributed Control Systems for Turbine Engine Operation Uncertainties</b> S. Zein-Sabatto; M. Bodruzzaman; C. McCurry; A.R. Behbahani
5:30-6:00 PM	<b>AIAA-2016-4809. Integrated Robust and Resilient Control of Propulsion Systems</b> A.R. Behbahani; O.B. Macmann; T.M. Seitz; R. Buettner
3:00 PM-6:00 PM, 251 D, APC-02. <b>Advanced Propulsion Concepts I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Co-Chair: Aloysius Reisz, areisz@reiszeng.com, Reisz Engineers; Chair: John Robinson, jwelshr@gmail.com, Retired f/Boeing	
3:00-3:30 PM	<b>AIAA-2016-4810. Parametric Cycle Analysis of a Turbofan with Core Engine Replaced by Revolutionary Innovative Turbine Engine</b> F. Yang; Z. Wang; Z. Liu; L. Zhou; X. Zhang
3:30-4:00 PM	<b>AIAA-2016-4811. Computational Fluid Dynamics Simulations and Validation of a Novel Constant Volume Combustion Jet Engine</b> J.T. Travis; A.V. Kuznetsov; W. Roberts
4:00-4:30 PM	<b>AIAA-2016-4812. Aerodynamic Design and Analysis of the Hyperloop Pod</b> J. Braun; J. Sousa; C. Pekardan
4:30-5:00 PM	<b>AIAA-2016-4813. Experimental Investigation of a Baffled-Tube Ram Accelerator</b> C. Knowlen; J. Glusman; R. Grist; A. Bruckner; A. Higgins



3:00 PM-6:00 PM, 151 G, **APS-03. Space Nuclear Power Generation**, Technical Paper, **14th International Energy Conversion Engineering Conference**, Co-Chair: James Haines, jim.haines@btinternet.com, Retired - formerly ESA/ESTEC; Co-Chair: Mukund Patel, patelm@usmma.edu, US Merchant Marine Academy

3:00-3:30 PM	<b>AIAA-2016-4814. Performance Testing of the EU/QU MMRTG C.D.</b> Barklay; B. Tolson; G.S. Bolotin; N. Keyawa; W. David
3:30-4:00 PM	<b>AIAA-2016-4815. The Selenide Saga: A Contribution Toward a History of the Selenide Isotope Generator</b> G. Bennett
4:00-4:30 PM	<b>AIAA-2016-4816. Advanced Stirling Radioisotope Generator EU2 Anomaly Investigation</b> E.J. Lewandowski; S.M. Oriti
4:30-5:00 PM	<b>AIAA-2016-4817. Enhancement of the Multi-Mission Radioisotope Thermoelectric Generator with Efficient Skutterudite Thermoelectric Couples: Current Status of the Skutterudite Technology Maturation Program</b> T.C. Holgate; Y. Song; D. Shi; R. Utz; T. Chung; R. Bennett; S. Keyser; T.E. Hammel; R. Sievers; T. Caillat; J. Fleurial

3:00 PM-6:00 PM, 150 G, **EE-01. Systems-Level Analysis of Energy Efficiency and Renewable Energy**, Technical Paper, **14th International Energy Conversion Engineering Conference**, Chair: Emmanuel Ogedengbe, ogedengbe@energhx.com, ENERGHX Consulting/University of Lagos; Co-Chair: Scott Duncan, sduncan@asdl.gatech.edu, Aerospace Systems Design Laboratory, Georgia Tech

3:00-3:30 PM	<b>AIAA-2016-4818. A Building Thermal Demand Model for a District Energy System</b> J. Lewe; S. Oh; H. Solano; D.N. Mavris
3:30-4:00 PM	<b>AIAA-2016-4819. A Parametric Modeling of Water-to-air Heat Exchanger Based on CFD Analysis</b> S. Wojnarska; J. Lewe; K. Song; S.J. Duncan
4:00-4:30 PM	<b>AIAA-2016-4820. "Synthetic shroud" concept for wind turbine performance optimization</b> D. Feszty; S. McTavish; I. Bodnya; D. Jee
4:30-5:00 PM	<b>AIAA-2016-4821. Air Craft Winglet Design and Performance: Cant Angle Effect</b> E.E. Khalil; E.S. AbdelGhany; G.M. ElHarriri; O.E. Abdellatif
5:00-5:30 PM	<b>AIAA-2016-4822. Separation analysis in a high-speed rotating cylinder for a binary gas mixture</b> S. Pradhan
5:30-6:00 PM	<b>AIAA-2016-4823. A Center for Aviation Systems Efficiency</b> D. Erbschloe; W. Harrison

3:00 PM-6:00 PM, 250 A, **EP-15. HERMeS Hall Thruster I**, Technical Paper, **52nd AIAA/SAE/ASEE Joint Propulsion Conference**, Chair: Mitchell Walker, mitchell.walker@ae.gatech.edu, Georgia Institute of Technology; Co-Chair: Kurt Terhune, kjerhun@mtu.edu,

3:00-3:30 PM	<b>AIAA-2016-4824. The Ion Propulsion System for the Asteroid Redirect Robotic Mission</b> D.A. Herman; W. Santiago; H. Kamhawi; J.E. Polk; J.S. Snyder; R.R. Hofer; M.J. Sekerak
3:30-4:00 PM	<b>AIAA-2016-4825. Development Status of the 12.5 kW HERMeS Hall Thruster for the Solar Electric Propulsion Technology Demonstration Mission</b> R.R. Hofer; H. Kamhawi
4:00-4:30 PM	<b>AIAA-2016-4826. Performance, Facility Pressure Effects, and Stability Characterization Tests of NASA's 12.5-kW Hall Effect Rocket with Magnetic Shielding Thruster</b> H. Kamhawi; T. Haag; W. Huang; J. Yim; D.A. Herman; P.Y. Peterson; G. Williams; J. Gilland; R.R. Hofer; I.G. Mikellides
4:30-5:00 PM	<b>AIAA-2016-4827. Performance Comparison of the 12.5 kW HERMeS Hall Thruster Technology Demonstration Units</b> R.W. Conversano; R.R. Hofer; M.J. Sekerak; H. Kamhawi; P.Y. Peterson
5:00-5:30 PM	<b>AIAA-2016-4828. Facility Effect Characterization Test of NASA's HERMeS Hall Thruster</b> W. Huang; H. Kamhawi; T. Haag
5:30-6:00 PM	<b>AIAA-2016-4829. Plasma Oscillation Characterization of NASA's HERMeS Hall Thruster via High Speed Imaging</b> W. Huang; H. Kamhawi; T. Haag
3:00 PM-6:00 PM, 250 B, EP-16. <b>Low Power Hall Thruster Development</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: David Oh, david.y.oh@jpl.nasa.gov, Jet Propulsion Laboratory; Co-Chair: James Szabo, jszabo@busek.com, Busek Co., Inc.	
3:00-3:30 PM	<b>AIAA-2016-4830. High Throughput 600 Watt Hall Effect Thruster for Space Exploration</b> J.J. Szabo; B. Pote; R. Tedrake; S. Paintal; L. Byrne; V.J. Hruby; H. Kamhawi; T. Smith
3:30-4:00 PM	<b>AIAA-2016-4831. Characterization and Qualification of the CAM200 Low Power Hall Thruster</b> D.R. Lev; R. Eytan; D. Katz-Franco; L. Appel
4:00-4:30 PM	<b>AIAA-2016-4832. Design and characterization of a 200W Hall thruster in "magnetic shielding" configuration</b> L. Grimaud; J. Vaudolon; S. Mazouffre; C. Boniface
4:30-5:00 PM	<b>AIAA-2016-4833. Performance Evaluation of the T-40 Low-Power Hall Current Thruster</b> J.D. Frieman; T. Liu; M.L. Walker; J. Makela; A. Mathers; P.Y. Peterson
5:00-5:30 PM	<b>AIAA-2016-4834. Experimental Study of the Effects of the Cathode Position and the Electrical Circuit Configuration on the Operation of HK40 Hall Thruster and BUSTLab Hollow Cathode</b> N. Turan; U. Kokal; M. Celik; H. Kurt

3:00 PM-6:00 PM, 250 C, EP-17. <b>LaB6 Hollow Cathodes</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Rotislav Spektor, rostislav.spektor@aero.org, The Aerospace Corporation; Co-Chair: Brandon Jackson, bajackso@mtu.edu,	
3:00-3:30 PM	<b>AIAA-2016-4835. Lanthanum Hexaboride Hollow Cathode Performance and Wear Testing for the Asteroid Redirect Mission Hall Thruster</b> D.M. Goebel; J.E. Polk
3:30-4:00 PM	<b>AIAA-2016-4836. Wear Test Demonstration of a Technique to Mitigate Keeper Erosion in a High-Current LaB<sub>6</sub> Hollow Cathode</b> A. Ho; B. Jorns; I.G. Mikellides; D.M. Goebel; A. Lopez Ortega
4:00-4:30 PM	<b>AIAA-2016-4838. Laser-induced Fluorescence Measurements of Energetic Ions in a 100-A LaB<sub>6</sub> Hollow Cathode</b> C. Dodson; D. Perez-Grande; B. Jorns; D.M. Goebel; R.E. Wirz
3:00 PM-6:00 PM, 250 D, EP-18. <b>Sputtering &amp; Erosion Physics</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Kurt Polzin, kurtpolzin@gmail.com, NASA Marshall Space Flight Center; Co-Chair: Natalia MacDonald, natalia.macdonald@us.af.mil, AFRL	
3:00-3:30 PM	<b>AIAA-2016-4839. Mechanisms for Pole Piece Erosion in a 6-kW Magnetically-Shielded Hall Thruster</b> B. Jorns; C.A. Dodson; J.R. Anderson; D.M. Goebel; R.R. Hofer; M.J. Sekerak; A. Lopez Ortega; I.G. Mikellides
3:30-4:00 PM	<b>AIAA-2016-4840. Surface Geometry Effects on Secondary Electron Emission Via Monte Carlo Modeling</b> C.E. Huerta; R.E. Wirz
4:00-4:30 PM	<b>AIAA-2016-4841. Multi-diagnostic Measurements of Sputter Yield of Molybdenum under Argon Plasma Bombardment</b> G. Li; T.S. Matlock; D.M. Goebel; R.E. Wirz
4:30-5:00 PM	<b>AIAA-2016-4842. Search for Anomalous Ridge Growth during Stressed Material Plasma Erosion</b> A.M. Schinder; M.L. Walker; J. Rimoli
5:00-5:30 PM	<b>AIAA-2016-4843. A Parametric Computational Study of Boron Transport in Hall Thrusters</b> B.D. Smith; I.D. Boyd
3:00 PM-6:00 PM, 250 E, EP-19. <b>Pulsed Plasma Thruster</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Rei Kawashima, kawashima@al.t.u-tokyo.ac.jp, The University of Tokyo; Co-Chair: Joe Cardin, JCardin@VACCO.com, VACCO	
3:00-3:30 PM	<b>AIAA-2016-4844. Research and Development of a High-Power Electrothermal Pulsed Plasma Thruster System onboard Osaka Institute of Technology 2<sup>nd</sup> PROITERES Nano-Satellite</b> K. Kanaoka; H. Tahara

