

The Latest In Homeland Defense & Security News

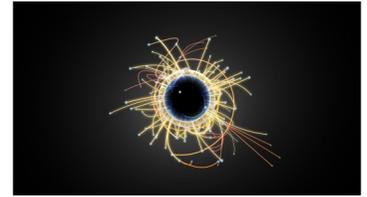
July 27, 2015

Highlight:

[Study Finds Metal Foams Capable Of Shielding X-Rays, Gamma Rays, Neutron Radiation](#)

Researchers have discovered that lightweight composite metal foams can

effectively block X-rays, gamma rays and neutron radiation, and can absorb the energy of high impact collisions. Applications of the lightweight composite metal foams include nuclear safety, space exploration, and medical technology.



Alternative Energy

[US Navy Eyes Graphene Nanoribbon For Ultimate Power Control System](#)

The Office of Naval Research has awarded a grant to investigate the use of graphene materials to increase the energy efficiency of a ship's power system.

[Boosting Gas Mileage By Turning Engine Heat Into Electricity](#)

Using strontium titanium dioxide and graphene, researchers have created a material that can capture and convert heat into electric current. The current application is the wasted heat from a running engine.

[New Battery Technologies Take On Lithium-Ion](#)

Two emerging technologies that may compete with the lithium-ion technology are sodium-ion technology and lithium-sulfur technology. The military is showing interest in the lithium-sulfur technology.

[Artificial Moth Eyes Enhance The Performance Of Silicon Solar Cells](#)

Researchers have increased the efficiency of solar cells by reducing the reflections with a new texturing method that mimics the surface of a moth's eye.

Biometrics

[CBP To Collect Fingerprint Data From Select Foreign Nationals Departing USA](#)

U.S. Customs and Border Protection (CBP) will begin a new initiative, beginning with the Hartsfield-Jackson Atlanta International Airport, that will last through at least June 2016. Biometric data will be collected from select foreign nationals departing from the U.S.

[Fingerprint Accuracy Stays The Same Over Time: Study](#)

According to a recent study, fingerprint recognition accuracy does remain stable over time. The study was based on the examination of fingerprint records of subjects apprehended multiple times by the Michigan State Police.

[Pentagon To Issue New Building Access Cards That Require Fingerprint And Iris Images](#)

The Pentagon has slowly been adopting biometric technology to authenticate employee identity and is issuing new building access cards for non-Common Access Card users. Images of the iris and fingerprints will be taken of each applicant.

CBRN

[House Hearing Looks At DHS Preparedness Against WMD Threats](#)

"Testimony from the hearing indicates that DHS is planning to bring CBRNE operations together into one office to streamline operations that are currently performed in several offices, including the Office of Health Affairs, the Domestic Nuclear Detection Office and parts of the Science and Technology Directorate."

[How Antimatter Could Stop Iran From Cheating On The Nuclear Deal](#)

Researchers are developing an antineutrino detector that could monitor the core of a running nuclear reactor and measure the plutonium content in situ.

[ECBC Fast Tracks Explosive Detector For Warfighters](#)

A screening kit has been developed that rapidly detects bulk solids or traces of homemade explosives (HMEs) including the oxidizers and fuel.

Critical infrastructure

[First-Of-Its-Kind Tornado Panels Installed In Montgomery Home](#)

Tornado panels, approved by the National Storm Shelter Association to withstand an EF5 tornado, have passed the first extreme test, the first time, at the NSSA/Texas Tech Debris Impact Test Facility.

[USDA and NASA Expand Innovative Partnership to Better Predict Wildfires, Monitor Drought From Space](#)

The United States Department of Agriculture (USDA) and the National Aeronautics and Space Administration (NASA) have expanded their partnership to protect the infrastructure through various studies such as soil moisture sensors, and drought early warning systems.

[Gap protection: FERC proposes cyber secure revisions to CIP Standards](#)

"The Federal Energy Regulatory Commission (FERC) has proposed revisions to critical infrastructure protection (CIP) Reliability Standards to improve the cyber security of the bulk electric system. The proposed standards address risks to communication networks and related bulk electric system assets and the development of standards for supply chain management security controls to protect the bulk electric system from security vulnerabilities and malware threats."

[Army Investigating Fault For Accidental Anthrax Shipments](#)

An internal review of how an Army lab accidentally shipped live samples of anthrax to laboratories in the U.S. and seven countries revealed that there is no national standard on killing anthrax spores, and there were errors in the verification tests that confirmed the amount of killed anthrax spores in the samples.

Cultural Studies

[How Severe Is The Terror Threat In East Africa?](#)

al-Shabab continues to recruit heavily amongst Kenyan Muslim communities and there is concern of expansion in Tanzania and East Africa.

[Organised Crime In Bulgaria And Romania Persists. Cyber Crime And People-Smuggling To Increase In Two-Year Outlook](#)

Organised crime and corruption are one of the largest challenges in Bulgaria and Romania. Human trafficking has been added to the list of corrupt activities - arms and consumer goods smuggling, and drug trafficking.

[Millions Displaced As A Result Of Climate-Related Disasters. Building In Hazard-Prone Areas](#)

"Today, the likelihood of being displaced by a disaster is 60 percent higher than it was four decades ago." In 2014, 19.3 million people were forced to flee their homes due to disasters.

Homeland Defense and Security

[Envisioning The Next Generation First Responder](#)

The Department of Homeland Security Science and Technology Directorate's

(S&T) Next Generation First Responder (NGFR) Apex team "is working with first responders to develop new technologies to make them better protected, connected and fully aware."

[Submarine Launches Undersea Drone In A 1st For US Navy](#)

For the first time, the U.S. Navy launched from a submarine, and recovered an unmanned undersea vehicle (UUV) in a military operation.

[Nanomaterials and UV light can "trap" chemicals for easy removal from soil and water](#)

Researchers have developed a method that uses nanoparticles and ultraviolet light to isolate and extract a variety of contaminants such as pesticides and endocrine disruptors from soil and water.

Medical

[Agent Orange Plus PTSD Equals Extra Dementia Risk](#)

After examining the VA medical records of approximately 47,000 Vietnam veterans, over age 55, researchers found that veterans who were exposed to Agent Orange and had PTSD had an increased risk of dementia.

[New Burn Pit Report: Lung Disease, High Blood Pressure Common In Exposed Vets](#)

"Troops who worked at burn pits in Iraq and Afghanistan, as well as those exposed to multiple dust storms during war-zone deployments, have higher rates of common respiratory illnesses like asthma and emphysema, as well as rare lung disorders."

[Army Researchers Announce Promising Results With Experimental Marburg Drug](#)

The U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) and

Sarepta Therapeutics, Inc. have developed an experimental drug that protects monkeys from the Marburg virus and has the potential for human treatment.

[World's First Malaria Vaccine Gets Regulatory Go-Ahead, Faces WHO Review](#)

The European Medicines Agency (EMA) has indicated that the world's first malaria vaccine, Mosquirix, is safe and effective to use in babies in Africa. The World Health Organization is expected to assess the drug and make a recommendation in November.

WMD

[Add Missiles To The List Of Weapons You Can \(Sorta\) 3-D Print](#)

Through additive manufacturing, 80 percent of the parts of a guided missile have been successfully printed. The military is interested in the cost savings and the logistics of the new technology.

[U.S. Warns N. Korea Against 'Destabilizing Activities' Amid Missile Concerns](#)

The Department of Defense said North Korea's "continued development of its ballistic missile program and related activities constitute clear violations of multiple U.N. Security Council resolutions."

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