Event Preview
www.aiaa.org/jpc2013
www.iecec.org
#aiaaPropEnergy
CONFERENCE OVERVIEW

In July 2013, two exciting conferences – the 49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference (JPC) and the 11th International Energy Conversion Engineering Conference (IECEC) – will co-locate to provide one major conference and exposition for the aerospace propulsion and energy conversion communities.

These conferences will provide a forum for the exchange of information on a larger scale than possible at separate events. The combined event will feature both programmatic and technical information while fostering a beneficial networking environment.

Dates to Remember

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<th>Event</th>
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<td>Hotel Room Block Date</td>
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<td>Final Manuscript Deadline</td>
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WHY SHOULD YOU ATTEND?

No matter where you go at the conference, there is always something happening – plenary sessions addressing critical topics on the future of the propulsion and energy industries; technical paper presentations on current state-of-the-art technologies; panel sessions that foster discussion and debate among stakeholders; keynote lectures by renowned speakers addressing relevant topics; special presentations on the exposition hall stage; a young professional reception or a unique off-site social activity – all of which provide an informational way to interact with industry colleagues and meet new contacts and potential customers.

Nowhere else will you get the depth and breadth of sessions on propulsion and energy conversion found at the AIAA conferences in San Jose, California.

EXPAND YOUR KNOWLEDGE, as expert engineers and scientists share their latest research and development findings.

FIND OUT WHAT LIES AHEAD, as senior leaders in industry discuss their programs and business challenges during the plenary and interactive panel sessions.

NETWORK, DISCUSS CHALLENGES, AND SHARE IDEAS during technical sessions, luncheons, networking breaks, and social activities.

Connect with AIAA

Follow @aiaa on Twitter: www.twitter.com/aiaa

Tweeting during the JPC/IECEC Conference use aiaaPropEnergy

Follow conference updates on our Facebook page: www.facebook.com/AIAAfan

Members gain access to the AIAA LinkedIn Site: www.linkedin.com/companies/aiaa
PROGRAM AT A GLANCE

SUNDAY,
14 JULY 2013

0700 hrs
Networking Coffee and Pastries in the Exposition Hall

0730 hrs

0800 hrs
Introduction and Keynote Speaker
“Perspectives on Propulsion Policy, Strategy, Budgets, and Activities for Civil, Commercial and National Security Space”
Dr. John Olson, Assistant Director for Space & Aeronautics,
White House Office of Science and Technology Policy

0830 hrs
Networking Coffee Break

0900 hrs
0930 hrs
Speakers’ Briefing in Session Rooms

1000 hrs

1030 hrs

1100 hrs

1130 hrs

1200 hrs
Luncheon Reception (tickets required)

1230 hrs

1300 hrs

1330 hrs

1400 hrs

1430 hrs

1500 hrs
Registration Opens

1530 hrs
Networking Break and Speakers’ Briefing in Session Rooms

1600 hrs

1630 hrs

1700 hrs

1730 hrs

1800 hrs
Welcome Reception (tickets required)

1830 hrs
Off-Site Reception Event
Tech Museum of Innovation (tickets required)

1900 hrs

1930 hrs

2000 hrs

2030 hrs

2100 hrs

MONDAY,
15 JULY 2013

0700 hrs
Exposition Hall Open

0800 hrs
Exposition Hall Open

0900 hrs

1000 hrs

1030 hrs

1100 hrs

1130 hrs

1200 hrs

1230 hrs

1300 hrs

1330 hrs

1400 hrs

1430 hrs

1500 hrs

1530 hrs

1600 hrs

1630 hrs

1700 hrs

1730 hrs

1800 hrs

1830 hrs

1900 hrs

1930 hrs

2000 hrs

2030 hrs

2100 hrs


Premier Sponsor

Pratt & Whitney
A United Technologies Company

Pratt & Whitney Rocketdyne
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<th>Time</th>
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<th>Friday, 19 July 2013</th>
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<td>IECCE Technical Sessions (4 papers) and IECCE Panel</td>
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<td>JPC Panel “High Seed Propulsion Development &amp; Implementation” and “Public-Private Partnerships to Accelerate Technology Transition”</td>
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**Program at a Glance**