3:30-4:00 PM	<b>AIAA-2016-4845. Observation of Late-Time Ablation in Electric Solid Propellant Pulsed Microthrusters</b> M.S. Glascock; J. Rovey; S. Williams; J. Thrasher
4:00-4:30 PM	<b>AIAA-2016-4846. Pulsed Plasma Thruster Development Using A Novel HAN-Based Green Electric Monopropellant</b> J. Thrasher; S. Williams; P. Takahashi; J. Sousa
4:30-5:00 PM	<b>AIAA-2016-4847. Characteristics of a Coaxial Pulsed Plasma Thruster Using Liquid Propellant</b> K. Miyagi; A. Kakami; T. Tachibana
5:00-5:30 PM	<b>AIAA-2016-4848. Development and Testing of Electric Propulsion Systems at TU Dresden</b> D. Bock; F. Nürnberger; C. Drobny; P. Laufer; M. Tajmar
3:00 PM-5:30 PM, Ballroom F, F360-04. <b>Nuclear Power for Distant Solar System Destinations</b> , Forum 360, <b>Forum 360</b>	
3:00 PM-6:00 PM, 251 A, <b>GTE-10. Advanced Materials and Technology for Gas Turbine Engines</b> , Technical Paper, <b>52nd AIAA/SAE/ASME Joint Propulsion Conference</b> , Chair: Mark Ricklick, Mark.Ricklick@erau.edu, Embry Riddle Aeronautical University	
3:00-3:30 PM	<b>AIAA-2016-4849. Integrated High Temperature Sensors for Advanced Propulsion Materials</b> K. Wong; S. Sahoo; M. McFarland
3:30-4:00 PM	<b>AIAA-2016-4850. The influences of foreign object damage on the high cycle fatigue behavior of titanium alloy TC4</b> Z. Zhao; X. Xu; W. Chen; T. Wu
4:00-4:30 PM	<b>AIAA-2016-4851. Preliminary Investigation of an Oblique Jet Impingement Cooling on a CMC Rough Surface</b> K. Krishna; M.A. Ricklick
4:30-5:00 PM	<b>AIAA-2016-4852. Effect of Semi-Molten Particulate on Tailored Thermal Barrier Coatings for Gas Turbine Engine</b> A. Ghoshal; M. Murugan; M. Walock; B. Barnett; M. Pepi; S. Jeffrey; D. Hopkins; G. Gazonas; M. Shiao; K.A. Kerner; C. Rowe
5:00-5:30 PM	<b>AIAA-2016-4853. Fatigue Analysis of a Cylindrical Turbine Disk with Integrated Heat Pipes</b> S. Eisenmann; T. Schmidt; V. Gümmer; A. Hupfer
3:00 PM-6:00 PM, 251 B, <b>GTE-11. Turbines III</b> , Technical Paper, <b>52nd AIAA/SAE/ASME Joint Propulsion Conference</b> , Chair: Magdy Attia, magdy.attia@erau.edu, Embry-Riddle Aeronautical University	
3:00-3:30 PM	<b>AIAA-2016-4854. A Comparative Evaluation of Heat Transfer and Friction Behavior of a Square Channel with Sharp and Rounded 45° Ribs at Wide Range of Reynolds Numbers Using Experimental and Numerical Computation</b> L. Ahmed; P.K. Tran; C. Vergos; E. Fernandez; L. Mears; J. Rodriguez; J.S. Kapat

3:30-4:00 PM	<b>AIAA-2016-4855. Investigation of Pressure Drop and Heat Transfer Behavior of a Square Channel with 45° Angle Turbulators on One and Two Wall Configuration</b> C. Vergos; L. Ahmed; P.K. Tran; T. Buchanan; E. Fernandez; J.S. Kapat
4:00-4:30 PM	<b>AIAA-2016-4856. Experimental and Computational Flow Analyses of a Single Jet Impinging on a Flat Plate</b> M. Benson; M. Cremins; A. Lachance; C. Snow; B. Van Poppel; C. Verhulst; G. Rodebaugh; C. Elkins
4:30-5:00 PM	<b>AIAA-2016-4857. Analysis of a Coupled Micro- and Triple-Impingement Cooling Configuration in the C3X Vane</b> C.D. Rossman; M.A. Ricklick
3:00 PM-6:00 PM, 251 C, GTE-12. <b>Gas Turbine Engine Testing Techniques</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Robert Hancock, robert.hancock.3@us.af.mil, AFRL/RQT	
3:00-3:30 PM	<b>AIAA-2016-4858. Approximation of Engine Casing Temperature Constraints for Casing Mounted Electronics</b> J.L. Kratz; D.E. Culley; J.W. Chapman
3:30-4:00 PM	<b>AIAA-2016-4859. An Inverse Heat Conduction Problem applied to the Rotor Casing of a Transonic Turbine</b> B.F. Hilbert; S.C. Morris
4:00-4:30 PM	<b>AIAA-2016-4860. Experimental and Numerical Analysis of a Piezo Driven Fluidic Device for Active Flow Control</b> M. Mair; L. Chen; J. Turner; M. Bacic; P. Ireland
4:30-5:00 PM	<b>AIAA-2016-4861. Investigation on the dynamic response of aero-engine structures due to fan blade out event through subscale testing</b> L. Liu; W. Chen; Z. Zhao; G. Luo
3:00 PM-6:00 PM, 253 AB, HR-05. <b>Development and Evaluation of Novel O/F Formulations and Combinations</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Toru Shimada, shimada.toru@jaxa.jp, Japan Aerospace Exploration Agency; Co-Chair: Stephen Whitmore, stephen.whitmore@usu.edu, Utah State University	
3:00-3:30 PM	<b>AIAA-2016-4862. Combustion Characteristics of Gas Hybrid Rocket using H<sub>2</sub>O as Oxidizer-Effect of Mg-Al Particle Sizes-</b> Y. Sato; T. Kuwahara
3:30-4:00 PM	<b>AIAA-2016-4863. Development of a 75 mm Hybrid Rocket Motor to Test Metal Additives</b> C.S. Maharaj; K.L. Veale; J. Pitot; C. Bemont
4:00-4:30 PM	<b>AIAA-2016-4864. Design and performance evaluation of hybrid rocket using 95 wt.% H<sub>2</sub>O<sub>2</sub></b> S. Kang; D. Lee; E. Lee; S. Kwon
4:30-5:00 PM	<b>AIAA-2016-4865. AP and Boron combustion characteristics in Staged Hybrid Rocket Engine</b> D. Lee; C. Lee

3:00 PM-6:00 PM, 255 B, HR-06. **Combustion Stability, Motor Performance, and Related Issues**, Technical Paper, **52nd AIAA/SAE/ASEE Joint Propulsion Conference**, Chair: Balasubramanyam Madhanabharatam, madhanbala@gmail.com, Aerospace Consultant; Co-Chair: Arif Karabeyoglu, arif@spg-corp.com, Space Propulsion Group Inc.

3:00-3:30 PM	<b>AIAA-2016-4866. Nondestructive Mapping of Hybrid Rocket Fuel Grains</b> A.M. Costantino; P. Narsai; B.J. Cantwell
3:30-4:00 PM	<b>AIAA-2016-4867. Effects of Radiation Heating on Additively Printed Hybrid Fuel Grain O/F Shift</b> S.A. Whitmore; S.L. Merkley
4:00-4:30 PM	<b>AIAA-2016-4868. A Fundamental Study on the Hybrid Rocket Clustering for the Rocket Sled Propulsion System</b> D. Nakata; K. Yasuda; S. Horio; K. Higashino
4:30-5:00 PM	<b>AIAA-2016-4869. Pressure Oscillation and Combustion in Shear Layer of Hybrid Rocket Post Chamber</b> Y. Moon; C. Lee
5:00-5:30 PM	<b>AIAA-2016-4870. Computed Tomography Characterization of a Porous Hybrid Motor Grain with Added Contrast Agent</b> J.R. Buckley; M. Denny; G.J. Nelson
5:30-6:00 PM	<b>AIAA-2016-4871. Measuring Time-Varying Fuel Regression Rates with Image Processing in a Hybrid Rocket Motor</b> P. Narsai; K. Venkataraman; K. Stober; B.J. Cantwell

3:00 PM-6:00 PM, 254 C, HSABP-07. **Numerical Analysis of High-Speed Air-Breathing Propulsion and Their Integration**, Technical Paper, **52nd AIAA/SAE/ASEE Joint Propulsion Conference**, Chair: Alan Drake, alan.drake@atk.com, Orbital ATK

3:00-3:30 PM	<b>AIAA-2016-4872. Aerothermodynamics cycle model for new hypersonic propulsion: Rocket Ignited Supersonic Combustion Ram Jet</b> J.E. Barros; M. Gabaldo; M.d. Guerra
3:30-4:00 PM	<b>AIAA-2016-4873. Ignition Test of Solid Fuel Ramjet Combustor</b> W. Jung; S. Baek; J. Park; T. Kwon; S. Kwon
4:00-4:30 PM	<b>AIAA-2016-4874. Numerical Analysis of a Dual-mode Scramjet Engine VS a Rocket-Based Combined-Cycle Engine</b> L. Shi
4:30-5:00 PM	<b>AIAA-2016-4875. The Effects of Air Vitiation on the Supersonic Turbulent Channel flow using Direct Numerical Simulation</b> X. Chen; X. Li; H. Dou

3:00 PM-6:00 PM, 255 A, HSABP-08. **Pulse Detonation Physics, and/or Combined Cycle with Other Utility to High-Speed Propulsion**, Technical Paper, **52nd AIAA/SAE/ASEE Joint Propulsion Conference**, Chair: Kailas Kailasanath, KAILAS@LCP.NRL.NAVY.MIL, Naval Research Laboratory; Co-Chair: A Koichi Hayashi, hayashi@me.aoyama.ac.jp, Aoyama Gakuin University

3:00-3:30 PM	<b>AIAA-2016-4876. Preliminary Parametric Analysis of a Rotating Detonation Engine by Analytical Methods</b> A.R. Mizener; F.K. Lu
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3:30-4:00 PM	<b>AIAA-2016-4877. Mach Disk Pressure Measurement Technique within Rotating Detonation Engine</b> J.R. Codoni; K.Y. Cho; J.L. Hoke; F.R. Schauer
4:00-4:30 PM	<b>AIAA-2016-4878. Analytical Model of Shock Dynamics in Pulse Detonation Engine Nozzles</b> J.T. Peace; F.K. Lu
4:30-5:00 PM	<b>AIAA-2016-4879. Criteria for rotating detonation to pass obstacles near the inlet</b> Y. Wang
5:00-5:30 PM	<b>AIAA-2016-4880. Adaptive simulations of viscous and inviscid detonations in supersonic combustible mixture using a hot jet initiation</b> X. Cai; J. Liang
3:00 PM-6:00 PM, 151 DE, <b>ITAR-02. Launch Vehicles I (CAT-IV)</b> , ITAR Presentations, <b>ITAR Presentations</b> , Chair: Christopher Brophy, cmbrophy@nps.edu, Naval Postgraduate School; Co-Chair: Scott Claflin, scott.claflin@rocket.com, Aerojet Rocketdyne	
3:00-3:30 PM	<b>Oral Presentation. Development and Testing 100 lbf Non-Toxic Monopropellant Thruster. Consider for ITAR session. A.</b> Shchetkovskiy; T. McKechnie; S. Mustaikis
3:30-4:00 PM	<b>AIAA-2016-4881. Development of 10 inch Diameter Titanium Rolling Metal Diaphragm Tank for Green Propellant</b> H. Conomos; J. Yager; J. Moore; R. Goddard; T. Salzler; J. Fetes; K. Burch
4:00-4:30 PM	<b>AIAA-2016-4882. HTP CubeSat Propulsion Module</b> A. Vazquez; N.D. Love; A.R. Choudhuri
4:30-5:00 PM	<b>AIAA-2016-4883. Schlieren Visualizations within a Rotating Detonation Engine</b> J.R. Codoni; K.Y. Cho; J.L. Hoke; F.R. Schauer
5:00-5:30 PM	<b>AIAA-2016-4884. Launch Vehicle Low Shock Stage Separation System</b> H. Golden; S. Sawhill
3:00 PM-6:00 PM, 251 E, <b>NFF-04. Nuclear Thermal Propulsion: Engines and Missions</b> , Technical Paper, <b>52nd AIAA/SAE/ASSEE Joint Propulsion Conference</b> , Chair: Claude Joyner, claud.joyner-ii@rocket.com, Aerojet Rocketdyne; Co-Chair: Stanley Borowski, stanley.k.borowski@nasa.gov, NASA Glenn Research Center	
3:00-3:30 PM	<b>AIAA-2016-4885. Nuclear Thermal Rocket - Arc Jet Integrated System Model</b> B.D. Taylor; W.J. Emrich
3:30-4:00 PM	<b>AIAA-2016-4886. Three-Dimensional Analysis of a Hydrogen Containment Process For Nuclear Thermal Engine Ground Testing</b> T. Wang; E.T. Stewart; F. Canabal
4:00-4:30 PM	<b>AIAA-2016-4887. Comparing Low Enriched Fuel to Highly Enriched Fuel for use in Nuclear Thermal Propulsion Systems</b> V. Patel; M. Eades; P. Venneri; C.R. Joyner

