

DEFENSE

Systems Digest

The Latest From the Defense Systems Information Analysis Center // February 15, 2022



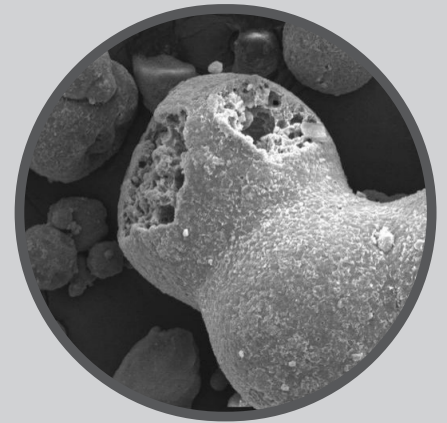
NASA

[SUBMIT A TECHNICAL INQUIRY](#)

NOTABLE TECHNICAL INQUIRY

How can combustion efficiency be estimated for a liquid-fueled ramjet with a given combustor length or bulk flow residence time flying in the Mach 2-3 range?

The Defense Systems Information Analysis Center (DSIAC) was asked how combustion efficiency can be estimated for a liquid-fueled ramjet flying in the Mach 2-3 range with a given combustor length or bulk flow residence time. In particular, DSIAC was asked for some sort of data or an empirical/analytical model that has been validated with data, rather than non-computational fluid dynamics solutions, that can be used to predict how performance of a ramjet combustor could change over a.... [READ MORE](#)



SNEAK PEEK

UPCOMING WEBINAR:
*Advanced Spray-Drying
Technology for the U.S.
Department of Defense (DoD)*

DATE:
February 23, 2022

TIME:
12:00 PM - 12:45 PM

PRESENTED BY:
Steve Rowley

HOST:
DSIAC



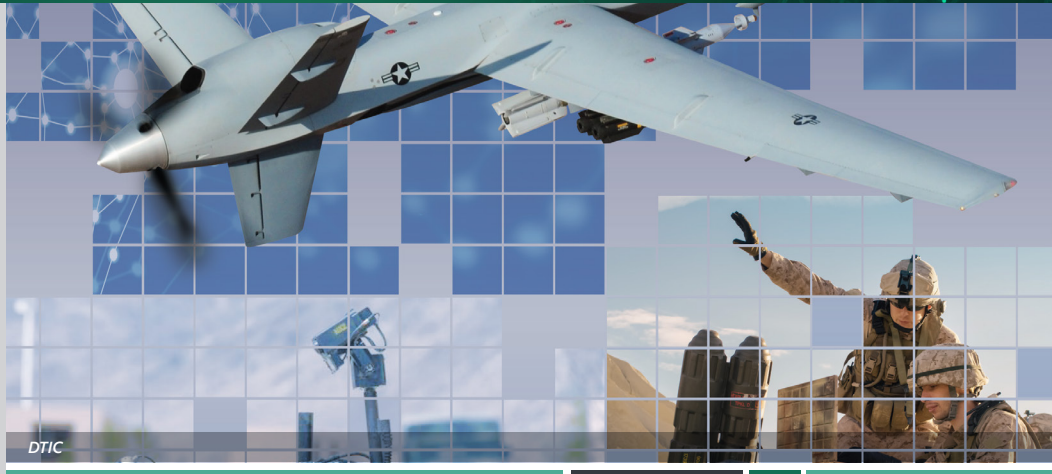
VOICE FROM THE COMMUNITY

Michael J. Patterson

Chairman/Founder Desert Works Propulsion, LLC

Mr. Patterson has 40 years' experience in spacecraft electric propulsion (EP), including 37 years with NASA Glenn Research Center in Cleveland, OH, where he served as Senior Technologist for In-Space Propulsion until retirement in December 2021. During his NASA tenure, he worked to transition EP technologies to commercial and National Security Space missions. In 2022, he founded Desert Works Propulsion LLC to accelerate fielding of high-performance EP in support of U.S. commercial and military missions, providing consulting, design, and manufacturing.

BECOME A SUBJECT MATTER EXPERT



HIGHLIGHT

FY21 State of the IACs

The Defense Technical Information Center (DTIC) has released the State of the Information Analysis Centers (IAC) Report for fiscal year 2021 (FY21).

