

Defense Systems

NEWS DIGEST

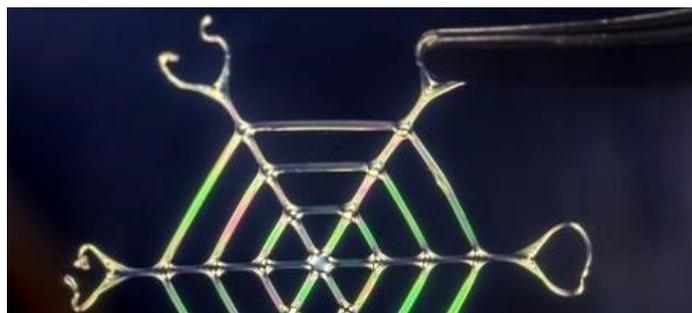
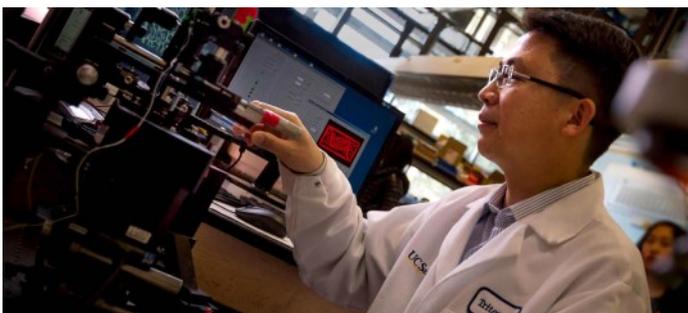
9 May 2017 - THE LATEST IN DEFENSE SYSTEM NEWS



Russia, Turkey and the Black Sea A2/AD Arms Race

While the Chinese A2/AD “bubble” in the South China Sea gives headaches to the United States and its allies in the Asia-Pacific region, further to the north, the newest Russian “bubble” is about to go online against Japan in the disputed Kuril Islands. Meanwhile, on the other end of Eurasia, in Russia’s Kaliningrad enclave, another A2/AD zone challenges NATO’s position in Eastern Europe...

Advanced Materials



Nanoengineers 3-D Print Biomimetic Blood Vessel Networks

In the past decade, engineers at the University of California San Diego have 3D printed a variety of devices ranging from rocket engines, to robots, to structures inspired by the seahorse’s tail. Now, nanoengineers have added a new item to that list: a 3D printed biomimetic blood vessel network. The new research, led by nanoengineering...

Bioinspired Process Makes Materials That Are Light, Robust and Programmable

Researchers at Tufts University’s School of Engineering have developed a new bioinspired technique that transforms silk protein into complex materials that are easily programmable at the nano-, micro- and macro-scales as well as ultralight and robust. Among the varied structures generated was a web of silk nanofibers able to...

Autonomous Systems



Automated Flight Safety Improving Space Access

After supporting over 3,500 launches in the past 70 years, Cape Canaveral Air Force Station (CCAFS) faces a busy 2017. With a scheduled flight manifest of some 30 launches, the Eastern Range is changing the way it handles flight safety to satisfy a wider array of customers. Every rocket launched has a feature onboard that can command the vehicle to self-destruct: a flight termina-



Hybrid VTOL Fixed-Wing Drone Flies for 2+ Hours

The Volanti from Sydney-based Carbonix is a carbon composite drone with a 2.7-m (9-ft) wingspan that uses a multirotor system for VTOL, then transitions to horizontal flight as a push-prop fixed-wing once in the air. It flies for over two hours on electric power or seven with a gas pusher, and Carbonix hopes it will fill the industrial-grade niche in between hobby and military UAV gear. At this

Directed Energy



U.S. Army's Laser-Armed Stryker Has Blasted Dozens of Drones

With terrorists, militant groups, and other potential opponents increasingly employing weaponized drones, the U.S. Army is becoming more and more concerned about the dangers unmanned aircraft pose to its soldiers. In one recent exercise, the service showed off one potential solution, a specially modified Stryker Infantry Carrier Vehicle (ICV) with a laser. The Army rolled out the testbed



Why America's Military Lusts over Laser Weapons (And May Never Get Them)

Directed energy has been a fetching technological idea for decades, but as Sandra Irwin wrote in National Defense in July 2015, the technology seemingly "has perennially been on the cusp of a major breakthrough." Last summer, though, Jason Ellis of the Lawrence Livermore National Laboratory wrote a report for the Center for a New American Security (CNAS) about a coming