4:30-5:00 PM	<b>AIAA-2016-4888. Engine Design Attributes Relative to HEU and LEU Core Approaches for a Small Thrust NTP</b> C.R. Joyner; D.J. Levack; T. Jennings; M. Eades; V. Patel
5:00-5:30 PM	<b>Oral Presentation. Realizing Commercial Missions to the Moon Using Conventional and Bipropellant Nuclear Thermal Rocket (NTR) Propulsion</b> S.K. Borowski; S.W. Ryan; L.M. Burke; D.R. McCurdy; J.E. Fittje; C.R. Joyner
5:30-6:00 PM	<b>AIAA-2016-4889. Atmospheric Mining in the Outer Solar System: Outer Planet Orbital Transfer and Lander Analyses</b> B.A. Palaszewski
3:00 PM-6:00 PM, 255 C, PC-09. <b>Advanced Combustor Concepts</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Richard Hausen, richard.hausen@honeywell.com, Honeywell; Co-Chair: Edward Lynch, edward.lynch@rocket.com, Aerojet Rocketdyne	
3:00-3:30 PM	<b>AIAA-2016-4890. Alternative Bio-Derived JP-8 Class Fuel and JP-8 Fuel: Flame Tube Combustor Test Results Compared using a GE TAPS Injector Configuration</b> Y.R. Hicks; S.A. Tedder; R. Anderson
3:30-4:00 PM	<b>AIAA-2016-4891. A Comparison of Three Second-Generation Swirl-Venturi Lean Direct Injection Combustor Concepts</b> K.M. Tacina; P. Lee; H. Mongia; B.K. Dam; Z.J. He; D.P. Podboy
4:00-4:30 PM	<b>AIAA-2016-4892. Flame-Flow interaction under Distributed Combustion Conditions</b> A.E. Khalil; A.K. Gupta
3:00 PM-6:00 PM, 255 D, PC-10. <b>Combustion Instability</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Oliver Knab, oliver.knab@airbus.com, Airbus Defense & Space/airbus Launcher; Co-Chair: Tomasz Drozda, tomasz.g.drozda@nasa.gov, NASA Langley Research Center	
3:00-3:30 PM	<b>AIAA-2016-4893. Review of experimental test cases for modelling high frequency combustion instability (Invited paper)</b> J. Hardi; S. Gröning; S. Webster; S. Beinke; D. Suslov; M. Oschwald
3:30-4:00 PM	<b>AIAA-2016-4894. Generations of unstable combustion in a non-premixed GCH<sub>4</sub>/GOX rocket injector</b> H. Terashima; Y. Daimon
4:00-4:30 PM	<b>AIAA-2016-4895. Towards Numerical Prediction of Jet Fuels Sensitivity of Flame Dynamics in a Swirl Spray Combustion System</b> R. Ranjan; A. Panchal; G. Hannebique; S. Menon
4:30-5:00 PM	<b>AIAA-2016-4896. Exploration of POD-Galerkin Techniques for Developing Combustion Response Functions</b> C. Huang; W.E. Anderson; C. Merkle
5:00-5:30 PM	<b>AIAA-2016-4897. Variation of Dominant Instability Mode with Fuel Configuration in an Inverted Coaxial Injector</b> A. Dasari; M. Gamba
5:30-6:00 PM	<b>AIAA-2016-4898. Numerical Study of the Influence of the Opening Ratio on the Damping Capacity of the Injector</b> H. An; W. Nie; S. Feng



3:00 PM-6:00 PM, 255 E, PC-11. <b>Combustion Diagnostics</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Christoph Kirchberger, christoph.kirchberger@dlr.de, German Aerospace Center (DLR); Co-Chair: Simona Silvestri, silvestri@tum.de	
3:00-3:30 PM	<b>AIAA-2016-4899. Lean Blowout with a High Pressure Well Stirred Reactor</b> J.T. Gross; D. Shouse; C. Neuroth
3:30-4:00 PM	<b>AIAA-2016-4900. Fuel Distribution and Gas Temperature Measurements in a Nonuniformly-Fueled Bluff-Body Flame</b> B. Huelskamp; L.P. Goss; D. Richardson; G. Wang; A. Lynch; V. Belovich; A.W. Caswell
4:00-4:30 PM	<b>AIAA-2016-4901. Planar Laser Absorption Spectroscopy for the Resolution of Simultaneous, Spatially-Distinct Absorption Paths</b> J. France; M. Gamba
4:30-5:00 PM	<b>AIAA-2016-4902. Assessment of flames heat radiation prediction</b> A.R. da Silva; M.S. Venturini; N.R. Caetano
5:00-5:30 PM	<b>AIAA-2016-4903. Hydrocarbon Fuel Thermal Performance Modeling based on Systematic Measurement and Comprehensive Chromatographic Analysis</b> M.C. Billingsley; N. Keim; B. Hill-Lam; R. Synovec
3:00 PM-6:00 PM, 251 F, SATS-01. <b>Small Satellites I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Jeremy Straub, jastraub@gmail.com, University of North Dakota	
3:00-3:30 PM	<b>AIAA-2016-4904. Design Optimization and Performance Evaluation of A Monopropellant Satellite Thruster</b> C. Nichith; P. P; S. Sharan; S. Mani; V. Sanal Kumar
3:30-4:00 PM	<b>AIAA-2016-4905. Complete EM System Development for Busek's 1U CubeSat Green Propulsion Module</b> M. Tsay; J. Zwahlen; D. Lafko; C. Feng; M. Robin
4:00-4:30 PM	<b>AIAA-2016-4906. Development of Propulsion System with Bi-propellants Based on Green Propellant for Microsatellite</b> J. Matsushima; M. Kaku; M. Banno; H. Sahara; Y. Araki
4:30-5:00 PM	<b>AIAA-2016-4907. Development of a MEMS Pyrotechnic Thruster for Micro Propulsion Applications</b> H. Shukla; R.G. Singh Nandan; P. Shukla; V. Kumar N; M. Varma
3:00 PM-6:00 PM, 254 A, SR-04. <b>Advanced Solid Rockets (Nozzles, Cases, and Controllable)</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Co-Chair: Helmut Ciezki, helmut.ciezki@dlr.de, DLR - German Aerospace Center; Chair: Karl Naumann, karl.naumann@mbda-systems.de, Bayern-Chemie GmbH	

3:00-3:30 PM	<b>AIAA-2016-4909. Brazilian Thrust Vector Control System Development: Status and Trends</b> T. Wekerle; E. Barbosa; C.M. Batagini; L.E. Loures da Costa; L.G. Trabasso
3:30-4:00 PM	<b>AIAA-2016-4910. Design of Environmental Friendly Chevron Nozzles for Lower Stage Rockets</b> R. Sathyaprabha ; S. Vigneshwaran ; R. Manishaa; S. Vivek; S. Ajith; S. Mani; V. Sanal Kumar
4:00-4:30 PM	<b>AIAA-2016-4911. Investigation of Vortex Valve Controlled Variable Thrust SRM</b> X. Yu; Y. Wang; X. Wei
4:30-5:00 PM	<b>AIAA-2016-4908. Electrolytic Combustion in the Polyvinyl Alcohol + Hydroxyl Ammonium Nitrate Solid Propellant</b> J. Baird; J. Lang; A. Hiatt; R.A. Frederick
3:00 PM-6:00 PM, 151 AB, TM-04. <b>Heat Transfer and Transport Modeling and Analysis I</b> , Technical Paper, <b>14th International Energy Conversion Engineering Conference</b> , Co-Chair: Jayesh Mehta, jmehta@belcan.com, Belcan AETD	
3:00-3:30 PM	<b>AIAA-2016-4912. Effect of internal partitions on thermal comfort and IAQ level provided by underfloor air distribution system in a typical Office Space</b> A. AbouZeid; E.E. Khalil
3:30-4:00 PM	<b>AIAA-2016-4913. Thermal analysis of RBCC engine at ejector, ramjet and scramjet modes</b> T. Jing; G. He; B.B. Lin; W. Li; F. Qin; Y. Liu
4:00-4:30 PM	<b>AIAA-2016-4914. Numerical Study of Decreasing the Spread of Sarin (GB) in an Air-conditioned Aircraft Cabin</b> A.M. Farag; E.E. Khalil; M.M. Hassan
4:30-5:00 PM	<b>AIAA-2016-4915. Enhanced ECS/Generator Models in an Integrated Air Vehicle Platform</b> A. Donovan; R.A. Roberts; M. Wolff
5:00-5:30 PM	<b>AIAA-2016-4916. Predictions of the Air Flow Regimes and Thermal Comfort in Islamic Worship:Religious Rituals of Hajar and her infant Ishmael between Al-Safa and Al-Marwah.</b> A.A. ElDegwy; E.E. Khalil
6:00 PM-7:30 PM, Ballroom A-D, PLNRY-05. <b>Formula for Success and Longevity in the Aerospace Business</b> , Plenary, <b>Forum Event</b>	
7:00 PM-8:30 PM, 150 G, NFF-05. <b>Future Flight Propulsion Systems I</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Bryan Palaszewski, bryan.a.palaszewski@nasa.gov, NASA Glenn Research Center; Co-Chair: Brice Cassenti, cassenti@engr.uconn.edu, University of Connecticut	
7:00-7:30 PM	<b>AIAA-2016-4917. WWAT: Warp Drives, Wormholes, Antigravity and Time Travel</b> B.N. Cassenti
7:30-8:00 PM	<b>AIAA-2016-4918. Destination Universe: Some Thoughts on Faster-Than Light (FTL) Travel</b> G. Bennett

8:00-8:30 PM	<b>AIAA-2016-4919. Testing the Possibility of Weight Changes in Highly-Polarized Electrets</b> M. Tajmar; T. Schreiber
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Wednesday, July 27, 2016

Time	Session or Event Info
8:00 AM-9:00 AM, Ballroom A-D, <b>PLNRY-06. The Impact of Additive Manufacturing on the Design Process</b> , Plenary, <b>Forum Event</b>	
8:45 AM-9:30 AM, Exhibit Hall C, <b>NW-06. Networking Coffee Break</b> , Networking	
9:30 AM-12:00 PM, 255 E, <b>ADP-02. Seal Material Advancements and Advanced Seal Technology</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Patrick Dunlap, patrick.h.dunlap@nasa.gov, NASA Glenn Research Center; Co-Chair: Neelesh Sarawate, sarawate@ge.com, GE Global Research; Co-Chair: Bodhayan Dev, bodhayan.dev@ge.com, GE Global Research Center	
9:30-10:00 AM	<b>AIAA-2016-4920. Film Riding Pressure Activated Leaf Seal Proof of Concept</b> T. Kirk; A. Bowsher; P. Crudgington; C. Grondahl; J. Dudley; A. Pawlak
10:00-10:30 AM	<b>AIAA-2016-4921. Non-Contacting Finger Seals Static Performance Test Results at Ambient and High Temperatures</b> M.P. Proctor
10:30-11:00 AM	<b>AIAA-2016-4922. Characterization of thermoplastic-elastomeric seals at high pressures and temperatures</b> B. Dev; J. Wang; O.p. Samudrala; Q. Xuele
11:00-11:30 AM	<b>AIAA-2016-4923. An Electrically Conductive Elastomer Seal for Spacecraft</b> C.C. Daniels; H.A. Oravec; J. Mather; P.H. Dunlap
9:30 AM-12:00 PM, 251 C, <b>APC-03. Advanced Propulsion Concepts II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Aloysius Reisz, areisz@reiszeng.com, Reisz Engineers; Co-Chair: John Robinson, jwelshr@gmail.com, Retired f/Boeing	
9:30-10:00 AM	<b>AIAA-2016-4924. Experimental Investigation on Rotating Detonation Engine with Different Mixing Distance</b> X. Han; S. Zhang; J. Wang
10:00-10:30 AM	<b>AIAA-2016-4925. Laser powered air breathing blast wave propulsion guided by donut mode beam</b> K. Mori
10:30-11:00 AM	<b>AIAA-2016-4926. Feasibility Study of a DRBCC-Powered Single-Stage-To-Orbit Launch Vehicle</b> F. Zhang; H. Zhang; B. Wang
9:30 AM-12:00 PM, 151 G, <b>APS-04. Space and Aircraft Power Generation, Processing and Performance</b> , Technical Paper, <b>14th International Energy Conversion Engineering Conference</b> , Co-Chair: James Haines, jim.haines@btinternet.com, Retired - formerly ESA/ESTEC; Co-Chair: Giang Lam, giang.lam@lmco.com, Lockheed Martin Corporation	

