

Defense Systems

NEWS DIGEST

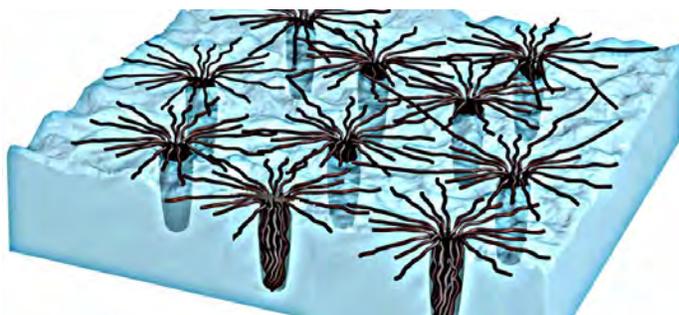
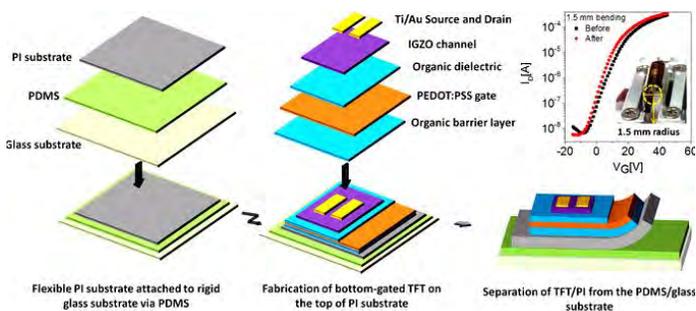
6 DECEMBER 2016 - THE LATEST IN DEFENSE SYSTEM NEWS



The Future Is Small

For three decades, the symbol of the U.S. space program was the mighty Space Shuttle, an 86-ton reusable spacecraft that hauled astronauts, equipment, and supplies into orbit 135 times before being retired in 2011. Among candidates for the next symbol might be the shiny aluminum box located on a clean room assembly bench in Georgia Tech's Engineering Science & Mechanics (ES&M)...

Advanced Materials



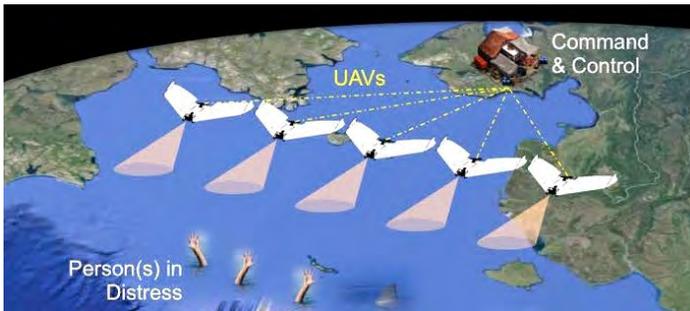
Highly Bendable Thin Film Transistors Using Thermally Stable Organic Dielectric Layer

For decades, transparent and flexible thin film transistors (TFTs) have drawn much attention and have become the main focus of research in large-area electronics because they can be used in modern electronic applications, such as wearable computers, sensors, photodetectors and rollable displays. The key requirement for...

Dry Adhesive Holds in Extreme Cold, Strengthens in Extreme Heat

A new dry adhesive has been created that bonds in extreme temperatures—a quality that could make the product ideal for space exploration and beyond. The gecko inspired adhesive loses no traction in temperatures as cold as liquid nitrogen or as hot as molten silver, and actually gets stickier as heat increases, the researchers...

Autonomous Systems



UAV Swarm Behavior Modeling for Early Exposure of Failure Modes

Over the past decade, the Department of Defense has placed a great amount of attention on the advancements of unmanned aerial vehicles (UAVs), and more specifically on employing a large number of autonomous UAVs into “swarms.” These swarms form an organized cluster of vehicles to act out multifaceted operations as a group. Despite the benefits offered by UAV swarms, there are...

How to Land a Drone on a Manned Airplane: DARPA’s ‘Gremlins’

This time, General Atomics’ secret weapon isn’t the drone. It’s the mechanical arm that catches it in mid-flight — and then hauls it into the back of a C-130 cargo plane, also in mid-flight.

General Atomics, which builds the iconic Predator, has rolled out its offering for DARPA’s Gremlins program, blandly called the Small Unmanned Air Vehicle (SUAS)...

