

Defense Systems

DIGEST

20 NOVEMBER 2018 – THE LATEST FROM DEFENSE SYSTEMS INFORMATION ANALYSIS CENTER



NOTABLE TECHNICAL INQUIRY

How can an existing infrared (IR) marker/crayon technology and production facilities be improved for manufacturability?

DSIAC was asked to assess IR marker/crayon technology in order to improve the product design for manufacturability and production facilities. DSIAC subject matter experts (SMEs) from the Georgia Tech Research Institute (GTRI) produced a statement of work with... [Read More](#)

► **SUBMIT YOUR TECHNICAL INQUIRY – 4 hours of research service for FREE**

FEATURED NEWS



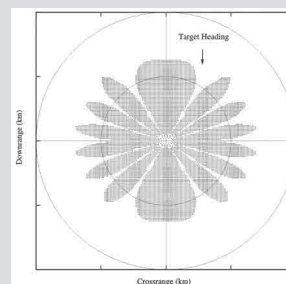
Laser Weapons Show Their Stuff in Real-World Conditions

The 21st Century already has seen more “science fiction” become everyday fact than at any other time in history, from smart phones that make Star Trek’s communicators appear primitive, to the Robonaut — a C3PO-like humanoid robot working on the International Space Station — to perhaps the most iconic of all: laser weapons. Directed-energy weapons (DEWs) have been a staple of future warfare depictions since H.G. Wells published “War of the Worlds,” with its Martian “heat rays,” 120 years ago. Hughes Aircraft engineer and physicist Theodore Harold Maimain generally is credited with inventing the... [Read More](#)

MODEL OF THE MONTH

ALARM – The Advanced Low Altitude Radar Model, or ALARM, is a generic digital computer simulation designed to evaluate the performance of a ground-based radar system attempting to detect low-altitude aircraft. The purpose of ALARM is to provide a radar analyst with a software simulation tool to evaluate the detection performance of a ground-based radar system against the target of interest in a realistic environment.

[Get this model!](#)



VOICE FROM THE COMMUNITY



Allan Hill, Lockheed Martin Missiles & Fire Control (LM MFC), Distinguished Member, Group Technical Staff

I am currently the LM MFC subject matter expert for reliability engineering and supportable low observables as well as the Logistics and Sustainment Engineering Department design assurance expert. I ensure design integrity from a reliability, availability and maintainability (RAM) and logistics perspective for all MFC programs, help resolve technical issues, and am currently developing knowledge continuity training for reliability engineers. One of the things I enjoy most is collaborating with our various programs to solve problems and advance the state-of-the-art in reliability engineering.

► Apply to be part of our network of over 1,000 subject matter experts.

UPCOMING EVENTS

Defense Maintenance and Logistics Exhibition

17 December 2018 to 19 December 2018

29th AAS/AIAA Space Flight Mechanics Meeting

13 January 2019 to 17 January 2019

Joint Conference on T&E Support to Prototyping and Experimentation

15 January 2019 to 17 January 2019

2019 Military Aviation Systems Summit

16 January 2019 to 17 January 2019

► Want your event listed here? Let us know!

BULLETIN BOARD

The Advanced Joint Effectiveness Model (AJEM): Latest Version 2.55 is released and available for download.

2018 JMUM Proceedings Volume I (Unclassified Proceedings) and Volume II (Classified Proceedings) are available for download from the DTIC R&E Gateway.

Never Forget: Celebrating Those Who Served

The Joint Aircraft Survivability Program (JASP) is soliciting project proposals for their FY20 program.

► Add your item to our board by contacting us.

DSIAC JOURNAL FALL 2018



Optimizing Armament Systems with Artificial Intelligence and Machine Learning

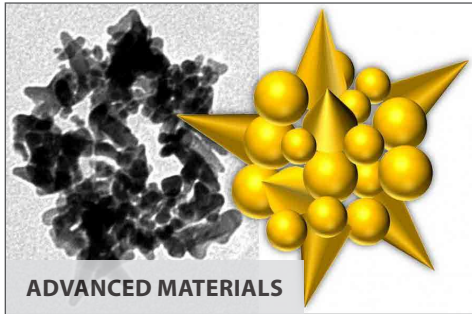
Also in This Issue:

- Corrosion Protection for Cost Savings on Pacific Bases
- Additive Manufacturing in the DoD
- Overcoming the Barriers to Human-Machine Teams
- Fire Risks with Fiber-Reinforced Polymer (FRP) Composites



► Have an idea for a topic? Please contact us to write an article!