9:30-10:00 AM	<b>AIAA-2016-4927. Solar Probe Plus (SPP) Power System Electronics</b> A.C. Baisden; D. Frankford
10:00-10:30 AM	<b>AIAA-2016-4928. Proposal and Development of a High Voltage Variable Frequency Alternating Current Power System for Hybrid Electric Aircraft</b> D.J. Sadey; L. Taylor; R. Beach
10:30-11:00 AM	<b>AIAA-2016-4929. Improving Solar Arrays for LILT and High Radiation Environments</b> J.S. McNatt; C.B. Taylor; M.F. Piszczor
11:00-11:30 AM	<b>AIAA-2016-4930. Further Analyses of the NASA Glenn Research Center Solar Cell and Photovoltaic Materials Experiment onboard the International Space Station</b> M.G. Myers; M.F. Piszczor; M.J. Krasowski; N.F. Prokop; D.S. Wolford; J.S. McNatt
9:30 AM-12:00 PM, 254 C, ECS-03. <b>Energetic Systems and Component Developments</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Brian Smith, besmith@psemc.com, Pacific Scientific Energetic Materials Company	
9:30-10:00 AM	<b>Oral Presentation. 2016 CAD/PAD Technology Roadmap Update</b> J.W. Burchett; T.J. Blachowski; A. Woods
10:00-10:30 AM	<b>AIAA-2016-4931. A Review on Relationship between Reliability and Lot Acceptance Sample Size for ECS</b> L.C. Yang
10:30-11:00 AM	<b>AIAA-2016-4932. Thermal-Mechanical Characterization of Bridgewires and Surrounding Materials Utilizing Thermal Transient Testing</b> C.J. Moore; J.G. Morgan; L.B. Roberson; J. Carney; J.T. Whittaker; J.D. Glass
11:00-11:30 AM	<b>AIAA-2016-4933. Detonating Cord Assembly (DCA) Second Source Project Overview</b> T.J. Blachowski; G. Teowee
9:30 AM-12:00 PM, 253 AB, EDU-03. <b>Propulsion Education III</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Robert Frederick, robert.frederick@uah.edu, University of Alabama @ Huntsville; Co-Chair: Matthew Hitt, mah0004@uah.edu, The University of Alabama in Huntsville	
9:30-10:00 AM	<b>AIAA-2016-4934. Measurement of Micro-Thruster Performance Characteristics Using a Magnetically Levitating Thrust Stand</b> A. Patel; D.M. Lineberry; J.T. Cassibry; R.A. Frederick
10:00-10:30 AM	<b>AIAA-2016-4936. A parametric model for thrust chamber preliminary design</b> R.N. Rezende; V. de Castro Perez; A. Pimenta
10:30-11:00 AM	<b>AIAA-2016-4937. ITA Candy rocket motor design and solid propellant manufacture challenges</b> D. Bontorin; S.R. Gomes; L. Rocco; R. Jachura; J.A. Rocco; K. Iha
11:00-11:30 AM	<b>AIAA-2016-4935. Laboratory Experimentation and Basic Research Investigating Electric Solid Propellant Electrolytic Characteristics</b> A. Hiatt; R.A. Frederick

9:30 AM-12:00 PM, 250 A, EP-20. <b>Plasma Plume Modeling</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Kimiya Komurasaki, komurasaki@al.t.u-tokyo.ac.jp, The University of Tokyo; Co-Chair: Robert Thomas, robert.e.thomas@nasa.gov,	
9:30-10:00 AM	<b>AIAA-2016-4938. On the Validity of the Boltzmann Assumption for Electrons in Plasma Plume Modeling</b> Y. Hu; J.J. Wang
10:00-10:30 AM	<b>AIAA-2016-4939. SM/MURF: Current Capabilities and Verification as a Replacement of AFRL Plume Simulation Tool COLISEUM</b> S.J. Araki; R.S. Martin; D. Bilyeu; J.W. Koo
10:30-11:00 AM	<b>AIAA-2016-4940. Numerical Simulations of Unsteady Plasma Plume Flows</b> C. Cai
11:00-11:30 AM	<b>AIAA-2016-4941. Carbon Back Sputter Modeling for Hall Thruster Testing</b> J.H. Gilland; G. Williams; J.M. Burt; J. Yim
9:30 AM-12:00 PM, 250 B, EP-21. <b>Mid Power Hall Thruster Development</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Stephane Mazouffre, Stephane.Mazouffre@cns-orleans.fr, ICARE-CNRS; Co-Chair: Petr Cagas, pcagas@vt.edu, Virginia Tech	
9:30-10:00 AM	<b>AIAA-2016-4942. Laboratory Testing of Hall Thrusters for All-electric Propulsion Satellite and Deep Space Explorers</b> I. Funaki; S. Iihara; S. Cho; K. Kubota; H. Watanabe; K. Fuchigami; Y. Tashiro
10:00-10:30 AM	<b>AIAA-2016-4943. Integration Tests of the 4 kW-class High Voltage Hall Accelerator Power Processing Unit with the HiVHAc and the SPT-140 Hall Effect Thrusters</b> H. Kamhawi; L.R. Pinero; T. Haag; W. Huang; D. Ahern; R. Liang; V. Shilo
10:30-11:00 AM	<b>AIAA-2016-4944. Research and Development of low-Power and High-Power Three-Types Hall Thrusters at Osaka Institute of Technology</b> T. Kakuma; H. Tahara
9:30 AM-12:00 PM, 250 C, EP-22. <b>Cathodes &amp; Neutralizers</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Dan Goebel, dan.goebel@jpl.nasa.gov, Jet Propulsion Laboratory; Co-Chair: Alejandro Lopez Ortega, alejandro.lopez.ortega@jpl.nasa.gov, Jet Propulsion Laboratory	
9:30-10:00 AM	<b>AIAA-2016-4945. Experimental Performance Characterization of a Novel Direct Current Cold Cathode Neutralizer for Electric Thruster Applications</b> A. Gurciullo; A.K. Knoll; P. Bianco
10:00-10:30 AM	<b>AIAA-2016-4946. 3D Particle Simulation for Electron Extraction Mechanisms of a Miniature Microwave Discharge Neutralizer</b> K. Hiramoto; Y. Nakagawa; H. Koizumi; K. Komurasaki; Y. Takao
10:30-11:00 AM	<b>AIAA-2016-4947. Performance of a Hall Thruster Operating with a Radio Frequency Plasma Cathode</b> H. Watanabe; M. Ichimura; H. Takegahara

9:30 AM-12:00 PM, 250 D, EP-23. <b>Advanced EP Concepts</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Co-Chair: Jonathan Kolbeck, jkolbeck@gwu.edu, ; Co-Chair: Taylor Swanson, taylorswanson@gmail.com, AEDC	
9:30-10:00 AM	<b>AIAA-2016-4948. Antenna Coupling and Thrust Measurements in a Direct Wave-Drive Thruster</b> M.S. Feldman; E. Choueiri
10:00-10:30 AM	<b>AIAA-2016-4949. Experimental Performance Analysis of the BUSTLab Microwave Electrothermal Thruster</b> M.S. Yildiz; M. Celik
10:30-11:00 AM	<b>AIAA-2016-4950. Advances in Duration Testing of the VASIMR<sup>®</sup> VX-200SS<sup>™</sup> System</b> J.P. Squire; M.D. Carter; F.R. Chang Diaz; L. Dean; M. Giambusso; J. Castro; J. Del Valle
11:00-11:30 AM	<b>AIAA-2016-4951. Preliminary Investigation of an External Discharge Plasma Thruster</b> B. Karadag; S. Cho; Y. Oshio; Y. Hamada; I. Funaki; K. Komurasaki
9:30 AM-12:00 PM, Ballroom F, F360-05. <b>Rising Leaders in Aerospace – Forum 360 Combined Session</b> , Forum 360, Forum 360	
9:30 AM-12:00 PM, 150 DE, FFP-02. <b>Fossil-Fuel Power Technologies II</b> , Technical Paper, <b>14th International Energy Conversion Engineering Conference</b> , Co-Chair: Ahsan Choudhuri, ahsan@utep.edu, University of Texas at El Paso; Chair: Bhupendra Khandelwal, bhupendra.khandelwal@gmail.com, The University of Sheffield	
9:30-10:00 AM	<b>AIAA-2016-4952. Reactor Parameters Effects on Hydrogen Production from Hydrogen Sulfide</b> A.M. El-Melih; S. Ibrahim; A. Al Shoaibi; A.K. Gupta
10:00-10:30 AM	<b>AIAA-2016-4953. The Effect of the Fuel Change from Petroleum Kerosene to HEFA Alternative Jet Fuel on the Emission of an RQL Type Gas Turbine Combustor</b> K. Okai; H. Fujiwara; M. Makida; K. Shimodaira; H. Yamada; M. Nakamura
10:30-11:00 AM	<b>AIAA-2016-4954. Bio-Ethanol Fuel Mixtures Theoretical Influence on Aviation Reciprocating Engines</b> J. Vega; J. Leyton; L.F. Monico
11:00-11:30 AM	<b>AIAA-2016-4955. Emission Characteristics of Laminar Prevaporized Petroleum and Biodiesel Flames at near Stoichiometric Conditions</b> A. Balakrishnan; R.N. Parthasarathy; S. Gollahalli
11:30-12:00 PM	<b>AIAA-2016-4956. Experimental Investigation of the Laminar Flame Speeds of GTL Fuel Blends</b> S. Samim; S.F. Ahmed
9:30 AM-12:00 PM, 254 B, GEPC-02/EOA-01. <b>Low Carbon Aviation- Electric Propulsion and Technologies</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Marty Bradley, marty.k.bradley@boeing.com, Boeing Commercial Airplanes; Co-Chair: Tarek Abdel-Salam, abdel-salamt@ecu.edu, East Carolina University; Co-Chair: Elena Garcia, elena.garcia@ae.gatech.edu, Georgia Institute of Technology	
9:30-10:00 AM	<b>Oral Presentation. Air Force Research Laboratory More Electric Aircraft Technologies</b> J. Nairus

10:00-10:30 AM	<b>Oral Presentation. Exploration of Enabling Technologies and Preliminary Design of High Efficiency, High Specific Power Drive for Hybrid Propulsion Systems</b> F. Luo
10:30-11:00 AM	<b>Oral Presentation. Carbon Emissions Impact of Hybrid Electric Propulsion and Secondary Power Systems</b> C.E. Lents
11:00-11:30 AM	<b>Oral Presentation. Enabling Technology Development for Hybrid and Distributed Electric Aircraft Propulsion</b> M.J. Armstrong
11:30-12:00 PM	<b>Oral Presentation. Review of Hybrid and Turbo Electric Propulsion for Large Transport Aircraft</b> J. Felder
9:30 AM-12:00 PM, 251 A, <b>GTE-14. Compressors III</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Jeffrey Csank, jeffrey.t.csank@nasa.gov, NASA Research Center	
9:30-10:00 AM	<b>AIAA-2016-4957. Application of Symmetry Property for Transient Response Analysis of Mistuned Bladed Disks</b> J. Yao; W. Zhu; N. Hu; J. Wang
10:00-10:30 AM	<b>AIAA-2016-4958. Analytical Modeling of Helium Compressor Performance</b> D. Wilson; P. Balaji
10:30-11:00 AM	<b>AIAA-2016-4959. Three-objective Optimization for the Design of Mechanical Component Using Evolutionary Numerical Simulation Approach</b> N.R. Nagaiah; J.S. Kapat; C.D. Geiger
11:00-11:30 AM	<b>AIAA-2016-4960. Optical Characterization of a Cross flow fan for Distributed Propulsion</b> G. Raush; L. Villafane; G. Paniagua
9:30 AM-12:00 PM, 251 B, <b>GTE-15/ABPSI-06/HSABP-11. Undergraduate Engine Design Competition</b> , Panel, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference (non-paper sessions)</b> , Chair: Jimmy Tai, jimmy.tai@ae.gatech.edu, Georgia Institute of Technology; Co-Chair: Christopher Perullo, chris.perullo@ae.gatech.edu, Georgia Institute of Technology	
9:30 AM-12:00 PM, 255 B, <b>HR-07. Design and Development of Novel Hybrid Rocket Motor Concepts II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Shane Coogan, shane.coogan@swri.org, Southwest Research Institute; Co-Chair: Yen-Sen Chen, ychen_esi@yahoo.com, National Space Organization Taiwan	
9:30-10:00 AM	<b>AIAA-2016-4961. Design of a Hybrid CubeSat Orbit Insertion Motor</b> E. Jens; A.C. Karp; B. Nakazono; D.B. Eldred; M.E. DeVost; D. Vaughan
10:00-10:30 AM	<b>AIAA-2016-4962. A Hybrid Mars Ascent Vehicle Concept for Low Temperature Storage and Operation</b> A.C. Karp; B. Nakazono; J. Benito Manrique; R. Shotwell; D. Vaughan; G.T. Story
10:30-11:00 AM	<b>AIAA-2016-4963. Experiments of an Ejector-jet using a Wax-based Fuel Hybrid Rocket Motor</b> Y. Nakada; I. Nakagawa