- **Attendee Bag Sponsor**: Dynetics
- **Lanyard Sponsor**: SpaceX
- **Supporting Sponsor**: MOOG

[Return to website](www.aiaa.org/jpc2013) | [Return to website](www.iecec.org)
KEYNOTE SESSIONS AND PANELS

Perspectives on Propulsion Policy, Strategy, Budgets, and Activities for Civil, Commercial, and National Security Space
Monday, 15 July 2013
Speaker: John Olson, Assistant Director for Space and Aeronautics, White House Office of Science and Technology Policy

Evolution of Commercial Space and Future Opportunities
Monday, 15 July 2013
Commercial space is a rapidly growing sector of the space economy. This panel will present the status of current commercial space efforts and challenges, with a look forward to new and evolving opportunities.
Moderator: James Halsell, Technical Director, Aerospace Systems, Dynetics
Panelists: Kent Rominger, Vice President and Program Manager, ATK
Bob Richards, Vice President, Human Spaceflight Systems’ Advanced Programs Group, Orbital Sciences
Ron Ramos, Vice President, Exploration and Missile Defense Systems, Pratt & Whitney Rocketdyne

DOD EELV Space Panel
Monday, 15 July 2013
Panelists: Steven Bouley, Vice President, Expendable Launch Systems, Pratt & Whitney Rocketdyne
Andrew Jackson, Manager, Atlas & Delta Structures, ATK

NASA SLS Development
Monday, 15 July 2013
NASA’s Space Launch System (SLS) is America’s new exploration-class launch vehicle for missions beyond Earth’s orbit – taking astronauts where no one has been before, as well as offering unmatched mass and volume capabilities for science missions. The SLS Program is making maximum use of existing RS-25 core stage engines and advanced developmental hardware in the form of the five-segment solid rocket booster and the J-2X upper stage engine, with a clear plan for beginning flight operations in 2017. SLS chief engineers will share plans and progress, as well as program innovations, such as modifying the Delta IV kick stage to propel the Orion crew craft to trans-lunar injection. Government and industry partners will discuss how the team is solving development challenges and is on track to deliver a safe, affordable, and sustainable infrastructure asset to support America’s space agenda.
Moderator: Garry Lyles, Space Launch System (SLS) Chief Engineer, NASA Marshall Space Flight Center (MSFC)
Panelists: David Wood, SLS Boosters Element Chief Engineer, NASA MSFC
Brian Simmons, SLS Boosters Chief Engineer, ATK
Katherine Van Hooser, SLS Engines Element Chief Engineer, NASA MSFC
Doug Bradley, RS-25 Chief Engineer, Pratt & Whitney Rocketdyne
Rene Ortega, SLS Spacecraft & Payload Integration Chief Engineer, NASA MSFC
Frank McColl, SLS Deputy Program Manager and Chief Engineer, The Boeing Company

Legacy RLV Systems – DC-X
Monday, 15 July 2013
The DC-X, or Delta Clipper Experimental, was an unmanned prototype of a reusable single stage to orbit launch vehicle built by McDonnell Douglas for the U.S. Strategic Defense Initiative Organization (SDIO) in the early 1990s. Later, the system was transferred to NASA and upgraded with advanced operations, structures, and propulsion technology and was renamed the DC-XA. The DC-X was never designed to achieve orbital altitudes or velocity, but instead to demonstrate the concept of vertical takeoff and landing using a revolutionary aircraft-like operations approach. This session will discuss the lessons learned from the DC-X program, and their applicability to future space transportation systems.
Moderator: Jess Sponable, Program Manager, DARPA
Panelists: Peter Worden, Director, Ames Research Center, NASA
William Gaubatz, Former DC-X Program Manager, McDonnell Douglas
Joaquin Castro, Business Development, Pratt & Whitney Rocketdyne
Stephen Cook, Director of Space Technologies, Dynetics

