

VOICE FROM THE COMMUNITY



Dr. James Bray, Chief Scientist, General Electric (GE) Global Research

For over four decades, I've supported GE Global Research in leveraging our multidisciplinary core capabilities and a workforce of over 1,000 subject matter experts to design and develop advanced solutions to complex, challenging problems. I've worked for many years with GE Healthcare on magnetic resonance imaging (MRI), which requires significant expertise in superconductivity and cryogenics. I've also been involved in the design and development of several prototype superconducting motors and generators, as well as the study and advancement of many types of energy and power sources. For more information about GE Research, visit <https://www.ge.com/research/>.

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

UPCOMING EVENTS

Automated ISR and Battle Management Symposium

12 February 2019 to 13 February 2019

Fundamentals of Random Vibration and Shock Class

19 February 2019 to 21 February 2019

Military Sensing Symposium 2019 Parallel Conference

25 February 2019 to 28 February 2019

Additive Manufacturing for Aerospace and Space

26 February 2019 to 28 February 2019

► Want your event listed here? Let us know!

BULLETIN BOARD

IAC Director Thomas Gillespie is Keynote Speaker at the 5th Annual Defense Research and Development Summit

What to Expect From Shanahan's DoD

Vulcan is Currently Transitioning to a Broader Community!

► Add your item to our board by contacting us.

DSIAC JOURNAL FALL 2018



Fire Risks with Fiber-Reinforced Polymer (FRP) Composites

Also in This Issue:

- Radio Frequency, Directed Energy Weapon Design Tool
- Optimizing Armament Systems with Artificial Intelligence and Machine Learning
- Corrosion Protection for Cost Savings on Pacific Bases



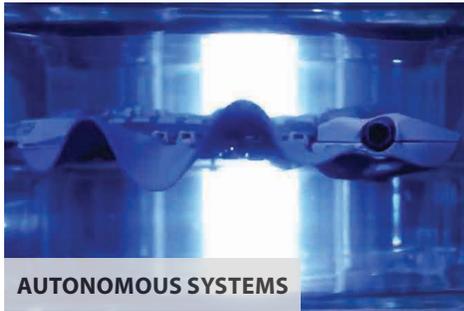
► Have an idea for a topic? Please contact us to write an article!

RECENT NEWS



ADVANCED MATERIALS

Scalable Manufacturing Process Spools Out Strips of Graphene



AUTONOMOUS SYSTEMS

BionicFinWave's Undulating Fin Propulsion May Give Underwater Drones More Precise Control



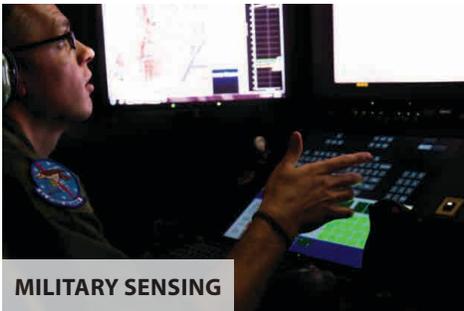
DIRECTED ENERGY

Army Looks Into Laser-Powered Drones



ENERGETICS

Eel-Inspired 3D-Printed Hydrogel Instantly Generates Electricity



MILITARY SENSING

Can the Intel and Defense Community Conquer Data Overload?



NON-LETHAL WEAPONS

Better Tools Along the Border



RMQSI

DNA Tagging Detects Counterfeit Equipment



SURVIVABILITY AND VULNERABILITY

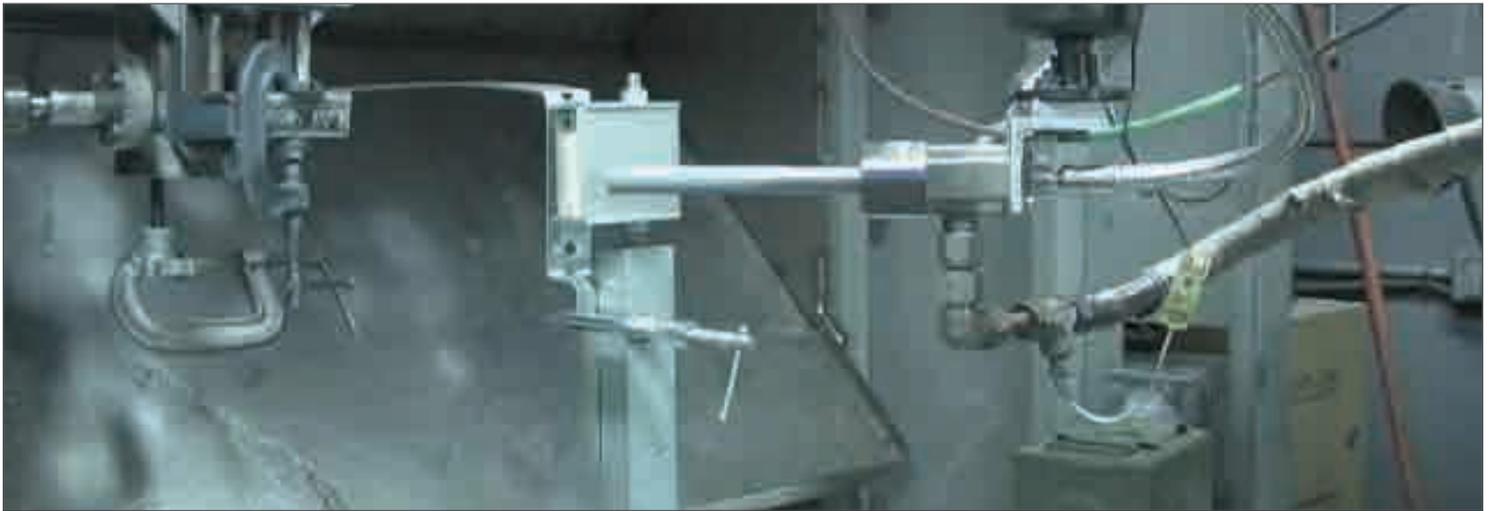
Here's How Air Mobility Command Will Improve Aircraft Survivability



WEAPON SYSTEMS

China's Electromagnetic Railgun is Apparently Already Roaming the High Seas

WEBINAR: THE COLD SPRAY REVOLUTION



Join us for a live webinar presentation on "The Cold Spray Revolution!"

Wednesday 30 January 2019 – 12:00 to 12:45 p.m. EST

The deposition of metal powders onto surfaces has been done by thermal spray for over 100 years. In this process, metal particles are melted and blown onto the coated surface. Thermal spray processes thus apply engineered coatings to modify the surface properties of an item. These coatings can provide such properties as enhanced wear resistance, thermal barriers, electrical/thermal conductivity, hard-chrome replacement, and corrosion protection. The coatings can be applied to turbine blades, shaft seals, medicals implants, etc.

The extreme heat required in thermal spray can compromise the powder and substrate characteristics. Cold spray was introduced 30 years ago in part to prevent this heat damage. Cold spray accelerates powder particles to very high velocity in a supersonic nozzle, and a deposit is formed when the particles impact on the surface. [Read More](#)

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Defense Systems Information Analysis Center
4695 Millennium Drive, Belcamp, MD 21017
Phone: 443-360-4600
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