11:00-11:30 AM	<b>AIAA-2016-4964. Static Burning Tests on a Bread Board Model of Altering-intensity Swirling-Oxidizer-Flow-Type Hybrid Rocket Engine</b> K. Ozawa; T. Usuki; G. Mishima; K. Kitagawa; M. Yamashita; M. Mizuchi; S. Aso; Y. Tani; Y. Wada; T. Shimada
11:30-12:00 PM	<b>AIAA-2016-4965. Design of a Lab-Scale Hybrid Rocket Test Stand</b> J.C. Thomas; J.M. Stahl; G.R. Morrow; E.L. Petersen
9:30 AM-12:00 PM, 255 A, <b>HSABP-09. Experimental and Numerical Analysis of High Speed Propulsion Systems</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Timothy O'Brien, tim.obrien@raytheon.com, Raytheon Missiles Systems	
9:30-10:00 AM	<b>AIAA-2016-4966. Design and Experiments of a Continuous Rotating Detonation Engine: a Spinning Wave Generator and Modulated Fuel/Oxidizer Mixing</b> J.A. Boening; J.D. Heath; T.J. Byrd; J.V. Koch; A.T. Mattick; R.E. Breidenthal; C. Knowlen; M. Kurosaka
10:00-10:30 AM	<b>AIAA-2016-4967. Theoretical and Experimental Consideration of the Continuous Rotating Detonation Engine</b> M. Kurosaka; C. Knowlen; J.A. Boening
10:30-11:00 AM	<b>AIAA-2016-4968. Preliminary Experiments on Transpiration Cooling in Ramjets and Scramjets</b> F.T. Strauss; C. Manfretti; D. Freudenmann; J. Witte; S. Schlechtriem
11:00-11:30 AM	<b>AIAA-2016-4969. Flow Field Characteristics of Non-Axisymmetric High Subsonic Jets</b> G. Valentich; R. Kumar; D. Cuppoletti; M. Alphonso; C. Harris
9:30 AM-12:00 PM, 151 DE, <b>ITAR-03. Explosives and Energetic Materials (CAT-V)</b> , ITAR Presentations, <b>ITAR Presentations</b> , Chair: Joaquin Castro, joaquin.castro@rocket.com, Aerojet Rocketdyne; Co-Chair: Christopher Brophy, cmbrophy@nps.edu, Naval Postgraduate School	
9:30-10:00 AM	<b>AIAA-2016-4970. High Energy Radiation Effects on Spacecraft Service Valve O-ring Leak Rates</b> G.T. Coll; R. Gigliuto; G. Webster; M. Espinosa
10:00-10:30 AM	<b>AIAA-2016-4971. Microgravity Flight Testing of Multi-Pulse Small Solid Motors (Consider for ITAR Session)</b> S. Williams; P. Takahashi; J. Sousa; A. Nicholas
10:30-11:00 AM	<b>AIAA-2016-4972. Design and Development of Gaseous Hydrogen and Oxygen Tank Pressurization Assemblies for the Space Launch System Core Stage</b> H.M. Pitts; M. Ettlman; P. Park; V. Cardoso; R. Kelly; Y. Gerasimov
11:00-11:30 AM	<b>AIAA-2016-4973. Design and Fabrication of an Ultra-Low-Cost Variant of the Bantam Liquid Rocket Engine Family for Application to the DARPA Experimental Spaceplane (XS-1) and Other Future Low-Cost Launch Applications</b> J.H. Castro; W. Sack; J. Littles



11:30-12:00 PM	<b>AIAA-2016-4974. Pyroshock Dynamic Loading Impacts on Thermoelectric Module Assemblies and Bi-Couples in Multi-Mission Radioisotope Thermoelectric Generators</b> T.J. Hendricks; D.J. Neff; N. Keyawa; B.J. Nesmith; P. Bahrami; A. Derkevorkian; A.R. Kolaini
9:30 AM-12:00 PM, 251 D, LP-12. <b>Rocket Engine Components</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Silvio Chianese, silvio.chianese@spacex.com, SpaceX; Co-Chair: Andrew Devereaux, andrew.devereaux@thalesalieniaspace.com, Surrey Satellite Technology Ltd (SSTL)	
9:30-10:00 AM	<b>AIAA-2016-4975. Development and Testing of a O<sub>2</sub>/CH<sub>4</sub> Torch Igniter for Propulsion Systems</b> L.E. Sanchez; J. Chaparro; S.A. Torres; N.D. Love; A.R. Choudhuri
10:00-10:30 AM	<b>AIAA-2016-4976. Characterising the Infrared Signature of a Liquid Propellant Engine Plume</b> C.J. Higgins; T. Smithson; I. Coxhill; P. Fournier; S. Ringuette
10:30-11:00 AM	<b>AIAA-2016-4977. Digital Image Correlation Techniques Applied to Large Scale Rocket Engine Testing</b> P.R. Gradl
9:30 AM-12:00 PM, 251 E, LP-13. <b>Propulsion Systems - Design &amp; Test II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: David Coote, david.j.coote@nasa.gov, NASA Stennis Space Center; Co-Chair: Daniel Guadagnoli, guadagnoli.daniel@orbital.com, Orbital ATK	
9:30-10:00 AM	<b>AIAA-2016-4978. Numerical Studies of Dynamic Response for an Oxidizer Injector to Detonation Wave</b> K. Mikoshiba; S. Sardeshmukh; D. Stechmann; S.D. Heister
10:00-10:30 AM	<b>AIAA-2016-4979. Experimental Study of Liquid Injector Elements for Use in Rotating Detonation Engines</b> W.S. Anderson; D. Lim; M.R. Washington; S.D. Heister
10:30-11:00 AM	<b>AIAA-2016-4980. Monopropellant Hydrazine Thrusters—Bringing Updated Designs to Flight</b> V. Yarnot; M.B. Dawson; O.M. Morgan
11:00-11:30 AM	<b>AIAA-2016-4981. Effects of Water Hammer on Propulsion Systems</b> B. Brindle; J. Gilbert; J.D. Moore; G.A. Risha
9:30 AM-12:00 PM, 251 F, LP-14. <b>Turbomachinery</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Bogdan Marcu, bogdan.n.marcu@gmail.com, ; Co-Chair: Scott Forde, Scott.Forde@rocket.com, Aerojet Rocketdyne	
9:30-10:00 AM	<b>AIAA-2016-4982. Unique Characteristics of Imbalanced Torque Force of a Partial Admission Turbine for 50% Partiality</b> K. Yada; S. Kawasaki; M. Uchiumi; H. Kato; K. Funazaki
10:00-10:30 AM	<b>AIAA-2016-4983. The Design and Analysis of Low Solidity Vaned Diffusers for Increased Turbopump Throttling Capability</b> S.R. Sargent

10:30-11:00 AM	<b>AIAA-2016-4984. Turbopump Design and Development for the Virgin Galactic NewtonThree Engine System</b> S.R. Sargent; J. Noall; M. Becker; S. Macklin
11:00-11:30 AM	<b>AIAA-2016-4985. High Suction Performance Pumps with Large Inlet Blade Angles and an Integrated Stability Control Device</b> R.K. Lundgreen; K. Oliphant; D. Maynes; S.E. Gorrell
11:30-12:00 PM	<b>AIAA-2016-4986. Characterization of Rotating Cavitation in a Four Bladed Inducer</b> C. Lettieri; Z. Spakovszky; D. Jackson; V. Wang
9:30 AM-12:00 PM, 150 G, <b>NFF-06. Future Flight Propulsion Systems II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Brice Cassenti, cassenti@engr.uconn.edu, University of Connecticut; Co-Chair: Martin Tajmar, martin.tajmar@tu-dresden.de, Dresden University of Technology	
9:30-10:00 AM	<b>AIAA-2016-4987. Anomalous Electromagnetically Induced Propulsion Effects on Self-contained "RAMA" Devices</b> H.H. Brito; R. De Alessandro; M.A. Brito
10:00-10:30 AM	<b>AIAA-2016-4988. First Measurements of a 0.6 Gigawatt Superconducting Gravity-Impulse-Generator</b> I. Lörincz; M. Tajmar
10:30-11:00 AM	<b>AIAA-2016-4989. Propulsion Estimates for High Energy Lunar Missions Using Future Propellants</b> B.A. Palaszewski; G. Bennett
9:30 AM-12:00 PM, 255 C, <b>PC-12. Green Propulsion</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Christopher Cadou, cadou@umd.edu, University of Maryland; Co-Chair: Helmut Ciezki, helmut.ciezki@dlr.de, DLR - German Aerospace Center	
9:30-10:00 AM	<b>AIAA-2016-4990. Comparison of single and multi-injector GOC/CH4 combustion chambers</b> M. Celano; S. Silvestri; C. Bauer; N. Perakis; G. Schlieben; O.J. Haidn
10:00-10:30 AM	<b>AIAA-2016-4991. Investigation of Green Hypergolic Propellants for Hybrid Rockets</b> K. Stober; A. Thomas; B.J. Evans; B.J. Cantwell
10:30-11:00 AM	<b>AIAA-2016-4992. Characterization of a Multi-Injector GOX/CH4 Combustion Chamber</b> S. Silvestri; M. Celano; G. Schlieben; O.J. Haidn
11:00-11:30 AM	<b>AIAA-2016-4993. Studies on Flame Behaviors of GCH<sub>4</sub>/GO<sub>2</sub> Coaxial Jets in a Model Combustor at Elevated Pressure</b> H. Kim; S. Choi; T. Kim; O. Kwon
11:30-12:00 PM	<b>AIAA-2016-4994. A 1D Multiphase Mixture Model for the Design of Catalysts for Monopropellant Thrusters</b> C. Boffa; O.J. Haidn
9:30 AM-12:00 PM, 255 D, <b>PC-13. Single Injector Test Case Modeling</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Oskar Haidn, haidn@tum.de, Technische Universität München; Co-Chair: Yu Daimon, daimon.yu@jaxa.jp, Japan Aerospace Exploration Agency	

9:30-10:00 AM	<b>AIAA-2016-4995. Numerical Investigation of Flow and Combustion in a Single Element GCH<sub>4</sub>/GOX Rocket Combustor</b> C.M. Roth; O.J. Haidn; A. Chemnitz; T. Sattelmayer; G. Frank; H. Müller; J. Zips; R. Keller; P.M. Gerlinger; D. Maestro; B. Cuenot; H. Riedmann; L. Selle
10:00-10:30 AM	<b>AIAA-2016-4996. Numerical Investigation of Flow and Combustion in a Single-Element GCH<sub>4</sub>/GOX Rocket Combustor: Chemistry Modeling and Turbulence-Combustion Interaction</b> D. Maestro; B. Cuenot; A. Chemnitz; T. Sattelmayer; C. Roth; O.J. Haidn; Y. Daimon; R. Keller; P.M. Gerlinger; G. Frank; M. Pfitzner; L. Selle
10:30-11:00 AM	<b>AIAA-2016-4997. Numerical Investigation of Flow and Combustion in a Single-Element GCH<sub>4</sub>/GOX Rocket Combustor: A comparative LES study</b> H. Müller; J. Zips; M. Pfitzner; D. Maestro; B. Cuenot; S. Menon; R. Ranjan; P. Tudisco; L. Selle
11:00-11:30 AM	<b>AIAA-2016-4998. Numerical Modeling of Flow and Combustion in a Single-Element GCH<sub>4</sub>/GOX Rocket Combustor: Aspects of Turbulence Modeling</b> A. Chemnitz; T. Sattelmayer; C.M. Roth; O.J. Haidn; Y. Daimon; R. Keller; P.M. Gerlinger; J. Zips; M. Pfitzner
11:30-12:00 PM	<b>AIAA-2016-4999. On the Effects of Chemical Kinetics and Thermal Conditions on the Flow and Flame Features in a Single-Element GCH<sub>4</sub>/GOX Rocket Combustor</b> R. Ranjan; A. Panchal; S. Menon
9:30 AM-12:00 PM, 254 A, SR-05. <b>Solid Rocket Developments Past and Present</b> , Technical Paper, <b>52nd AIAA/SAE/ASME Joint Propulsion Conference</b> , Chair: Merlin Randall, Merlin.Randall@rocket.com, Aerojet-Rocketdyne East; Co-Chair: David Poe, david.poe@rocket.com, Aerojet Rocketdyne	
9:30-10:00 AM	<b>AIAA-2016-5000. Observation in Ballistic Evaluation Motor Static Firing: Graphite Nozzle Cracking</b> T. K; A. Rao; R. Jakka
10:00-10:30 AM	<b>AIAA-2016-5001. Multidisciplinary Optimization of a Solid Propellant Sectional Geometry for Internal Ballistic and Structural Strength Criteria</b> C. Tola; M. Nikbay
10:30-11:00 AM	<b>AIAA-2016-5002. Effect of Ageing on Mechanical Properties of Composite Solid Propellants</b> H. Naseem; H. Murthy; P. Ramakrishna
11:00-11:30 AM	<b>AIAA-2016-5003. "Thermal-Mechanical" Coupled Model Based on Porous Media Characteristics of EPDM insulator Char Layer</b> Y. Liu; J. Pei
9:30 AM-12:00 PM, 151 AB, TM-05. <b>Heat Transfer and Transport Modeling and Analysis II</b> , Technical Paper, <b>14th International Energy Conversion Engineering Conference</b> , Co-Chair: Calin Tarau, calin.tarau@1-act.com, Advanced Cooling Technologies; Chair: Essam Khalil, khalile1@asme.org, Cairo University	
9:30-10:00 AM	<b>AIAA-2016-5004. Air Cycle Machine Transient Modeling with Exergy Analysis</b> M. Bracey; S.R. Nuzum; R.A. Roberts; M. Wolff; J. Zumberge