Propulsion and Power Systems for the Future
Tuesday, 16 July 2013
Keynote Address: Ric Parker, Director of Research and Technology, Rolls-Royce plc
Emerging Technologies for the Next Generation of Aircraft Systems  
Tuesday, 16 July 2013  
The panel will discuss government and industry perspective on emerging aircraft systems technologies for the next generation.  
**Moderator:** Fayette Collier, Project Manager, Environmentally Responsible Aviation, NASA Langley Research Center  
**Panelists:**  
Rhett Jeffries (invited), CLEEN Program Manager, Federal Aviation Administration  
Wes Lord (invited), Pratt & Whitney  
Jason Parsons (invited), HEEET Program Manager, USAF AFRL/RQT  
Kenneth Martin, Manager, Conceptual Design, Lockheed Martin

Defense S&T Perspective and Priorities: Future Look into High Speed Propulsion  
Wednesday, 17 July 2013  
**Keynote Speaker:** Al Shafer (invited), Department of Defense

High Speed Propulsion Development and Implementation  
Wednesday, 17 July 2013  
**Moderator:** James Kenyon, Department of Defense  
**Panelists:**  
Tom Fetterhoff, Technical Director, Test Division, Arnold Engineering Development Center  
James Pittman, Manager, Hypersonics Project, Fundamentals Aeronautics Program, NASA Langley Research Center  
Lynn Snyder, Manager, Advanced Concepts, Rolls-Royce Liberty Works  
Scott Cruzen, Manager, Technology Projects, Williams International  
Curtis Berger, Director, Hypersonic Programs, Pratt & Whitney Rocketdyne  
Steve Beckel, Director, Advanced Propulsion Business Development, ATK

Disruptive Aircraft & Propulsion Technologies for the Future  
Tuesday, 16 July 2013  
The panel will discuss government and industry perspective on disruptive technologies that will yield alternative propulsion cycles in the not-too-distant future.  
**Moderator:** Nateri Madavan, Deputy Project Scientist, Fixed Wing Project, NASA Ames Research Center  
**Panelists:**  
Marty Bradley, Technical Fellow, The Boeing Company Research & Technology  
Dale Carlson, General Manager, Technology Strategy, GE Aviation  
Ryan Plumley, Program Manager, Revolutionary Configurations for Energy Efficiency, Air Force Research Laboratory  
Louis Povinelli, High Speed Project Scientist, NASA John H. Glenn Research Center

Public-Private Partnerships to Accelerate Technology Transition  
Wednesday, 17 July 2013  
**Moderator:** Graham Warwick (invited), Senior Editor – Technology, Aviation Week  
**Panelists:**  
Alton Romig (invited), Vice President and General Manager, Skunk Works, Lockheed Martin Corporation  
Dale Carlson (invited), General Manager, Technology Strategy, GE Aviation  
Alan Epstein (invited), Pratt & Whitney

Hypersonic Flight Test Accomplishments and Challenges  
Wednesday, 17 July 2013  
**Moderator:** Mark Lewis, Director, Institute of Defense Analyses Science and Technology Policy Institute  
**Panelists:**  
Charles Brink, X-51 PM  
Douglas Dalvin, HiFIRE PM
## CONFERENCE FEES

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<th>18 June–12 July 2013</th>
<th>Conference Sessions</th>
<th>Welcome Reception</th>
<th>Exhibit Luncheon</th>
<th>IECEC Awards Luncheon</th>
<th>JPC Awards Luncheon</th>
<th>Mon Evening Off-Site</th>
<th>NASA Ames Tour</th>
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| Extra Tickets                           | $200            | $65                  | $55                 | $52              | $25             | $15                  | $13                 | $58                 |

Pricing subject to change.

*10% discount off AIAA early–bird member rate for 10 or more persons from the same organization who register and pay at the same time with a single form of payment.

