



—Advanced Space Propulsion Workshop—

20th NASA Advanced Space Propulsion Workshop

The National Aeronautics and Space Administration's (NASA) Jet Propulsion Laboratory (JPL) and John H. Glenn Research Center (GRC) at Lewis Field are pleased to host the 20th Advanced Space Propulsion Workshop (ASPW) on November 17-20, 2014 at the Ohio Aerospace Institute (OAI), in Cleveland, Ohio.

The emphasis of the ASPW is on low (1-3) Technology Readiness Level (TRL) space propulsion and power concepts and technologies that hold the promise of enabling ambitious robotic and human missions of the 21st century. The primary goals of the workshop are as follows:

- Provide an informal forum for information exchange and program coordination between researchers in low TRL advanced space propulsion.
- Identify major research issues and potential benefits for each long-term enabling technology and the effort (manpower and facilities) needed to develop this technology, as well as the "best guess" as to the prospects of developing this technology.
- Identify both near-term and more far-term technology options, and the challenges associated with their development.

To this end, the workshop could optionally include a discussion/roadmapping exercise at the end of each technology session to assist NASA program managers in the implementation of promising technologies.

Traditionally, participation at the ASPW has been diverse with speakers from NASA, Department of Defense (DoD), Department of Energy (DoE), industry and academia. We look forward to continuing this diversity in 2014. Main sessions and examples of topics typically discussed and/or of interest include:

- I. Plenary Session: Programmatic overviews.
- II. Mission Applications and Architectures: Studies that help define technology requirements.
- III. Advanced Earth-to-Orbit (ETO) Propulsion: Launch-assist catapults (such as MagLev), MHD-augmented chemical, virtual inlets, laser/microwave beamed energy, etc.
- IV. Advanced Chemical Propulsion: High energy density propellants, hybrids, detonation, etc. Extraterrestrial resource utilization such as in situ propellant production.
- V. Propellant-less Propulsion: Tethers, solar/laser/microwave/plasma sails, aero/gravity assist, etc.
- VI. Beamed Energy Propulsion: Solar/laser/microwave thermal propulsion, high-power beamed-energy systems, etc.

- VII. Micro-Propulsion/Micro-Thrust: Systems for microspacecraft and/or high-precision attitude control.
- VIII. Nuclear Propulsion: Fission thermal/electric/hybrid, nuclear isomers, fusion, antimatter.
- IX. Advanced Electric Propulsion: Ion, Hall, Magnetoplasmadynamic, others.
- X. Modeling & Simulation of Advanced Space Propulsion: Modeling of fundamental physics pertinent to advanced propulsion (such as plasma confinement and detachment in magnetic nozzles, field reversed configuration physics, etc.). Performance and life assessments using numerical simulation.
- XI. Propulsion Component Improvements: Advanced materials, light-weight magnets, advanced radiators, etc.

As in prior years, the workshop "papers" will consist of presentation slides only, thus a dedicated paper is not required. However electronic copies of the abstract and presentation charts are required for inclusion in the workshop proceedings. **One-page** abstracts of proposed presentations should be submitted for consideration by the ASPW Technical Committee by **October 6th 2014** (please see "ASPW 2014 Abstract" below for more information).

Other pertinent information regarding the workshop is provided at our publicly accessible website <http://aspw.jpl.nasa.gov/>. We will continue to update the website as more information becomes available.

ASPW 2014 Technical Committee

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ASPW 2014 Abstract

The preferred way for abstract submission is through the ASPW 2014 website (<http://aspw.jpl.nasa.gov/papers>). Alternatively, submissions can also be e-mailed directly to Ioannis.G.Mikellides@jpl.nasa.gov and carbon-copied (cc) to JamesGilland@oai.org. **The deadline for abstract submission is October 6th 2014.**

Title (bold, 14 pt Times New Roman font)

Author(s) (This and all other text 12 pt Times New Roman font)

Institution(s)

Address (Mail Stop, Street, City, State Zip/Country)

Phone and FAX

E-Mail

Abstract text (Full justified preferred). Please limit your abstract to one page with 1" margins. Times New Roman font preferred. To ensure cross-platform compatibility, please use Symbol font as needed (rather than special control characters). Also, be especially wary of complex equations (e.g., using Equation Editor); it may be safest to use a scanned image of the equation(s) to ensure compatibility. When in doubt, send a PDF file in addition to the MS Word file so we can check that everything looks OK.