10:00-10:30 AM	<b>AIAA-2016-5005. CFD Investigation of Smoke Management In Underground Tunnels</b> E.E. Khalil; W.M. El-Sayed Sweida; O. Huzzayyin
10:30-11:00 AM	<b>AIAA-2016-5006. Lumped Parameter Modelling and Testing of a Free Piston Stirling Engine Heat Exchanger Using Laminated Woven Copper Wire Mesh as Heat Transfer Areas</b> F.M. Senda; P.T. Senda; R.T. Dobson
11:00-11:30 AM	<b>AIAA-2016-5007. Oxidizer Composition Effects on NOx Emissions from Swirl Burner</b> E.E. Khalil; A. Ahmed; M.M. Hassan; H. Kayed
1:30 PM-3:00 PM, Ballroom A-D, <b>PLNRY-07. The Strategic Challenges and Opportunities in the Power and Propulsion Markets</b> , Plenary, Forum Event	
3:00 PM-6:00 PM, 255 F, <b>ABPSI-05. Propulsion Systems Integration</b> , Technical Paper, <b>52nd AIAA/SAE/ASME Joint Propulsion Conference</b> , Chair: Darrell Crowe, darrell.crowe@us.af.mil, Air Force Institute of Technology; Co-Chair: Atma Prakash, a.prakash@tees.ac.uk, University of Teesside	
3:00-3:30 PM	<b>AIAA-2016-5008. Computational and Experimental Evaluation of a Complex Inlet Swirl Pattern Generation System</b> D.D. Sanders; C. Nessler; W.W. Copenhaver; M.G. List; T.J. Janczewski
3:30-4:00 PM	<b>AIAA-2016-5009. Parametrical Optimization of a three-dimensional Dump Diffuser with Aerodynamically-shaped Flame Tube for Modern Aircraft Engines</b> C. Selvakarthick ; S. Ajith; H. Nagaraju Doddi; V. Sanal Kumar; V. Rangaraj; J.K. Allen
4:00-4:30 PM	<b>AIAA-2016-5010. Development of an Engine-Integrated Fuel Cell Concept Demonstrator: Phase I Efforts</b> L.M. Pratt; S. Vannoy; C.P. Cadou
4:30-5:00 PM	<b>AIAA-2016-5011. Development And Analysis of a Group 1 UAV Series Hybrid Power System with Two Engine Options</b> M.D. Hageman; C. Wisniewski
3:00 PM-6:00 PM, 151 AB, <b>ECD-03. Stirling Components and Systems</b> , Technical Paper, <b>14th International Energy Conversion Engineering Conference</b> , Chair: Terry Hendricks, terry.j.hendricks@jpl.nasa.gov, NASA-Jet Propulsion Laboratory; Co-Chair: Lee Mason, lee.s.mason@nasa.gov, NASA Glenn Research Center	
3:00-3:30 PM	<b>AIAA-2016-5012. Fission Surface Power Technology Demonstration Test Results</b> M.H. Briggs; M.A. Gibson; S.M. Geng; J. Sanzi
3:30-4:00 PM	<b>AIAA-2016-5013. Two-Step Multi-Physics Analysis of an Annular Linear Induction Pump for Fission Power Systems</b> S.M. Geng; T.V. Reid
4:00-4:30 PM	<b>AIAA-2016-5014. Performance Testing of a High Temperature Linear Alternator for Stirling Convertors</b> J. Metscher; S.M. Geng

4:30-5:00 PM	<b>AIAA-2016-5015. Active Vibration Reduction of the Advanced Stirling Converter</b> S.D. Wilson; J. Metscher; N.A. Schifer
5:00-5:30 PM	<b>AIAA-2016-5016. Improving Power Density of Free-Piston Stirling Engines</b> M.H. Briggs
5:30-6:00 PM	<b>AIAA-2016-5017. Maturing Technologies for Stirling Space Power Generation</b> S.D. Wilson; B.C. Nowlin; M.W. Dobbs; P.C. Schmitz; J.J. Huth
3:00 PM-5:30 PM, 254 B, ECS-04. <b>Young Professionals and Energetic Components &amp; Systems - An Educational Series Panel Session, Panel, 52nd AIAA/SAE/ASEE Joint Propulsion Conference (non-paper sessions)</b>	
3:00 PM-6:00 PM, 150 G, EE-02. <b>Renewable Fuel Generation And Processing</b> , Technical Paper, <b>14th International Energy Conversion Engineering Conference</b> , Co-Chair: Scott Duncan, sduncan@asdl.gatech.edu, Aerospace Systems Design Laboratory, Georgia Tech; Chair: Yinon Yavor, yinonyavor@tx.technion.ac.il, Technion - Israel Ins. of Technology	
3:00-3:30 PM	<b>AIAA-2016-5018. Optimal Technique for Separation of Particle-rich Syngas in Cyclone for Efficient Methanation</b> O.O. Olalekan; E.O. Ogedengbe
3:30-4:00 PM	<b>AIAA-2016-5019. Dry (CO<sub>2</sub>) Reformation of Methane using Nickel-Barium Catalyst</b> K.R. Burra; A.K. Gupta
4:00-4:30 PM	<b>AIAA-2016-5020. Simultaneous Differential Thermal and Thermogravimetric Analysis of Chicken Manure Gasification using Nitrogen and Carbon Dioxide</b> R.S. Amano; M.S. Hussaein
4:30-5:00 PM	<b>AIAA-2016-5021. Aluminum-Water Reaction Mechanism – Modeling of the Different Reaction Stages</b> Y. Yavor
5:00-5:30 PM	<b>AIAA-2016-5022. The Generalized Onsager Model for a Binary Gas Mixture with Swirling Feed</b> S. Pradhan
5:30-6:00 PM	<b>AIAA-2016-5023. Analysis of High-Speed Rotating Flow in 2D Polar (<math>r - \theta</math>) Coordinate</b> S. Pradhan
3:00 PM-6:00 PM, 250 A, EP-24. <b>HERMeS Hall Thruster II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Taylor Matlock, tmatlock17@ucla.edu, ; Co-Chair: Steve Gildea, stephen.gildea@us.af.mil, AFRL	
3:00-3:30 PM	<b>AIAA-2016-5024. Transient Thermal Analysis of the 12.5 kW HERMeS Hall Thruster</b> S.W. Reilly; M.J. Sekerak; R.R. Hofer
3:30-4:00 PM	<b>AIAA-2016-5025. 2000-hour Wear-Testing of the HERMeS Thruster</b> G. Williams; J.H. Gilland; P.Y. Peterson; H. Kamhawi; W. Huang; M. Swiatek; C. Joppeck; J. Yim; T. Haag
4:00-4:30 PM	<b>AIAA-2016-5026. Hollow Cathode Assembly Development for the HERMeS Hall Thruster</b> T.R. Sarver-Verhey; H. Kamhawi; D.M. Goebel; J.E. Polk; P.Y. Peterson; D.A. Robinson

4:30-5:00 PM	<b>AIAA-2016-5027. NASA's HERMeS Hall Thruster Electrical Configuration Characterization</b> P.Y. Peterson; H. Kamhawi; W. Huang; G. Williams; J.H. Gilland; J. Yim; R.R. Hofer; D.A. Herman
5:00-5:30 PM	<b>AIAA-2016-5028. Ion Acoustic Turbulence and Ion Energy Measurements in the Plume of the HERMeS Thruster Hollow Cathode</b> N. Yanes; B. Jorns; A. Friss; J.E. Polk; P. Guerrero; J.M. Austin
3:00 PM-6:00 PM, 250 B, EP-25. <b>High Power Hall Thruster &amp; PPU Development</b> , Technical Paper, <b>52nd AIAA/SAE/ASSEE Joint Propulsion Conference</b> , Chair: Olivier Duchemin, olivier.duchemin@sncma.fr, Snecma S.A.; Co-Chair: Ryan Conversano, ryan.w.conversano@jpl.nasa.gov, Jet Propulsion Laboratory	
3:00-3:30 PM	<b>AIAA-2016-5029. Investigation of Channel Interactions in a Nested Hall Thruster Part II: Probes and Performance</b> S.E. Cusson; E.T. Dale; A. Gallimore
3:30-4:00 PM	<b>AIAA-2016-5030. Investigation of Channel Interactions in a Nested Hall Thruster Part I: Acceleration Region Velocimetry</b> M.P. Georgin; V. Dhaliwal; A. Gallimore
4:00-4:30 PM	<b>AIAA-2016-5031. Performance of a High-Fidelity 4kW-Class Engineering Model PPU and Integration with HiVHAc System</b> L.R. Pinero; H. Kamhawi; V. Shilo
4:30-5:00 PM	<b>AIAA-2016-5032. Electric Propulsion Electronics Activities in Europe 2016</b> M. Gollor; E. Bourguignon; G. Glorieux; N. Wagner; J. Palencia; P. Galantini; W. Dechent; A. Franke; U. Schwab; G. Tuccio
5:00-5:30 PM	<b>AIAA-2016-5033. High Input Voltage, Power Processing Unit Performance Demonstration</b> W. Santiago; K. Bozak; L.R. Pinero; R.J. Scheidegger; M.C. Gonzalez; A.G. Birchenough; M.J. Garret; N.V. Ivanov
3:00 PM-6:00 PM, 250 C, EP-26. <b>Magnetoplasmdynamics and EP Diagnostics</b> , Technical Paper, <b>52nd AIAA/SAE/ASSEE Joint Propulsion Conference</b> , Chair: Robert Lobbia, lobbia@umich.edu, University of Michigan; Co-Chair: Peter Peterson, peter.y.peterson@nasa.gov, NASA Glenn Research Center	
3:00-3:30 PM	<b>AIAA-2016-5034. Plume and beam properties of miniaturized low-power cylindrical Hall thruster for micro-satellites</b> H. Kim; S. Lee; Y. Lim; J. Kim; W. Choe
3:30-4:00 PM	<b>AIAA-2016-5035. Kinetic modelling of collisionless electron cooling on magnetized plasma expansions</b> S. Correyero Plaza; J. Navarro; E. Ahedo; G. Sánchez
4:00-4:30 PM	<b>AIAA-2016-5036. Measurement of Electron and Neutral Atom Density Downstream of an Electric Propulsion</b> N. Yamamoto; M. Iwamoto; T. Morita; H. Nakashima

