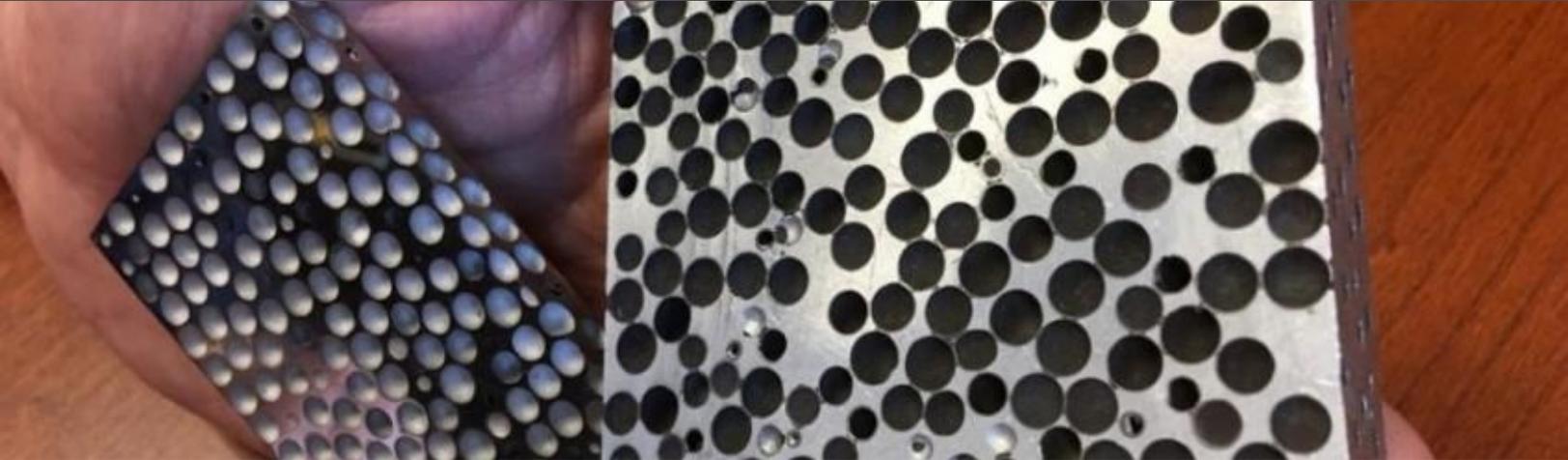


Defense Systems

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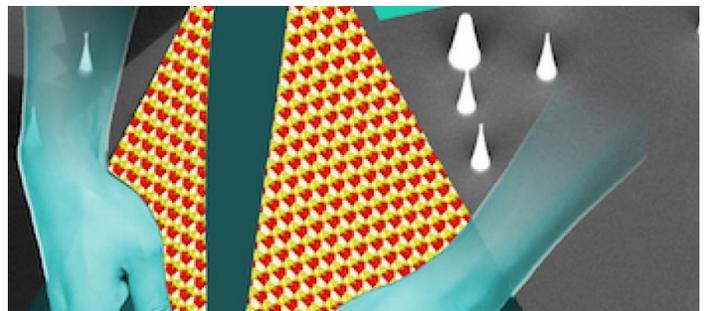
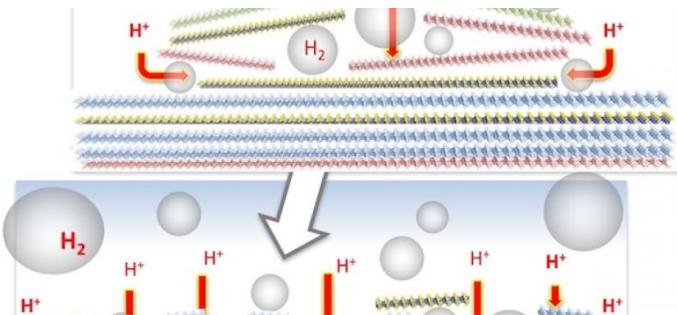
10 OCTOBER 2017—THE LATEST HIGHLIGHTS IN DEFENSE SYSTEMS NEWS



Metal Foam Stops Bullets Without Cracking

Foam might not seem a likely way to stop a high-speed bullet, but a North Carolina researcher has developed a composite metal foam that stops bullets on contact....

Advanced Materials



Bubbles Help New Catalysts Self-Optimize

Scientists at Rice University and the Lawrence Livermore National Laboratory have predicted and created new two-dimensional electrocatalysts to extract hydrogen from water with high performance and low cost...

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Landscapes Give Latitude to 2-D Material Designers

Rice University researchers have learned to manipulate two-dimensional materials to design in defects that enhance the materials' properties.