[www.aiaa.org/jpc2013](http://www.aiaa.org/jpc2013) [www.ieece.org](http://www.ieece.org)
SPECIAL PROGRAM ACTIVITIES

As part of the JPC and IECEC Conference, other activities are planned to provide specific attendees valuable knowledge, experience, and interaction.

Welcome Reception
A welcome reception will be held on Sunday, 14 July 2013, 1800–1930 hrs, in the Exposition Hall at the San Jose Convention Center. Take this opportunity to engage new contacts and refresh old ones. A ticket for the reception is required and included in the conference registration fee where indicated. Additional tickets for guests may be purchased upon registration or on site.

Tech Museum of Innovation
Monday, 15 July
1830–2100 hrs
$25
Join Lockheed Martin Corporation at the Tech Museum of Innovation. Conveniently located across from the San Jose Convention Center, it is a very short walk away. There will be displays to view and reception style food and cocktails to enjoy. Tickets are $25 and may be purchased on a first-come, first-served basis.

Networking Luncheon
Join us in the Exposition Hall on Monday, 15 July 2013 for a networking lunch. A ticket for the luncheon is required and included in the conference registration fee where indicated. Additional tickets may be purchased upon registration or on site as space is available.

Recognition Activities and Lectureships
Recognizing the best in our profession for their outstanding achievement is one of the primary goals of AIAA. The JPC and IECEC Conferences feature a number of activities that help us honor achievements and contributions to the profession.

NETWORKING ACTIVITIES
Understanding the importance of networking with colleagues new and old, we have planned a series of activities during the conference that will help you connect with current colleagues and new acquaintances.

New This Year! Early Morning Networking Break
Join us in exposition hall each morning from 0700 to 0800 hrs for coffee and pastries, and great discussions. This event is open to all registered conference attendees.

Networking Coffee Breaks
Stand-alone networking coffee breaks are included in the program to allow even more time for making new contacts, continuing discussions from technical sessions, visiting with the exhibitors, or checking emails and voicemails to keep in touch with the office while you are at the conference. Networking coffee breaks will be located in the Exposition Hall.

NEW THIS YEAR U.S.-Only
ITAR Technical Sessions
New for this year, a limited number of papers will be presented in “U.S.-Only” technical sessions. In addition to your JPC/IECEC conference registration, a separate registration process will be required to attend these restricted sessions. Please see the detailed information on the ITAR Registration Grid to determine your individual requirements.

Availability of ITAR Papers
A DVD containing the manuscripts from the ITAR sessions will be available for purchase on site in San Jose by those who are registered to attend the ITAR Sessions. There will be no sale of these papers after the event.
TOURS

TECHNICAL TOURS

Tour of NASA Ames

Tuesday, 16 July 2013
1215–1730 hrs
$15 per person

Bus transportation to and from the San Jose Convention Center will be provided. All guests should be in the foyer and ready to board the bus at 1200 noon, 15 minutes before the tour is scheduled to depart. Cancellations are not accepted or monies refunded after 28 June.

Tour the NASA Ames Research Center (ARC), one of 10 NASA field centers, which is located in the heart of California’s Silicon Valley. ARC provides NASA with advancements in entry, descent and landing technologies, information technology, next-generation aviation improvements, astrobiology, airborne sciences and small satellite programs. (http://www.nasa.gov/centers/ames/home/index.html)

The tour will include 4 complexes. One is the world’s largest wind tunnel, which is capable of testing aircraft as large as the Boeing 737. (http://www.nasa.gov/centers/ames/multimedia/images/2005/nfac.html)

Another is the Unitary Plan Wind Tunnel (UPWT), where researchers have tested generations of commercial and military aircraft and NASA space vehicles. (http://www.nasa.gov/centers/ames/organizations/aeronautics/windtunnels/index.html)

The third area is the Arc Jet Complex, which provides ground-based hyperthermal environments to develop Thermal Protection Materials, Vehicle Structures, Aerothermodynamics, and Hypersonics. (http://thermo-physics.arc.nasa.gov/fact_sheets/ArcJetFactSheet.pdf)

The final area is the Future Flight Central, which is a national Air Traffic Control/Air Traffic Management (ATC/ATM) simulation facility dedicated to solving the present and emerging capacity problems of the nation’s airports. (http://www.aviationsystemsdivision.arc.nasa.gov/facilities/ffc/index.shtml)

Tour participants should wear comfortable shoes since the tours will require walking and stair climbing. High-heeled shoes are not allowed in some of the touring areas.