Energetics



ARL Focuses on Peer-to-Peer Collaboration for Future Soldier Technologies

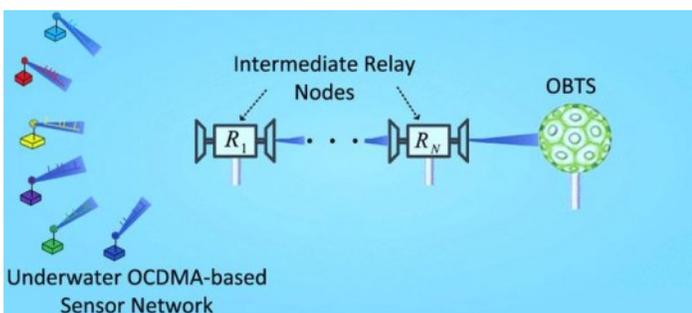
U.S. Army Research Laboratory researchers conduct peer-to-peer collaboration to discover, innovate and transition science and technology for today's and future Soldiers. It is through this collaboration teams solve challenging problems to increase the safety of U.S. service-members. Dr. Pablo E. Guzmán, a synthetic chemist in the Energetic Technology Branch of the Weapons and



The Story of Ubicqua: from Street Lights to Smart Sensors to Smart Cities

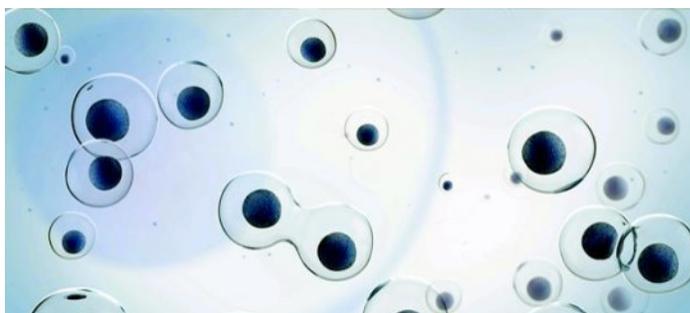
How do you turn a ubiquitous item like street lights into a network of smart sensors to create a smart city that can monitor the environment, detect gun shots and so much more? Ubicqua is making cities across the globe smarter with Kairo, a customizable, light pole-based router that takes advantage of existing city infrastructure. The inspiration for Kairo came from a street light outside of co-

Military Sensing



Underwater Optical Wireless Communication: Advancements and Future Growth

Underwater wireless information transfer is of great interest to the military, industry, and the scientific community, as it plays an important role in tactical surveillance, pollution monitoring, oil control and maintenance, offshore explorations, climate change monitoring, and oceanography research. In order to facilitate all these activities, there is an increase in the number of unmanned vehicles



DARPA RadioBio Program Investigates EM-Based Biological Communication

DARPA starts new program to explore whether electromagnetic waves are purposefully transmitted and received within or between cells and, if so, to leverage those insights not just for biosystems but also for communicating in cluttered electromagnetic environments. For decades scientists have wondered whether electromagnetic waves might play a role in intra- and inter-cell

Non-Lethal Weapons



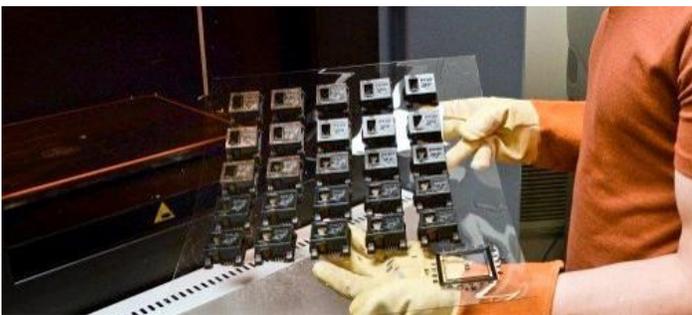
Informed Terminology for Non-Lethal Targeting

Words have meaning and perceptions drive behaviors. Information Operations (IO) has a unique challenge in the contemporary informational environment supporting the Commander's intent through cultural and social sensitivities of partners, allies, and citizens. The deployment experiences of the 110th IO FSB over the past decade, in support of both Federal and Domestic missions, have

