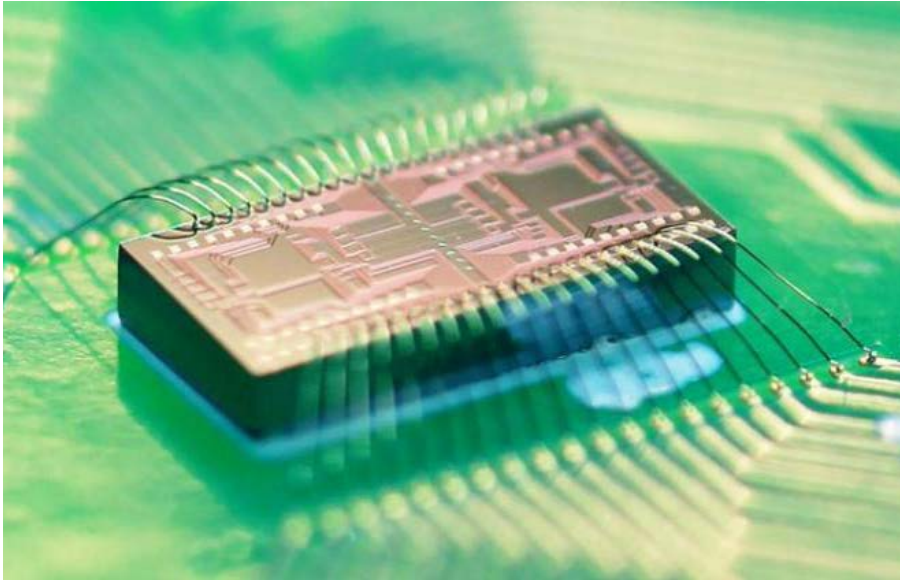


Defense Systems

DIGEST

21 MAY 2019 – THE LATEST FROM DEFENSE SYSTEMS INFORMATION ANALYSIS CENTER



NOTABLE TECHNICAL INQUIRY

What miniaturized cryptographic devices are available for transponder and radio applications in small UAVs?

DSIAC was asked to find small size, weight, and power (SWaP) cryptographic devices for Mode-5 transponders and radios in small unmanned aerial vehicle (UAV) applications. DSIAC searched open sources for commercially available systems and the Small Business Technology Transfer... [Read More](#)

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

FEATURED NEWS

The New Face of American War Is a Robot

Here's a question worth asking about America's seemingly endless global conflicts: If you kill somebody and there's no one there (on our side anyway), is the United States still at war? That may prove to be the truly salient question when it comes to the future of America's war on terror, which is now almost 18 years old and encompasses significant parts of the Greater Middle East and North Africa. Think of it, if you want, as the artificial intelligence, or AI, question.



It's not, however, the question that Washington is obsessing over. Retired military officials, defense outlets, and pundits alike have instead been pontificating about what it means for the Department of Defense and key Trump officials to regularly insist that the country's national security focus is shifting—from a struggle against insurgent groups like al-Qaeda and the Islamic State to the growing influence of what are termed "near-peer" enemies, a fancy phrase for China and Russia. Speculation about what this refocusing will look like has only grown in the wake of President Trump's various tweets and statements declaring that America's endless wars will be coming to a "glorious end" and how "now is the... [Read More](#)

VOICE FROM THE COMMUNITY



Shannon Foley, Ph.D., Human Effects Scientist, Joint Non-Lethal Weapons Directorate

As a subject matter expert at the Joint Non-Lethal Weapons Directorate, my primary duties include technical and financial oversight of several programs and projects within the human effects portfolio, as well as human effects research planning and strategizing. I also support technology and materiel development, combat development, and acquisition programs. I have been working with the DoD since 2006 and previously served as a human systems engineer at the Naval Surface Warfare Center Dahlgren Division. I have a Ph.D. and M.Phil. in cognitive neuroscience from The George Washington University.

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UPCOMING EVENTS

Optical Interference Coatings (OIC) Conference

2 June 2019 to 7 June 2019

46th Annual Review of Progress in Quantitative Nondestructive Evaluation Conference

14 July 2019 to 18 July 2019

2019 Global Explosive Ordnance Disposal (EOD) Symposium & Exhibition

6 August 2019 to 8 August 2019

2019 IEEE/AIAA 38th Digital Avionics Systems Conference (DASC)

8 September 2019 to 12 September 2019

► Want your event listed here? Let us know!

SEEKING YOUR KNOWLEDGE

What modular payloads can be swapped into and out of air vehicles to support ISR, EA, AEW, and communications relay missions?

What display technologies can be used for a multiple-intelligence, ship-tracking fusion system?

Do you have any information on the legacy codes DAGER and SABER?

► To learn more about technical inquiries click here!

DSIAC JOURNAL SPRING 2019



Laser Power Beaming

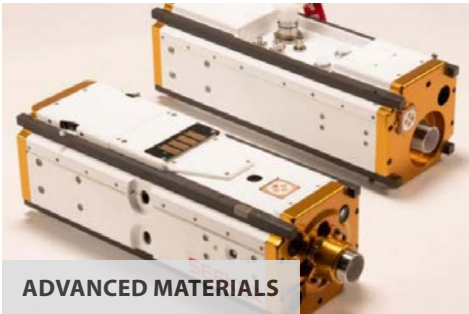
Also in This Issue:

- Random Error in Small-Caliber Dispersion
- Additive Manufacturing for Aerospace Maintenance and Sustainment
- Microdiode Lasers: A Safer Alternative for Electrically-Fired Energetic Devices
- A Titanium-Based Igniter System for Hand-Grenade Fuzes



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

RECENT NEWS



ADVANCED MATERIALS

NASA and TTH Use Carbon 3-D Printing to Create Seeker Spacecraft Inspection Robots



AUTONOMOUS SYSTEMS

NEWS FROM SEA-AIR-SPACE: Navy's New Unmanned Aerial Tanker Approaching First Flight



DIRECTED ENERGY

U.S. Air Force Successfully Tests Anti-Missile Laser Defence System



ENERGETICS

Army Researchers Improve Battery Safety With New Cathode Chemistry



MILITARY SENSING

Powerful New Raytheon Radar Gives Navy Better Defense Against Ballistic, Hypersonic Threats



NON-LETHAL WEAPONS

Why the U.S. Marines Want a Very Special Bullet (A "Taser" Bullet, to Be Exact)



RMQSI

Shot Down? The USAF Now Wants to Air-Drop an Air Taxi to Fly You Out to Safety



SURVIVABILITY AND VULNERABILITY

These Body Armor Breakthroughs Will Change Combat



WEAPON SYSTEMS

U.S. Fighter Jets Could Soon Be Armed With Lasers



Join us for a live webinar presentation on “Cryomilled 17-4 Stainless Steel Powder as Feedstock for Additive Manufacturing.”

Wednesday, 29 May 2019 – 12:00 to 12:45 p.m. EDT

Additive manufacturing (AM) powders supplied by the manufacturer are gas atomized and supplied without post treatment. By including a pre-processing treatment prior to AM, the powder can be modified to improve the mechanical properties of the final build via a reduction in internal powder porosity and grain size refinement. A pre-processing treatment could also change how the powder behaves during the AM process. In this study, as-received gas atomized 17-4 SS powder was ball milled in liquid nitrogen (cryomilling) and then used as feedstock for powderbed fusion (PBF) AM. The effect of powder pre-processing treatment on powder flow and morphology and how changes influence the PBF process and subsequent defect formation in finished parts was examined. Finished parts were characterized through microcomputed tomography and optical microscopy, while the effect on material characteristics was examined via x-ray diffraction and electron microscopy.

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