Participants must be US citizens and will need to present a driver’s license or other form of identification with a picture ID. Tour available on a first come, first-served basis. Limit 50.

Lockheed Martin

Wednesday, 17 July 2013
1400–1700 hrs
$15 per person

Lockheed Martin will offer an unclassified (U) guided tour of an inert (non-energetic) Trident II missile, which is offered, includes an up - close look at the D5 missile, disassembled to the motor assembly and equipment section level. Detailed descriptions of unclassified missile component functions and hardware specifications will be conducted as part of the tour, as well as descriptions of the missile tube mockups located in the same facility, used for training and on - shore touch procedure development. A short video describes the Trident II missile launch preparation, boost and ballistic coast sequence, and weapon deployment of a tactical launch scenario. Many other hardware displays and models are available for close-up encounters. Since the missile is inert, visitors may touch the hardware.

US Export Controlled - IAR restricted information, US citizens only.

ACCOMPANYING PERSONS TOURS

Monterey Highlights

Tuesday, 16 July 2013
0900–1700 hrs
$113 per person

Explore the Monterey Peninsula, led by an expert guide. Travel the 17-mile drive through Del Monte Forest, past famous golf courses along the rocky Pacific shoreline and Cannery Row and Fisherman’s Wharf in Monterey. The tour includes time to stroll the streets of Carmel as well as a hosted lunch at Casanova’s, where food and service is reminiscent of small inns of France and Italy. The final stop before returning to Monterey will include admission to the Monterey Bay Aquarium.

San Francisco Highlights

Wednesday, 17 July 2013
0900–1300 hrs
$58 per person

Register today!

Before 12 June. Should a tour cancel based on registered attendance on or after 12 June. Tours will be available based on registered attendance on or before 12 June. Should a tour cancel based on minimal interest, monies will be returned. Register today!

Register today!
CONFERENCE INFORMATION

AIAA Registration and Information Center Hours

The AIAA Registration and Information Center will be located in the Exhibit Hall Foyer at the San Jose Convention Center. Hours are as follows:

- Sunday, 14 July: 1500–1900 hrs
- Monday, 15 July: 0700–1800 hrs
- Tuesday, 16 July: 0700–1800 hrs
- Wednesday, 17 July: 0700–1700 hrs

Registration for ITAR sessions will only be accepted on site, during the following hours:

- Monday, 15 July: 0900–1800 hrs
- Tuesday, 16 July: 0700–1800 hrs
- Wednesday, 17 July: 0700–1700 hrs

Certificate of Attendance

Certificates of Attendance are available for attendees who request documentation at the conference itself. Please request your copy at the on-site registration desk. AIAA offers this service to better serve the needs of the professional community. Claims of hours or applicability toward professional education requirements are the responsibility of the participant.

Online Proceedings

Proceedings for this conference will be available in online format. The cost is included in the registration fee where indicated. The online proceedings will be available on 15 July 2013.

Conference Sponsorship Opportunities

When your brand is on the line, AIAA sponsorship can raise the profile of your company and put you where you need to be. Available packages offer elevated visibility, effective marketing and branding options, and direct access to prominent decision makers from the aerospace community. Contact Merrie Scott at merries@aiaa.org or 703.264-7530 for more details.

International Traffic in Arms Regulations (ITAR)

AIAA speakers and attendees are reminded that some topics discussed in the conference could be controlled by the International Traffic in Arms Regulations (ITAR). U.S. nationals (U.S. citizens and permanent residents) are responsible for ensuring that technical data they display in open sessions to non-U.S. nationals in attendance or in conference proceedings are not export restricted by the ITAR. U.S. nationals are likewise responsible for ensuring that they do not discuss ITAR export-restricted information with non-U.S. nationals in attendance.