The Rice lab of theoretical physicist Boris Yakobson and colleagues...

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Autonomous Systems



New Computing System Takes Its Cues From Human Brain

Some problems are so challenging to solve that even the most advanced computers need weeks, not seconds, to process them.

Now a team of researchers at Georgia Institute of Technology and University of Notre Dame has created...

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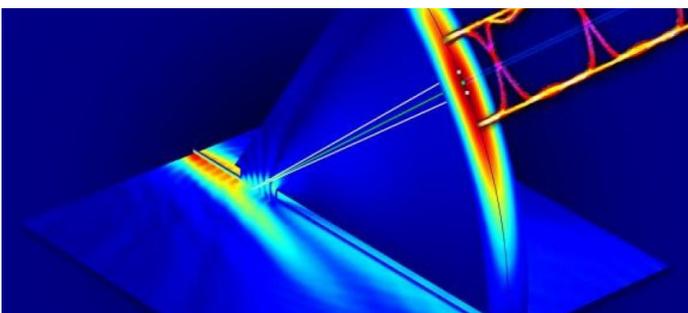


Artificial Intelligence (AI) and the Asilomar AI Principles

In a sequel to their 2015 Puerto Rico AI conference, the Future of Life Institute brought together AI researchers from academia and industry, and thought leaders in economics, law, ethics, and philosophy for workshops and to stimulate discussion on beneficial AI....

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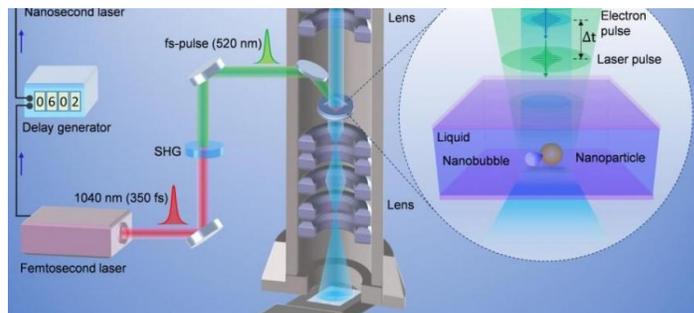
Directed Energy



Scientists Report First Data Transmission Through Terahertz Multiplexer

Researchers have demonstrated the transmission of two separate video signals through a terahertz multiplexer at a data rate more than 100 times faster than today's fastest cellular data networks...

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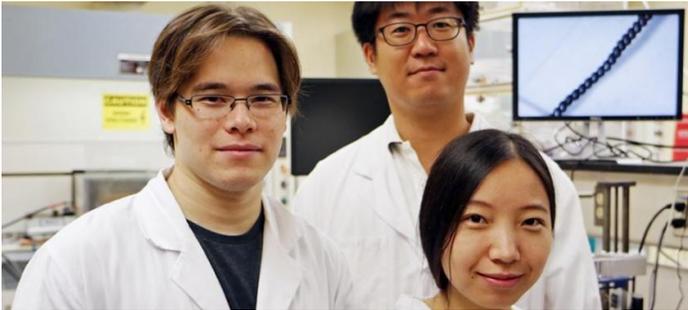


Using Four-Dimensional Electron Microscopy to Track Diffusion

A team of researchers at Caltech has developed a way to capture on film the superfast propulsive motion of Brownian objects, particularly those at the nanoscale. In their paper published on the open-access site Science Advances, the team describes using four-dimensional electron...

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Energetics



No Batteries Required: Energy-Harvesting Yarns Generate Electricity

An international research team led by scientists at The University of Texas at Dallas and Hanyang University in South Korea has developed high-tech yarns that generate electricity when they are stretched or twisted....

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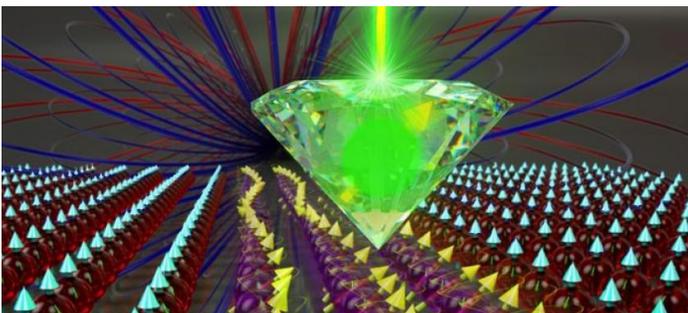


The Electric, Driverless Revolution Is About to Hit the High Seas

It's not just in Google laboratories that the revolution in electric, driverless transportation is gathering pace: a Norwegian shipping company is aiming to be able to deliver cargoes by sea on unmanned vessels from 2020....