4:30-5:00 PM	<b>AIAA-2016-5037. Collisionless electron cooling in unmagnetized plasma thruster plumes</b> M. Merino-Martinez; P. Fajardo; E. Ahedo
5:00-5:30 PM	<b>AIAA-2016-5038. Foundation of the new laboratory - MIPT Plasma Propulsion Lab</b> A. Skrylev; D. Krivoruhko; O. Gorshkov
5:30-6:00 PM	<b>AIAA-2016-5039. Thrust Performance and Cathode Temperature Evaluation of MW Class Quasi-Steady MPD Thruster</b> Y. Oshio; S. Tonooka; I. Funaki
3:00 PM-6:00 PM, 250 E, <b>EP-28. Micropropulsion</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: William Hoskins, wah@rocket.com, Aerojet Rocketdyne; Co-Chair: Matthew Glascock, msgdm3@mst.edu,	
3:00-3:30 PM	<b>AIAA-2016-5040. Micropropulsion Based on Vacuum Arc Physics and Technology: A Review</b> J. Kolbeck; M. Keidar; A. Anders
3:30-4:00 PM	<b>AIAA-2016-5041. A Vacuum Arc Thruster with Ablatable Anode</b> J. Kolbeck; J.N. Lukas; G.L. Teel; M. Keidar
4:00-4:30 PM	<b>AIAA-2016-5042. Preliminary Measurements of an Integrated Prototype of the CubeSat Ambipolar Thruster</b> T. Collard; J. Sheehan
4:30-5:00 PM	<b>AIAA-2016-5043. Linear Actuated Micro-Cathode Arc Thruster System</b> S.A. Hurley; M. Keidar
5:00-5:30 PM	<b>AIAA-2016-5044. The IFM 350 Nano Thruster - Introducing very high <math>\Delta v</math> Capabilities for Nanosats and Cubesats</b> A. Reissner
5:30-6:00 PM	<b>AIAA-2016-5045. Lifetime Testing of the mN-FEEP Thruster</b> A. Reissner
3:00 PM-6:00 PM, 250 F, <b>GTE-16. Turbines IV</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Christopher Perullo, chris.perullo@ae.gatech.edu, Georgia Institute of Technology	
3:00-3:30 PM	<b>AIAA-2016-5046. Determination of Transient Heat Transfer Rates for a Film Cooled Metal Plate in a Blowdown Facility using Infrared Thermography</b> L. Chen; R.M. Mathison
3:30-4:00 PM	<b>AIAA-2016-5047. Integrated Turbine Tip Clearance and Gas Turbine Engine Simulation</b> J.W. Chapman; T. Guo; J.L. Kratz; J.S. Litt
4:00-4:30 PM	<b>AIAA-2016-5048. An Experimental and Numerical Investigation of the Flow Field and Heat Transfer from a Single Impinging Jet with Varying Confinement Conditions</b> J.D. Hodges; L. Blanchette; H. Zawati; E. Fernandez; J. Rodriguez; J.S. Kapat
4:30-5:00 PM	<b>AIAA-2016-5049. Multi-objective optimization method for high pressure turbine casing based on thermal-structural coupling analysis</b> W. Chen; Z. Zhao; X. Dai

3:00 PM-6:00 PM, 251 A, <b>GTE-17. Aerodynamic Flows in Gas Turbine Engines</b> , Technical Paper, <b>52nd AIAA/SAE/ASME Joint Propulsion Conference</b> , Chair: Arun Suryanarayanan, arun.surya@fmcti.com, FMC Technologies	
3:00-3:30 PM	<b>AIAA-2016-5050. Transition and turbulence in a wall-bounded channel flow at high Mach number</b> S. Pradhan
3:30-4:00 PM	<b>AIAA-2016-5051. Large eddy simulation of flat plate film cooling flow characteristics based on plasma actuation</b> G. Li; J. Yu; F. Chen; L. Li; Y. Song
4:00-4:30 PM	<b>AIAA-2016-5052. Application of the Maximum Lyapunov Exponent to Analyze the Effect on the Flow Separation with Vibration Wall W.</b> Jinchun; F. Xin; G. Huang; H. Shuli; Z. Yuanchi
4:30-5:00 PM	<b>AIAA-2016-5053. Experimental Study on Effusion Cooling with Tangential Air Inlet</b> H. Yu; J. Suo; H. Liang; L. Zheng
5:00-5:30 PM	<b>AIAA-2016-5054. Application of Crossflow Transition Criteria to Local Correlation-Based Transition Model</b> C. Bode; J. Friedrichs; C. Müller; F. Herbst
3:00 PM-6:00 PM, 251 B, <b>GTE-18. Gas Turbine Inlets</b> , Technical Paper, <b>52nd AIAA/SAE/ASME Joint Propulsion Conference</b> , Chair: David Foutch, david.w.foutch@boeing.com, The Boeing Company	
3:00-3:30 PM	<b>AIAA-2016-5055. Numerical investigation on influence of suction in S-shaped inlet to the rear fan-stage performance</b> J. Yu; H. Liu; L. Liu; G. Li; F. Chen; Y. Song
3:30-4:00 PM	<b>AIAA-2016-5056. Performance Estimation for Serpentine Nozzle Coupled with Aero-engine</b> S. Xiaolin; Z. Wang; L. Zhou; J. Shi
4:00-4:30 PM	<b>AIAA-2016-5057. Fast Uncertainty Quantification in Engine Nacelle Inlet Design Using a Reduced Dimensional Polynomial Chaos Approach</b> X. Gao; Y. Wang; N. Spotts; N. Xie; S. Roy; A. Prasad
4:30-5:00 PM	<b>AIAA-2016-5058. Analysis and Comparison of Inlet Distortion Flow Physics at Design and Near Stall Operating Condition Using Proper Orthogonal Decomposition</b> R.A. Spencer; S.E. Gorrell; M. Jones; E. Duque
5:00-5:30 PM	<b>AIAA-2016-5059. Modeling of ice accretion on rotating cone in aero-engine</b> L. Zhang; M. Zhang; X. Zhang; Z. Liu
3:00 PM-6:00 PM, 251 C, <b>GTE-19. Gas Turbine Engine Modeling</b> , Technical Paper, <b>52nd AIAA/SAE/ASME Joint Propulsion Conference</b> , Chair: Jimmy Tai, jimmy.tai@ae.gatech.edu, Georgia Institute of Technology	
3:00-3:30 PM	<b>AIAA-2016-5060. Exergetic, Exergoeconomic and Exergoenvironmental Analysis of Intercooled Gas Turbine Engine</b> A.S. Almutairi; P. Pilidis; N. Al-Mutawa



3:30-4:00 PM	<b>AIAA-2016-5061. Dynamic Modeling of a Mixed-Flow Afterburning Turbofan Using MATLAB/Simulink</b> R. Buettner; R.A. Roberts; M. Wolff
4:00-4:30 PM	<b>AIAA-2016-5062. Design Parameter Identification of the Air Supply for a Turbohaft Engine Quick-Start System</b> M.R. Kerler; C. Schäffer; W. Erhard; V. Gümmer
4:30-5:00 PM	<b>AIAA-2016-5063. Development and Validation of an NPSS Model of a Small Turbojet Engine</b> S. Vannoy; C.P. Cadou
5:00-5:30 PM	<b>AIAA-2016-5064. Uncertainty Quantification and Management in Engine Conceptual Design</b> J.C. Tai; J.M. Mines; E.J. Inclan; S.Y. Zhu
5:30-6:00 PM	<b>AIAA-2016-5065. Size Estimation and Performance Analysis of a New Intercooled and Recuperated Aero-engine</b> Y. Xu; H. Tang; M. Chen
3:00 PM-6:00 PM, 255 B, HR-08. <b>Internal Ballistics Modeling II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Ashley Karp, ashley.c.karp@jpl.nasa.gov, Jet Propulsion Laboratory; Co-Chair: Mario Kobald, mario.kobald@dlr.de, DLR-German Aerospace Center	
3:00-3:30 PM	<b>AIAA-2016-5066. Modeling of Paraffin-Based Fuels in the Simulation of Hybrid Rocket Flowfields</b> G. Leccese; D. Bianchi; F. Nasuti
3:30-4:00 PM	<b>AIAA-2016-5067. Pressure-Measurement Based Estimation of Fuel Regression Rate in Hybrid Rockets</b> C. Carmicino; D. Pastrone
4:00-4:30 PM	<b>AIAA-2016-5068. Development and Testing of Three Alternative Designs for Additively Manufactured Hybrid Thrusters</b> S.A. Whitmore; S. Mathias
4:30-5:00 PM	<b>AIAA-2016-5069. Generalized Trkalian Flows: Swirling Motion in Rockets with Arbitrary Headwall Injection</b> O.M. Cecil; J. Majdalani
3:00 PM-6:00 PM, 255 A, HSABP-10. <b>Experimental Developments in High-speed Air-Breathing Systems</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Robert Moehlenkamp, robert.moehlenkamp@rocket.com, Aerojet Rocketdyne	
3:00-3:30 PM	<b>AIAA-2016-5070. Control of Shock Wave – Boundary Layer Interaction Using Nanosecond Dielectric Barrier Discharge Plasma Actuators</b> K. Kinefuchi; A. Starikovskiy; R. Miles
3:30-4:00 PM	<b>AIAA-2016-5071. Experimental Investigation of Fuel Cooled Combustor</b> L. Taddeo; N. Gascoin; K. Chetehouna; A. Ingenito; F. Gamma; M. Bouchez; B. Le Naour
4:00-4:30 PM	<b>AIAA-2016-5072. Experimental Study on Start/Unstart Behavior of Two Dimensional Mixed Compression Inlet by Cowl Actuation</b> R. Ananthapadmanaban; T. Murganandam

3:00 PM-6:00 PM, 151 DE, ITAR-04. <b>Launch Vehicles II (CAT-IV)</b> , ITAR Presentations, <b>ITAR Presentations</b> , Chair: Narendra Joshi, narendra_joshi@ge.com, GE; Co-Chair: Kailas Kailasanath, KAILAS@LCP.NRL.NAVY.MIL, Naval Research Laboratory	
3:00-3:30 PM	<b>AIAA-2016-5073. The Influence of Pore Pressure Modeling on Thermal Analysis of Charring Materials</b> T.S. Laker; M.E. Ewing
3:30-4:00 PM	<b>AIAA-2016-5074. Nusselt Number Correlation for Rocket Nozzle Analysis</b> B. Losser; M.E. Ewing
4:00-4:30 PM	<b>AIAA-2016-5075. Experimental Investigation of Fine Droplet Injectors on AF-M315E Microthruster Operation</b> R. Grist; C. Knowlen; G. Shaw; S. Sawhill
4:30-5:00 PM	<b>AIAA-2016-5076. Engine Inlet Impacts on Mixing, Operability and Performance of Rotating Detonation Wave Combustors</b> C.M. Brophy; A.D. Chaves
5:00-5:30 PM	<b>AIAA-2016-5077. Development and Validation of Autonomous Operational Sequences for the NEXT System</b> R. Thomas; M.J. Patterson
3:00 PM-6:00 PM, 251 D, LP-15. <b>Injectors</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Ivett Leyva, ivett.leyva@us.af.mil, AFOSR; Co-Chair: Stephen Schumaker, stephen.schumaker@edwards.af.mil, Air Force Reseach Laboratory	
3:00-3:30 PM	<b>AIAA-2016-5078. Study on Combustion Characteristics of LOX/LNG (methane) Co-axial Type Injector under High Pressure Condition</b> H. Asakawa; H. Nanri; I. Masuda; R. Shinohara; Y. Ishikawa; H. Sakaguchi
3:30-4:00 PM	<b>AIAA-2016-5079. Mixing of Supercritical Fluid in Shear Coaxial Injector Configuration</b> S.V. Sardeshmukh; W.E. Anderson
4:00-4:30 PM	<b>AIAA-2016-5080. Performance Evaluation of Rocket Engine Combustors using Ethanol/Liquid Oxygen Pintle Injector</b> K. Sakaki; H. Kakudo; S. Nakaya; M. Tsue; R. Kanai; K. Suzuki; T. Inagawa; T. Hiraiwa
4:30-5:00 PM	<b>AIAA-2016-5081. Study on atomization and combustion characteristics of LOX/Methane pintle injectors</b> F. Xinxin; S. Chibing
3:00 PM-6:00 PM, 251 E, LP-16. <b>Combustion Stability</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Paul Gloyer, paul.gloyer@gtlcompany.com, Gloyer-Taylor Laboratory; Co-Chair: David Lineberry, linebed@uah.edu, UAH Propusion Research Center	
3:00-3:30 PM	<b>AIAA-2016-5082. Dynamic Characteristics of Various Liquid Propulsion Engine Cycles as Relates to Pogo Stability Analysis</b> D.L. Ransom