Membership Information

Professionals registering at the nonmember rate will receive a one-year AIAA membership. Students who are not members may apply their registration fee forward their first year’s student member dues. Membership is not included in registrations at the discounted group rate.

Young Professional Guide for Gaining Management Support

Young professionals have the unique opportunity to meet and learn from some of the most important people in the business by attending conferences and participating in AIAA activities. A detailed online guide, published by the AIAA Young Professional Committee, is available to help you gain support and financial backing from your company. The guide explains the benefits of participation, offers recommendations and provides an example letter for seeking management support and funding, and shows you how to get the most out of your participation. The online guide can be found on the AIAA website at www.aiaa.org/YPGuide.
The exposition hall will host the Welcome Reception on Sunday night and remain open through Wednesday. Companies will be displaying an array of technology. The Exposition is the place to network and conduct business for all attendees, as well as attend presentations featured on the Presentation Stage.

For more information about exhibiting at AIAA events, please contact:

Chris Grady
AIAA Exhibits Business Manager
703.264.7509
chrisg@aiaa.org

Current Exhibitors Include:

- Pratt & Whitney
  A United Technologies Company
  Pratt & Whitney Rocketdyne
- dSPACE
- ATK
- EK
  EAGLE INDUSTRY CO., LTD.
- SNC
  SIERRA NEVADA CORPORATION
  Space Systems
- Spincraft
- AEROJET
  70 YEARS
- BETA
- GE
  Imagination at work
- GENERAL DYNAMICS
  Armament and Technical Products
- VACCO Industries
- BOEING
- MOOG
- CAMBRIDGE FLOW SOLUTIONS
- NTS
  ENGINEERING SUCCESS
- COBHAM
- POINTWISE®
- VALCOR
- Wyle
TRAVEL AND ACCOMMODATIONS

AIAA has made arrangements for a block of rooms at these hotels:

**Hilton San Jose**
300 South Almaden Boulevard
San Jose, CA 95113
408.287.2100
Room rates are $179 for a standard room (single or double occupancy). Applicable taxes will apply. Book your rooms early! These rooms are available at $179 for AIAA until 24 June 2013 or until the room block is full, then released for use by the general public. There are a limited number of rooms available at the prevailing government per-diem rate. Proper government ID is required.

**San Jose Marriott Downtown**
301 South Market Street
San Jose, CA 95113
408.280.1300
Room rates are $189 for a standard room (single or double occupancy). Applicable taxes will apply. Book your rooms early! These rooms are available at $189 for AIAA until 20 June 2013 or until the room block is full, then released for use by the general public. There are a limited number of rooms available at the prevailing government per-diem rate. Proper government ID is required.

**Sainte Claire**
302 South Market Street
San Jose, CA 95113
408.295.2000
There are a limited number of rooms available at the prevailing government per-diem rate. Proper government ID is required.

**About San Jose**
San Jose, known as the “Capital of Silicon Valley,” is the largest city in Northern California, the tenth-largest in the U.S., and the county seat of Santa Clara County, at the southern end of San Francisco Bay. San Jose has a Mediterranean climate, and averages more than 300 days of sunshine annually; average July temperatures range from a high of 84º F (29º C) to a low of 63º F (17º C). Among the civic and architectural highlights of San Jose’s downtown are the HP Pavilion (home of the NHL’s San Jose Sharks), the Tech Museum of Innovation, Children's Discovery Museum, the San Jose Museum of Art, San Jose Center for the Performing Arts, and San Jose Repertory Theater. Visit sanjose.org for more details.