Directed Energy



Drone Gun Jams Unmanned Aerial Vehicles from More than a Mile Away

As drone numbers rocket across the world, concerns mount over their safety in the wrong hands. With even ISIS reportedly using shop-bought drones to drop hand grenades on Western troops in Iraq, anti-drone technologies are on the rise.

Enter DroneGun, a signal-jamming rifle capable of taking out an Unmanned Aerial Vehicle (UAV) from 1.2 miles...

The Future of EOD: Laser-Armed Robots

Kicking down doors is high risk in the fight against terrorism because insurgents are likely to rig trap doors, tunnels or entry ways with lethal explosives. The Explosive Ordnance Disposal techs may soon use lasers to dispose of explosive devices. The plan is to position the lasers on top of an MRAP, or Mine-Resistant Ambush Protected vehicle. The Air Force announced in May it’s working with RE2 Robotics, which is developing a robotics system to inspect airfields for unexploded...

Energetics



Navy Looking to Improve Energetic Materials for More Powerful, Smaller Munitions

Even by the standards of a military installation, Naval Surface Warfare Center Indian Head can be a dangerous place. The center on the Potomac River in Southern Maryland is where the Navy's bomb makers come up with new ways to blow things up. Once explosives and rockets are packed up and sent out to the fleet, they're relatively safe. But the raw ingredients for bombs are much more...



New Self-Calibrating Sensors Could Help Curb Energy Use

If you want to save on your monthly electric bill and reduce your greenhouse gas emissions at the same time, you might buy a new, energy-efficient refrigerator. Or water heater. Or clothes dryer. But if you can only replace one of these, which will give you the biggest pay-back? Soon, there could be an easy way to figure out how much power is being used by every appliance...

Military Sensing



Thought Sensors and Pervasive Computing Environment May Improve Communication

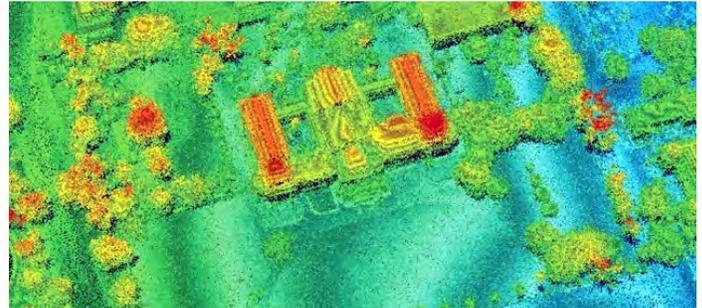
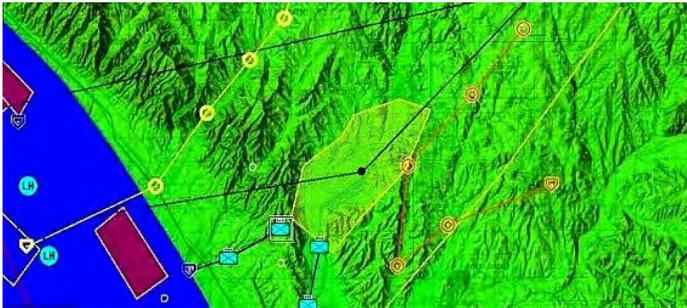
U.S. Army research on wearable technologies could lead to a future in which soldiers wear helmets with embedded thought sensors to communicate with one another and autonomous systems. For now, scientists have developed a prototype architecture that will allow soldiers equipped with wearable technologies to communicate with each other and with robotic systems using...



Army Working to Develop and Demonstrate Degraded Visual Environment Technologies

Army helicopter aviation experts are moving forward with a program to use synthetic vision technologies to enable rotorcraft pilots to take off and land in degraded visibility environments (DVE) from blowing dust, snow, or other conditions that make it difficult to see. Officials of the Aviation and Missile Research, Development and Engineering Center (AMRDEC) at Redstone Arsenal, Ala.,...