America's Next Secret Weapon (That Can Paralyze a City): EMP Artillery Shells

If the U.S. Army has its way, America's next secret weapon may be an electromagnetic pulse (EMP) artillery shell that paralyzes an enemy city. These special shells won't carry high explosive. Instead they will emit EMP bursts, or some other non-kinetic technology, to disrupt the computers, radio communications, Internet links and other ties that bind modern societies. And do so without creat-

RMQSI



Army Explores 3-D Printing's Future Applications for Soldiers, Force

A Soldier heads back to camp, grabs a power bar and unloads his gear. The power bar, which was "printed" minutes earlier, contains all the nutrients his body currently needs, according to sensors that are embedded in his uniform. While this may sound like a scene from a sci-fi movie, engineers and scientists at the Army Research, Development and Engineering Command (RDECOM) are

AFRL Develops Better Way to Cool Electronics

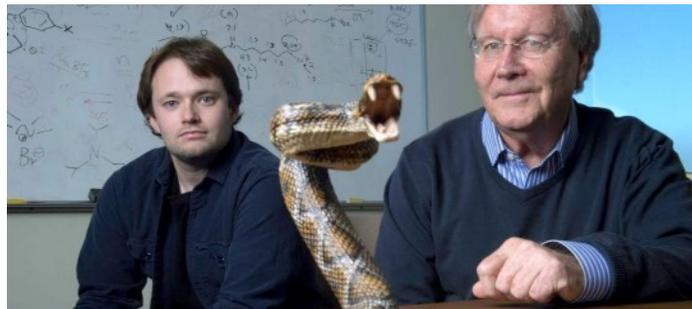
Researchers at the Air Force Research Laboratory and a partner company have developed a way to cool the next generation of high-powered electronics —increasing capabilities of warfighters — with simple materials. Thermal management via oscillating heat pipes are expected to enter commercial systems within the next few years. Companies such as Boeing are interested in using the

Survivability & Vulnerability



New Army Jungle Wear Gives ‘Trench Foot’ the Boot

On Monday, the US Army updated plans for its Jungle Combat Boot (JCB), a boot that it hopes will tackle trench foot, among other things. Traditional issue footwear works well in sand, asphalt and high heat, but falls short in humid, wet conditions, which can lead to trench foot, according to the US Army. And, soldiers on the ground in jungle-like conditions are subjected to obstacles such as



Snake bit? UCI Chemists Develop Broad-Spectrum, Cheap Snake Venom Antidote

Chemists at the University of California, Irvine have developed a way to neutralize deadly snake venom more cheaply and effectively than with traditional anti-venom – an innovation that could spare millions of people the loss of life or limbs each year. In the U.S., human snakebite deaths are rare – about five a year – but the treatment could prove useful for dog owners, mountain bikers and

Weapon Systems



Path Forward For Army’s Modernization Priorities Takes Shape

The Army this week took another step in articulating what types of investments it deems necessary to support operational ideas about future ground warfare. The service earlier this year presented its “Big 8” initiatives, a list of modernization priorities designed to stay ahead of global threats and maintain overmatch against present and future adversaries. However, the service’s Training and



Virtual Warfare: U.S. Navy Tests Technologies in 3D Aboard the USS Dahlgren

Late last August, just 50 miles south of Washington, D.C., a series of explosions rocked the normally placid Potomac River. The blasts came from artillery belonging to the USS Dahlgren, which was testing a new targeting system. Using a drone to observe its marks, the targeting system automatically recalculated its aim and retrained the Dahlgren’s gunners. The following volley hit, clearly

Announcements & Events



FMS Electronic Warfare Symposium & Workshop

The conference provides an educational opportunity and forum for US Government, U.S. Defense Industry, Academia, and International partners to share information and provide updates on Foreign Military Sales (FMS) and Direct Commercial Sales (DCS) program policy, processes, and improvements.

DATE: May 15-19, 2017



OpenWERX Challenge: Jump the Dog

OpenWERX Challenges provide a forum for groups to use open source / open hardware / creative commons building blocks to develop all new hardware, electronics and software and earn cash prizes. Jump the Dog is focused on development of a Canine Oxygen Mask for High Altitude High Opening (HAHO).

DATE: June 1, 2017



4th Biennial Strike Challenge

Strike Challenge affords industry an opportunity to provide interactive demonstrations of domestic capability (DOMOPS) and specialized response systems. The focus is on man-pack and light mobility support equipment designed for light responder / specialized unit use in emergency response, survivability, security, search and rescue, and 'special' operations.

DATE: August 15-17, 2017

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