**Help Keep Our Expenses Down (and yours too)!**
AIAA group rates for hotel accommodations are negotiated as part of an overall contract that also includes meeting rooms and other conference needs. Our total event costs are based in part on meeting or exceeding our guaranteed minimum of group-rate hotel rooms booked by conference participants. If we fall short, our other event costs go up. Please help us keep the costs of presenting this conference as low as possible — reserve your room at one of the designated hotels listed in this Event Preview and on our website, and be sure to mention that you’re with the AIAA conference. Meeting our guaranteed minimum helps us hold the line on costs, and that helps us keep registration fees as low as possible. All of us at AIAA thank you for your help!
CONTINUING EDUCATION

Let AIAA Continuing Education courses pave the way to your continuing and future success! As the premier association representing aeronautics and astronautics professionals, AIAA has been a conduit for continuing education for more than sixty years. AIAA offers the best instructors and courses, and is committed to keeping aerospace professionals at their technical best. Register for any course and attend the Conference for FREE! (Registration fee includes full conference participation: admittance to technical and plenary sessions, receptions, luncheons, and online proceedings.)

Liquid Propulsion Systems – Evolutions and Advancements
Alan Frankel, Ivett Leyva, and Patrick Alliot
Thursday–Friday, 18–19 July, 0815–1700 hrs
Liquid propulsion systems are critical to launch vehicle and spacecraft performance and to mission success. This two-day course, taught by a team of government, industry, and international experts, will cover propulsion fundamentals and topics of interest in launch vehicle and spacecraft propulsion; non-toxic propulsion; microsat and cubesat propulsion; propulsion system design and performance; and human rating of liquid engines.

A Practical Introduction to Preliminary Design of Air-Breathing Engine
Ian Halliwell and Steve Beckel
Thursday–Friday, 18–19 July, 0815–1700 hrs
The objective of the course is to present an overview of the preliminary design of air-breathing engine systems that is determined primarily by the aircraft mission, which defines the engine cycle – and different types of cycles are investigated. Preliminary design activities are defined and discussed in the context of the overall engine development process and placed in perspective. Some basic knowledge of aerodynamics and thermodynamics is assumed so the mathematical material that appears in many good text books is minimized and the question “What do you actually do as an engine designer?” is addressed. The practical means and processes by which thermodynamic concepts are turned into hardware are covered and some design techniques are demonstrated. Finally, the fact that an air-breathing engine is much more than the flowpath component is discussed and the future of engine design methods is raised.

Missile Propulsion Design and System Engineering
Eugene L. Fleeman
Thursday–Friday, 18–19 July, 0815–1700 hrs
A system-level, integrated method is provided for the missile propulsion system design, development, analysis, and system engineering activities in addressing requirements such as cost, performance, risk, and launch platform integration. The methods presented are generally simple closed-form analytical expressions that are physics-based, to provide insight into the primary driving parameters. Sizing examples are presented for rocket-powered, ramjet-powered, and turbo-jet powered baseline missiles. Typical values of missile propulsion parameters and the characteristics of current operational missiles are discussed as well as the enabling subsystems and technologies for missile propulsion and the current/projected state of the art. Videos illustrate missile propulsion development activities and performance.
ITAR RESTRICTED SESSIONS


Carefully review the AIAA ITAR Abstract Registration Policies below. AIAA has also provided additional ITAR-related documentation:

**Access to ITAR Sessions: Presenting a Paper, Chairing a Session, or Attending an ITAR-Restricted Presentation**

Admittance to the restricted Technical Papers is controlled by the U.S. International Traffic in Arms Regulations (ITAR). All paper attendees, presenters, and session chairs will need to register for the conference, and then while on site will need to visit the ITAR Registration Desk to complete additional registration procedures. Anyone wishing to enter the restricted session room MUST abide by the procedures and submittal of verification documents mandated by the DOD in order to attend, present, or chair ITAR-restricted sessions. No Exceptions!

**ITAR Credentials:**

1. You must show proof of U.S. citizenship (the most overlooked item); a photocopy of your passport is NOT acceptable, and Government ID is NOT sufficient proof for citizenship.
2. Present personal photo identification.
3. You must be a federal government employee or you must be covered under a company or individual DD2345 certification.