Non-Lethal Weapons



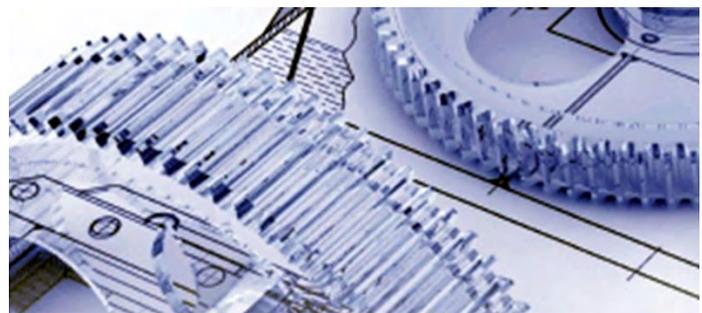
Navy Developing Counter-ISR Systems to Defeat Sensor / Communications Networks

Electronic warfare experts at Metron Inc. in Reston, Va., are developing a counter-ISR planning system to help U.S. Navy warfighters detect and defeat enemy sensor and communications networks. Officials of the Space and Naval Warfare Systems Center Atlantic in Charleston, S.C., announced a \$7.2 million contract to Metron last week for the Maritime Counter-Intelligence, Surveillance...

MIT Lincoln Laboratory Technology Confronts Disasters

In 2010, soon after Haiti was devastated by an earthquake, a team from MIT Lincoln Laboratory collected and analyzed information to help the U.S. Southern Command (USSOUTHCOM), the lead military agency responding to the crisis, effectively dispatch vital resources, including food, water, tents, and medical supplies, to the victims of this disaster. The laboratory's capabilities in...

RMQSI



Sandia Labs Course Helps Aircraft Inspectors Detect Composite Material Damage

As manufacturers build more wings, fuselages and other major commercial aircraft parts out of solid-laminate composite materials, Sandia National Laboratories has shown that aircraft inspectors need training to better detect damage in these structures. So the Airworthiness Assurance Center has developed the first course to train airline and aircraft manufacturing inspectors in nondestructive...

Multidisciplinary Reliability Design Optimization Under Time-Varying Uncertainties

Cyber warfare, information warfare, electronic warfare (EW), spectrum warfare, electromagnetic maneuver warfare. Those are only some of the names by which U.S. military experts describe their offensive and defensive use of the electromagnetic spectrum.

Some believe it all should be combined under just one term - Spectrum Warfare or Electromagnetic Maneuver...

Survivability & Vulnerability



New Chem-Bio Protective Ensemble in the Works

The office in charge of chemical and biological protection is gearing up to replace the protective ensemble service members wear when weapons of mass destruction are employed. Users want more flexibility to don different layers of protection depending on the circumstances. But to do this, they also need better sensors to tell them what types of threats are coming their way, officials said at a...



'Conductive Concrete' Shields Electronics from EMP Attack

An attack via a burst of electromagnetic energy could cripple vital electronic systems, threatening national security and critical infrastructure, such as power grids and data centers.

Nebraska engineers Christopher Tuan and Lim Nguyen have developed a cost-effective concrete that shields against intense pulses of electromagnetic energy, or...

Weapon Systems



Leonardo Unveils Net-Centric Centauro II Armored Vehicle

Power, observation, mobility, ergonomics, firing accuracy, communication, and, of course, best survivability: these are the basic requirements that have led to the development and production of the latest member of the Centauro family, the new Centauro II armored vehicle, a product with an outstanding amount of technological content, unique in its category. Cutting-edge technology...



Hypersonic Flight Is Coming: Will the US Lead the Way?

The world is at the start of a renaissance in supersonic and hypersonic flight that will transform aviation, but the effort will need steady commitment and funding if the United States wants to lead the way, congressional leaders and industry officials said at a forum late last month.

"What's exciting about aerospace today is that we are in a point here where suddenly, things are happening all across the board in areas that just haven't been..."

Announcements & Events



28th Annual SO/LIC Symposium & Exhibition

Our goal through our annual symposium, is to stimulate and arbitrate this conversation leading to a closer and more collaborative relationship with USSOCOM. We see the symposium not only an industry event, but a community event where current, former and future operators can meet with innovators to shape the ideas and technology of the future.

DATE: February 13-16, 2017



32nd National Test and Evaluation Conference

Focus will be on improvement of T&E in our defense and homeland security acquisition systems, specifically, "Strategic T&E Collaboration: Government & industry partnering to achieve decisive operational advantage." Strategic collaboration around T&E technology and infrastructure needs to start now to support acceleration of DoD's Third Offset Strategy.

DATE: March 6-8, 2017



SAE 2017 Additive Manufacturing Symposium

The latest information on innovations, technical advances, products, applications and market issues. Expand your knowledge of challenges and solutions associated with the advancement of Additive Manufacturing (AM) technologies and processes. Network with the diverse community working on AM and the manufacturers that implement and use AM.

Date: March 14-15, 2017

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