LEARN MORE

FEATURED NEWS

Simplified Human/Machine Interfaces Top List of Critical DoD Technologies

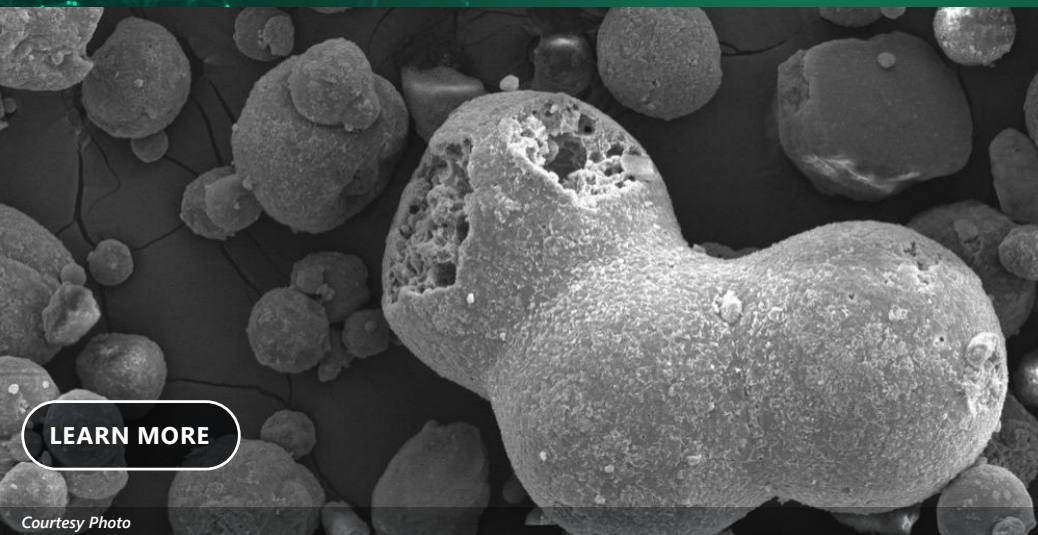
A modern-day cell phone packs quite a wallop when it comes to computing technology and capability. But most cell phones barely come with a "quick start guide," let alone an instruction manual that spells out how to use all the features.



Cell phone companies have mastered the interface between humans and technology, making their use entirely intuitive and rendering thick instruction manuals a thing of the past.

"The same thing should be happening for weapons systems used by service members," said Heidi Shyu, the Undersecretary of Defense for Research and Engineering. During a virtual discussion today with the Potomac Officers Club near Washington, D.C., she said intuitive, easy-to-use human/machine interfaces are something that's a priority for... **READ MORE**

Image: DoD

[LEARN MORE](#)

Courtesy Photo

WEBINARS

Advanced Spray-Drying Technology for the U.S. Department of Defense (DoD)

Presented: February 23, 2022 12:00 PM - 12:45 PM

Presenter: Steve Rowley

Host: DSIAC

In this presentation, we will first discuss basic spray-drying theory with attention to both aqueous and solvent-based systems, principles and techniques of atomization and particle separation, properties of spray-dried particles, types of spray dryers, and the process parameters affecting spray drying. Next, we will discuss how advanced techniques such as particle surface modification and microencapsulation can be used to improve powder flow-ability, produce water-dispersible powders from oil-based substrates, and provide shelf-stable powders containing viable probiotics or viruses. Finally, we will discuss the basic steps that an organization should take to investigate, innovative, develop, up-scale, and commercialize novel powdered products and how spray-drying technology is being used to help the DoD develop modern products such as exploding foil initiator compositions and dual-use secondary high-explosives/rocket propellants with improved insensitivity, power, handling safety, and lot-to-lot consistency. [LEARN MORE](#)

EVENTS

Aircraft Survivability Symposium

February 15-17, 2022

Special Air Warfare Symposium

February 22-24, 2022

Automated ISR and Battle Management

February 23-24, 2022

2022 Tactical Wheeled Conference










February 28-March 2, 2022

AFA Warfare Symposium

March 2-4, 2022

Want your event listed here?

Email contact@dsiac.org, to share your event.

-  Advanced Materials
-  Autonomous Systems
-  C4ISR
-  Directed Energy
-  Energetics
-  Military Sensing
-  Non-Lethal Weapons
-  RMQSI
-  Survivability & Vulnerability
-  Weapons Systems

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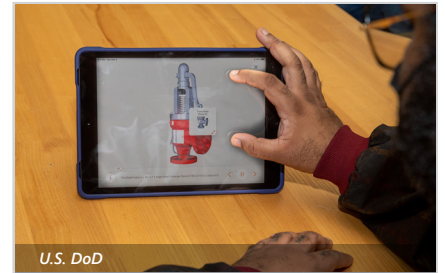
RECENT NEWS



U.S. Marines

**Polymer Ammo:
 A Lightweight Approach
 to Support the Warfighter**

Weapons Systems



U.S. DoD

**Eye on Innovation: Schematics in
 the Palm of Your Hand – NNSY Tests
 BILT App to Bring 3-D Maintenance
 Instructions to the Mechanics**

Advanced Materials;
 RMQSI



U.S. Army

**Mission Complete: Johns
 Hopkins-Led Consortium
 Completes 10-Year Program to
 Advance Armor Materials**

Advanced Materials

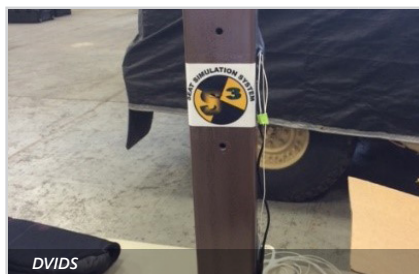


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MACHINE LEARNING

**NSWC Crane, Oregon State
 University, IU Collaborate on
 Machine-Learning Research
 Project**

Autonomous Systems



DVIDS

**Army Inventors Awarded
 Patent for Measuring Vehicle
 Underbody Blasts**

Autonomous Systems



DVIDS

**Defense Research and
 Engineering Explores Joint
 Experimentation**

Non-Lethal Weapons