RECENT NEWS



ADVANCED MATERIALS

Genetically Engineered Virus Spins Gold Into Beads



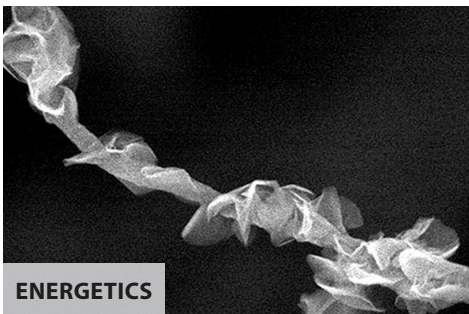
AUTONOMOUS SYSTEMS

Microsoft Now Lets You Build Your Own Drone App



DIRECTED ENERGY

After Laser Attacks, Pentagon Spending \$200M to Protect Pilots



ENERGETICS

Inspired by Nature: Design for New Electrode Could Boost Supercapacitors' Performance



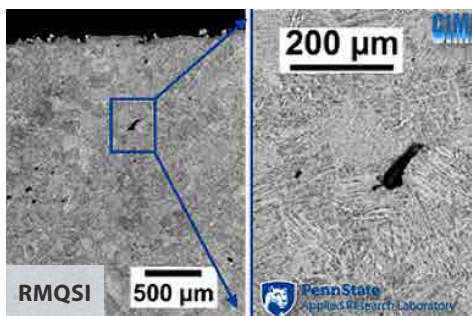
MILITARY SENSING

Don't Dumb Down U.S. Army Next Gen Radar



NON-LETHAL WEAPONS

Could This Non-Lethal Round Replace Tasers for Marines?



RMQSI

200 μm

500 μm



Work Begins on U.S. Air Force Research Into Flaw Formation in Powder Bed Fusion Processes



SURVIVABILITY AND VULNERABILITY

Army, Arizona State University Team on New Alloy With Superhero-Like Strength



WEAPON SYSTEMS

Long Range, Short Term – Improving Army Precision Fires

THE HEAT IS OFF



Advanced Resins Are Revolutionizing the Way We Repair Aircraft

Aircraft design has progressed rapidly over the last 110 years. The simple wooden planes that were used mostly as scouts in World War I gave way to the riveted metal bombers and fighter planes of World War II. By the 1980s, computer-aided design and manufacturing revolutionized the entire process. Today, innovative new composite materials are replacing steel, titanium, and aluminum in a wide array of aerospace components from access panels to fuselages. Composites have improved strength-to-weight ratios, excellent resistance to corrosion, and the potential for quick and expedient repairs. The current two-component, thermally-accelerated resins used in composite repair add many steps to the repair process that make them inefficient and costly to use on aerospace structures. Switching to an ambient temperature cure, one-part resin can greatly streamline aircraft repairs, saving money and man-hours and significantly increasing weapon system readiness. [Read More.](#)

ABOUT THIS PUBLICATION: The inclusion of hyperlinks does not constitute an endorsement by the DSIAC or United States Department of Defense (DoD) of the respective sites, nor the information, products, or services contained therein. The DSIAC is a DoD sponsored Information Analysis Center with policy oversight provided by the Office of Under Secretary of Defense for Research and Engineering (OUSDR&E) and is administratively managed by the Defense Technical Information Center (DTIC). Reference herein to any specific commercial products, process, or services by trade name, trademark, manufacturer, or other-wise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or the DSIAC.

Defense Systems Information Analysis Center
 4695 Millennium Drive, Belcamp, MD 21017
 Phone: 443-360-4600
[Unsubscribe](#) | [DSIAC Journal](#) | [dsiac.org](#) | [Past Digests](#)