3:30-4:00 PM	<b>AIAA-2016-5083. Experimental Investigation of Transverse Combustion Instabilities in a High Pressure Multi-Element Combustor</b> R.M. Gejji; B.L. Austin; W.E. Anderson
4:00-4:30 PM	<b>AIAA-2016-5084. Large Eddy Simulations of Transverse Combustion Instability in a Multi-element Injector</b> M.E. Harvazinski; Y. Desai; D.G. Talley; V. Sankaran
4:30-5:00 PM	<b>AIAA-2016-5085. High Amplitude Acoustic Field Effects on Air-Assisted Liquid Jet</b> A. Ficuciello; F.J. Baillot; J. Blaisot; C. Richard; M. Théron
5:00-5:30 PM	<b>AIAA-2016-5086. High Frequency Transverse Acoustic Forcing of Cryogenic Impinging Jets at High Pressure</b> M. Roa; S.A. Schumaker; D.G. Talley
5:30-6:00 PM	<b>AIAA-2016-5087. Numerical Investigation on Combustion Instability in a small MMH/NTO Liquid Rocket Engine</b> J. Qin; H. Zhang; B. Wang
3:00 PM-6:00 PM, 251 F, LP-17. <b>Combustors II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Anne Lekeux, anne.lekeux@cnes.fr, CNES; Co-Chair: Gregory Coll, Gregory.t.coll@nasa.gov, Orbital ATK	
3:00-3:30 PM	<b>AIAA-2016-5088. Material Compatibility of Bio-Ethanol Fuel with Rocket Engine Combustion Chamber Cooling Channels</b> N. Azuma; D. Ogawa; A. Iijima; K. Higashino; T. Hiraiwa; M. Oguma
3:30-4:00 PM	<b>AIAA-2016-5089. Designing and Building a Hydrogen Peroxide-Kerosene Rocket Engine</b> V. Tacussis; Z. Seider; A. Demarest; S. Nyquist
4:00-4:30 PM	<b>AIAA-2016-5090. Modeling of Fuel Film Cooling Using Steady State RANS and Unsteady DES Approaches</b> K.C. Brown; E.B. Coy; M.E. Harvazinski; V. Sankaran
4:30-5:00 PM	<b>AIAA-2016-5091. Development of Hydrogen Peroxide/Kerosene 2,500 N Bipropellant Thruster for Long-term Operation by Film Cooling</b> S. Heo; S. Kwon; S. Jung
3:00 PM-6:00 PM, 253 AB, LP-18. <b>Green Propellants III</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Timothee Pourpoint, timothee@purdue.edu, Purdue University; Co-Chair: J Arthur Sauer, sauerc@orbitec.com, Orbital Technologies Corporation	
3:00-3:30 PM	<b>AIAA-2016-5092. Development and testing of a nitrous-oxide/ethanol bi-propellant rocket engine</b> J. Phillip; S. Youngblood; M. Grubelich; W.V. Saul; M.J. Hargather
3:30-4:00 PM	<b>AIAA-2016-5093. Study on the Thermal Decomposition of Bioethanol as a High-Pressure Rocket Propellant</b> A. Iijima; D. Nakata; K. Higashino

4:00-4:30 PM	<b>AIAA-2016-5094. Pressure Drop Measurement of Porous Materials: Flashback Arrestors for a <math>N_2O/C_2H_4</math> Premixed Green Propellant</b> L.K. Werling; S. Müller; A. Hauk; H.K. Ciezki; S. Schleichriem
3:00 PM-6:00 PM, 255 C, PC-14. <b>Combustion Modeling</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Dario Maestro, maestro@cerfacs.fr; Co-Chair: Christoph Roth, Christoph.roth@ltf.mw.tum.de, TU München	
3:00-3:30 PM	<b>AIAA-2016-5095. An Overview of Spray Modeling With OpenNCC and its Application to Emissions Predictions of a LDI Combustor at High Pressure</b> M.S. Raju
3:30-4:00 PM	<b>AIAA-2016-5096. Numerical Investigation of Liquid Jet Breakup and Droplet Statistics with Comparison to X-ray Radiography</b> L.G. Bravo; D. Kim; F. Ham; C. Powell; D. Duke; K. Matusik; A. Kastengren; A. Swantek
4:00-4:30 PM	<b>AIAA-2016-5097. Computational simulation on the performance of Scramjet combustor using Multi-strut circular shaped injector</b> K. Pandey; G. Choubey
4:30-5:00 PM	<b>AIAA-2016-5098. Solid rocket motor burn simulation considering complex 3D propellant grain geometries</b> G. Mejia; R. Jachura; S.R. Gomes; L. Rocco; J.A. Rocco; K. Iha
3:00 PM-6:00 PM, 255 D, PC-15. <b>Rotating Detonation Concepts</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Jeffrey Murphy, jeffrey.j.murphy@aero.org, The Aerospace Corporation; Co-Chair: Christopher Cadou, cadou@umd.edu, University of Maryland	
3:00-3:30 PM	<b>AIAA-2016-5099. High-Pressure Rotating Detonation Engine Testing and Flameholding Analysis with Hydrogen and Natural Gas</b> D. Stechmann; S.D. Heister; S. Sardeshmukh
3:30-4:00 PM	<b>AIAA-2016-5100. Experimental Study of Effects of Injector Configurations on Rotating Detonation Engine Performance</b> K. Goto; Y. Kato; K. Ishihara; K. Matsuoka; J. Kasahara; A. Matsuo; I. Funaki
4:00-4:30 PM	<b>AIAA-2016-5101. Numerical Simulation towards Investigating the Factor for Velocity Decrease of Detonation Wave in Rotating Detonation Engine Chamber</b> J. Fujii; Y. Kumazawa; A. Matsuo; S. Nakagami; K. Matsuoka; J. Kasahara
4:30-5:00 PM	<b>AIAA-2016-5102. Numerical Study for Rotating Detonation Propagation in a Two-Parallel-Plane Combustor</b> Y. Kumazawa; J. Fujii; A. Matsuo; S. Nakagami; K. Matsuoka; J. Kasahara
5:00-5:30 PM	<b>AIAA-2016-5103. Experimental Study of Research of Centrifugal-Compressor-Radial-Turbine Type Rotating Detonation Engine</b> C. Ishiyama; K. Miyazaki; S. Nakagami; K. Matsuoka; J. Kasahara; A. Matsuo; I. Funaki

3:00 PM-6:00 PM, 255 E, PC-16. <b>Combustion Dynamics II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Bruce Chehroudh, chehroudh@aol.com, Advanced Technology Consultants; Co-Chair: John Leylegian, John.Leylegian@manhattan.edu, Manhattan College	
3:00-3:30 PM	<b>AIAA-2016-5104. Comparative Analysis of Alternative Fuels in Detonation Combustion</b> M. Azami; M. Savill
3:30-4:00 PM	<b>AIAA-2016-5105. Numerical Simulation of Interaction of Detonation with Metal Particles in Condensed Matter</b> J. Zhang; T.L. Jackson
4:00-4:30 PM	<b>AIAA-2016-5106. Numerical Studies of Detonation Initiation by Supersonic Projectiles using a High-Order Adaptive Cut-cell Method</b> B. Muralidharan; S. Menon
4:30-5:00 PM	<b>AIAA-2016-5107. An Experimental Study on the Deflagration-to-Detonation Transition in Millimeter Scale Tubes</b> J. He; W. Fan; T. Yan; Y. Chi
5:00-5:30 PM	<b>AIAA-2016-5108. Numerical investigation of the initiation and propagation of oblique detonation waves in a confined combustion chamber</b> H. Lee; W. Fan; Q. Xiao
3:00 PM-6:00 PM, 150 DE, PP-01. <b>Propulsion and Power Systems of Unmanned Systems</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Lea Chen, ldchen@tamucc.edu, Texas A&M University	
3:00-3:30 PM	<b>AIAA-2016-5109. Energy Management Strategy of Hybrid PEMFC-PV-Battery Propulsion System for Low Altitude UAVs</b> X. Zhang; L. Liu; G. Xu
3:30-4:00 PM	<b>AIAA-2016-5110. Influence and efficiency of energy harvesting on the process of de-orbiting using bare electrodynamic tether system</b> Q. Xia; K. Xie; X. Liu; Z. Wu; N. Wang
4:00-4:30 PM	<b>AIAA-2016-5111. Combustion and Performance Sensitivity to Fuel Cetane Number in an Aviation Diesel Engine</b> M.T. Szedlmayer; C.M. Kweon; K.M. Kruger; J.A. Gibson; R. Armstrong; C.A. Lindsey; R.D. Meininger; N. Jackson; A. Giddings
4:30-5:00 PM	<b>AIAA-2016-5112. The Testing of a Small-Scale Wave Rotor for Use as a Modified Brayton-Cycle Engine</b> M.J. McClearn; M.D. Polanka; K. Lapp; M.R. Mataczynski; F.R. Schauer; D.E. Paxson
5:00-5:30 PM	<b>Oral Presentation. D-DALUS Cyclogyro Exploratory Propulsion System for UAVs</b> D.J. Wills; M. Schwaiger
3:00 PM-6:00 PM, 254 C, SATS-02. <b>Small Satellites II</b> , Technical Paper, <b>52nd AIAA/SAE/ASEE Joint Propulsion Conference</b> , Chair: Jeremy Straub, jastraub@gmail.com, University of North Dakota	
3:00-3:30 PM	<b>AIAA-2016-5113. Application of Technology Readiness Levels to Micro-Propulsion Systems</b> W.A. Hargus; J.T. Singleton

3:30-5:00 PM	<b>Small Satellites Fusion Panel</b>
3:00 PM-6:00 PM, 254 A, SR-06. <b>Solid Propellant Developments</b> , Technical Paper, <b>52nd AIAA/SAE/ASCE Joint Propulsion Conference</b> , Chair: Barbara Leary, barbara.leary@jhuapl.edu, Johns Hopkins University Applied Physics Laboratory; Co-Chair: Charle Rousseau, Werner.Rousseau@rheinmetall-denelmunition.com, Denel (Pty) Ltd.	
3:00-3:30 PM	<b>AIAA-2016-5114. Effect of Particle Size on Microwave Seeded Plasma Enhancement of Composite Propellant Combustion</b> S.J. Barkley; K. Zhu; M. Ballestero; J. Michael; T.R. Sippel
3:30-4:00 PM	<b>AIAA-2016-5115. Laboratory-Scale Burning of Composite Solid Propellant Using <i>In-Situ</i> Synthesized Iron Oxide</b> A.R. Demko; C.A. Dillier; G.R. Morrow; T. Sammet; K. Grossman; S. Seal; E.L. Petersen
4:00-4:30 PM	<b>AIAA-2016-5116. Stability of filler-binder interface under hygrothermal aging</b> C.A. Pereira; L.S. Madureira; J.Z. Schpector; L.D. Villar
4:30-5:00 PM	<b>AIAA-2016-5117. Combustion Characteristics in the Secondary Combustor of Ducted Rockets -Effects of the Changing Distance Rate of B Particles-</b> K. Shirotori; T. Kuwahara
5:00-5:30 PM	<b>AIAA-2016-5118. Comparison of Solid Propellant Burning Rate Determination Methods from Industrial Point of View</b> Ö. Atak; B. Ziraman; M. Yumusak
5:30-6:00 PM	<b>AIAA-2016-5119. Study on the Thermal Decomposition Characteristics of AP/HTPB Composite Propellant under High Heat Flux</b> X. Lyu; X. Liu; X. Pang; P. Wang
3:00 PM-4:30 PM, 151 G, TM-06. <b>Nano-Technology for Thermal Management (Panel)</b> , Panel, <b>14th International Energy Conversion Engineering Conference (non-paper sessions)</b> , Chair: Michael Choi, Michael.K.Choi@nasa.gov, NASA-Goddard Space Flight Center	
3:00 PM-6:00 PM, 151 G, TM-07. <b>Heat Transfer and Transport Modeling and Analysis III</b> , Technical Paper, <b>14th International Energy Conversion Engineering Conference</b> , Co-Chair: Emmanuel Ogedengbe, ogedengbe@energhx.com, ENERGHX Consulting/University of Lagos	
3:00-4:30 PM	<b>No Presentation</b>
4:30-5:00 PM	<b>AIAA-2016-5120. Outdoor Air Conditioning: Case Study of Open Football Stadium</b> M.E. Ashmawy; E.E. Khalil
5:00-5:30 PM	<b>AIAA-2016-5121. Sensitivity Analysis of Upwinding Schemes for Three Dimensional Advection-Diffusion Transport Using Control-Volume Based Finite Element Method</b> K.L. Olaitan; E.O. Ogedengbe
5:30-6:00 PM	<b>AIAA-2016-5122. Air Flow Regimes in Air-Conditioned Spectators' Zone of Qatar Stadium</b> E.E. Khalil; M. Ashmawy; W. Abdelsameea