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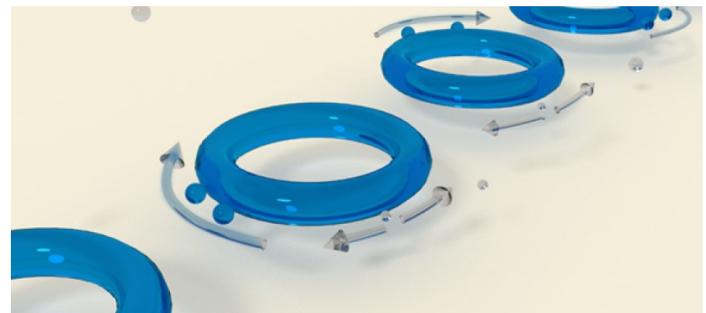
Military Sensing



Researchers Develop Technique to Control and Measure Electron Spin Voltage

Information technologies of the future will likely use electron spin — rather than electron charge — to carry information. But first, scientists need to better understand how to control spin and learn to build the spin equivalent of electronic components, from spin transistors, to spin gates and circuits...

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Study in Nature: Engineers Find Better Way to Detect Nanoparticles

It's long been thought that two's company and three's a crowd. But electrical and systems engineers at Washington University in St. Louis and their collaborators have shown that the addition of a third nanoscatterer, complementing two "tuning" nanoscatterers, to a photonics resonator makes for a fascinating physics party...

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Non-Lethal Weapons



Is The United States Firing Off "Electricity Bombs" in Syria?

It sounds like something straight out of Call of Duty video game sequel, James Bond movie, or Batman comic. Troops call in an air strike, but instead of high explosives, the pilots employ a weapon that screws with the enemy's electronics...

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Trump Said Sleeping Gas on Planes Would Stop Terrorists

Donald Trump suggested commercial airline pilots should be able to use "sleeping gas" to stop terrorists during a conversation on The Howard Stern Show shortly after the 9/11 terror attacks. But employing such a gas could prove deadly...

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RMQSI



Database Tool Improves DOD Obsolescence

A database created to track obsolescent components is helping ensure readiness across the DOD.

The U.S. Army Aviation and Missile Research, Development and Engineering Center's Obsolescence Engineering team created a system called the Multifunctional Ob-

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A Smoother Ride Over Troubled Waters

Boating through choppy waters can be an exciting but physically exhausting experience. Now researchers at Utah State University's Splash Lab are taking steps toward the design of an inflatable speedboat that absorbs wave energy and provides a smoother ride for passengers...

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Survivability & Vulnerability



New ‘Sleeping’ Sensors Could Save Costs, Make Warzones Safer

When stationed in dangerous, rural areas, the last thing soldiers should worry about is replaced a dead battery. That’s one reason why the Defense Advanced Research Projects Agency, or DARPA, is interested in developing devices that use virtually no power at all...

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Synthesizing Pure Graphene, a ‘Miracle Material’

UConn chemistry professor Doug Adamson, a member of the Polymer Program in UConn’s Institute of Materials Science, has patented a one-of-a-kind process for exfoliating graphene in its pure (unoxidized) form, as well as manufacturing innovative graphene nanocomposites that have potential uses in a variety of applications...

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Weapon Systems



New Nuclear Missile Design Concepts to Be Matured by Lockheed Martin

U.S. Air Force officials selected Lockheed Martin and Raytheon to mature design concepts and prove developmental technologies for the Long Range Stand Off (LRSO) missile program...

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5 U.S. Military Super Weapons That Could Have Transformed War Forever

Technology undoubtedly matters, but only rarely in the sense that an isolated technological achievement lends decisive advantage in tactical engagements. Rather, technological innovations and choices shape the ways in which military organizations, and the broader defense-industrial complex, approach the prospect of war...

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Announcements & Events



U.S. Army Research Laboratory: Open Campus Open House

October 18—October 19, 2017

The U.S. Army Research Laboratory will hold its fourth Open Campus Open House October 18 - 19, 2017 at Aberdeen Proving Ground...



22nd Annual Expeditionary Warfare Conference

October 24—October 26, 2017

The NDIA Expeditionary Warfare Conference continues to serve as the premier venue for defense and industry expeditionary warfare leaders to assemble each...



Rotorcraft Structures & Survivability Technical Meeting

October 24—October 26, 2017

The theme of the planned 2½ day conference is “Innovative Structures and Survivability Solutions for Vertical Lift”...

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