**U.S.-Only ITAR Technical Sessions**

New for this year, a limited number of papers will be presented in “U.S.-Only” technical sessions. In addition to your JPC/IECEC conference registration, a separate registration process will be required to attend these restricted sessions. Please see the detailed information on the ITAR Registration Grid to determine your individual requirements.

**Availability of ITAR Papers:**

A DVD containing the manuscripts from the ITAR sessions will be available for purchase on site in San Jose by those who are registered to attend the ITAR Sessions. There will be no sale of these papers after the event.
Important session information for all attendees wishing to present at or attend ITAR-restricted sessions

AIAA Restricted Papers – ITAR-Restricted Regulations Session Admittance Policy
(Revised 10/19/2012)

Several papers scheduled to be presented at this conference will be restricted papers governed by ITAR (the U.S. International Traffic in Arms Regulations). If you plan to attend any presentations restricted by ITAR, you must bring proof of citizenship PLUS the other verification documents as shown below. Please note that only U.S. Citizens and U.S. Resident Aliens can be considered for attendance at these restricted presentations. Admission to restricted sessions and access to restricted technical papers is implemented and controlled by ITAR. All restricted session attendees (including speakers and session chairs for these sessions) MUST abide by the procedures and submittal of verification documents as noted below – NO EXCEPTIONS:

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<th>ATTENDEE CLASSIFICATION</th>
<th>IDENTIFICATION and PROOF OF EMPLOYMENT REQUIREMENTS</th>
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| U.S. Government Employees | 1. Proof of U.S. Citizenship (for example, passport, birth certificate, voters registration card, naturalization papers), **AND**
2. Personal photographic identification: U.S. Government/Military Photo ID badge, such as CAC card |
| U.S. Citizens | 1. Proof of U.S. Citizenship (for example, passport, birth certificate, voters registration card, naturalization papers), **AND**
2. Personal photographic identification (passport, driver’s license, etc.), **AND**
3. Certification credentials based on DD Form 2345 (see below for details) |
| Resident Aliens (U.S.) | 1. Resident Alien Card, **AND**
2. Personal photographic identification (passport, driver’s license, etc.), **AND**
3. Certification credentials based on DD Form 2345 (see below for details) |

**DD Form 2345 individual certification credentials (required for U.S. and Resident Aliens) MUST be from one of the following:**

1. Copy of an approved and active DD2345 for the individual, **OR**
2. Copy of an approved and active DD2345 for the individual’s employer **PLUS** evidence of current employment status with that employer (corporate ID, business card, etc.), **OR**
3. A listing of the individual’s employer in the most recent DoD quarterly Qualified U.S. Contractor List **PLUS** evidence of current employment status with that employer (corporate ID, business card, etc.).

**DD Form 2345 may be downloaded and completed online in order to apply for approval to be listed on the Qualified U.S. Contractor List, [www.dlis.dla.mil/jcp](http://www.dlis.dla.mil/jcp).** Allow at least 4–6 weeks (or longer) **PRIOR** to the AIAA technical conference dates for you to receive the approval and be listed on the Qualified U.S. Contractor List.

**How to get your ITAR Clearance:**

Bring all of the above listed identification, proof of employment and certification credentials to the AIAA ITAR Registration Desk in the AIAA Registration area. Your documents will be verified and you will be provided with a stamp indicating your ITAR clearance. Photo ID will be checked against your ITAR badge before admittance is granted to any ITAR presentation.

**Please be advised that all policies and procedures MUST be followed or admittance to restricted sessions will not be permitted.**
Register on Our Website: www.aiaa.org/jpc2013
Select “Register Now” to access the secure online registration form. Use credit card only. Follow the steps for registration.

For AIAA use only
Rec’d by _____________________
Date Processed ______________________

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Please note that photographs and video taken by or on behalf of AIAA of event activities and attendees shall be the property of AIAA. By registering for this event, you consent to the use by AIAA of any photograph or video in which you appear, including for promotional purposes, in print, digital, or other format, without notice or compensation to you.