



ELECTROBUZZ

ELECTRONIC DEPARTMENT

MAGAZINE

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Department of Electronics Engineering



Vidya Vikas Education Trust's

Universal College of Engineering

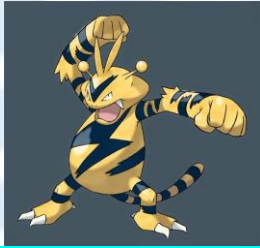


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HOW SCIENTISTS ACTUALLY DISMANTLE A NUCLEAR BOMB

There are enough nuclear weapons in the world to cause atomic Armageddon many times over, according to scientists, who estimate that no country could fire more than 100 nuclear warheads without wreaking such devastation that their own citizens back home would be killed. North Korea, on the other hand, while notoriously difficult to predict, could eventually scale back its nuclear program if its diplomatic rapprochement with the West continues.



Nuclear disassembly is a coordinated process, which involves politicians, scientists and engineers working together. It all begins with the blueprints that designers used to build the weapon in the first place, according to experts. To unpick a nuclear device, engineers need to know the exact sequence in which the pieces were originally put together. But the more sophisticated and destructive hydrogen bombs that the Americans, British, Chinese, French and Russians possess is a different story. Other experts agree that unpacking the design is the most challenging part of the process. It would be significantly harder and therefore less likely that a team of engineers could disassemble a hydrogen bomb without knowing the

exact design sequence, but still not technically impossible. But a country, knowing its own design, should be able to disassemble its own modern nuclear weapons, and many have. As of 2014, the U.S. had dismantled 85 percent of its declared stockpile of nuclear weapons since 1967 when it had more than 31,000 war-ready nuclear warheads, according to the U.S. Department of State. Current dialogue between Pyongyang and Washington has enough political will to see the Korean peninsula through to denuclearization.

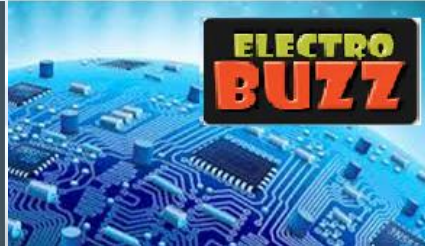
What do you do with the leftover uranium or plutonium?

“When the great powers decided to reduce their stockpiles, we were left with fairly substantial quantities of plutonium,” said Rosner. “So, what do you do?”



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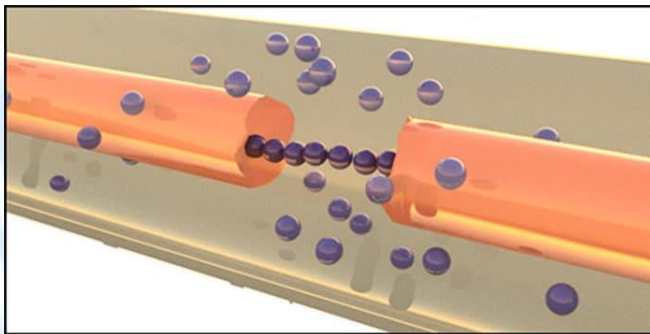
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One obvious answer is to repurpose the radioactive material — either plutonium or uranium — to produce electricity. To make it suitable for a power plant, the material needs to be diluted with less enriched versions.

It's not always economically viable. It can be cheaper to enrich new material than it is to downgrade it and repurpose it. Shipping plutonium or uranium all over the place from storage to reactor isn't popular either. Decommissioning the radioactive waste and keeping it safe is a science in its own right. The extracted uranium or plutonium will contain different isotopes — variants of themselves that have different atomic masses, which means their radioactivity decays at different rates. The highly radioactive isotopes have short half-lives, which means they decay much faster than the less radioactive ones, and that creates a lot of heat. The less radioactive isotopes are slower to decay, which presents its own problem. Hence need to store the radioactive rods in specially designed containers, often called "dry casks. These vessels are usually made from steel and welded shut to prevent leaking. Each of the casks is then encased in another steel shell and then in a thick layer of concrete to prevent radiation escaping. Governments will be keeping it somewhere safe in case they want to reuse it or in case a terrorist tried to get hold of it. That's why a third option has become more popular in recent years: partial disassembly. After all, unless the bomb is detonated, the nuclear material inside is in a steady and contained state — partial disassembly keeps it there while removing the opportunity for the bomb to be used. But partial disassembly is reversible; the trigger can be put back in and the warhead can therefore be reactivated.

SELF HEALING ELECTRONICS

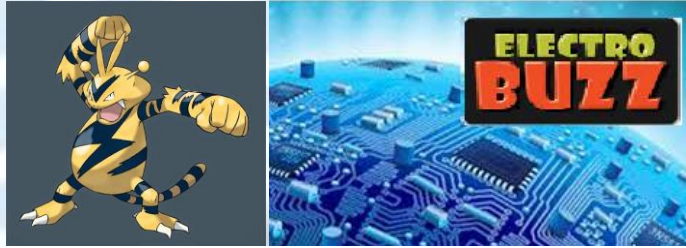


Flexible substrates and semiconductors could lead to electronic devices such as wearable medical diagnostic devices and roll-up displays. However, the thin wires linking different circuit components in existing flexible electronics are prone to breakage when bent, making them unreliable. The scientists Amit Kumar and Sanjay Sambandan of the Indian Institute of Science, Bengaluru, in collaboration with scientists from the University of Cambridge,

have found a way for damaged electronic circuits to repair themselves. In a paper published in a recent issue of "Physical Review Applied", the researchers reported that a suspension of copper particles could fix breaks in electronic connections.

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Unlike previous such techniques, this method does not require rare materials or the addition of complex circuitry. The idea is based on submerging a circuit connection in a solution containing suspended copper microspheres. If the connection gets broken, an electric field will cause the copper spheres to form chains that bridge the gap. The current flowing through the chains will then heat and sinter them, creating a stable wire that heals the connection. In contrast to the reconnections produced by other self-healing experiments, the copper-sphere patch is both flexible and stretchable

VIVO ANNOUNCES TO EMPOWER GAMERS' CONQUEST AT PUBG MOBILE CLUB OPEN 2019 BY TENCENT GAMES AND PUBG CORPORATION

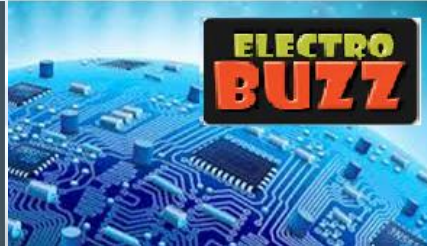


Vivo announced the partnership with the world's leading mobile game- *PlayerUnknown's Battlegrounds Mobile (PUBG MOBILE)* by Tencent Games and PUBG Corporation as the title sponsor of the upcoming PUBG MOBILE Club Open 2019, one of the biggest mobile gaming tournaments in the world. Vivo will provide the official smartphones for the PUBG MOBILE Club Open 2019, which players from ten regions across the globe will be leveraging to battle their way through the Spring & Fall Split, for the total prize pool of \$2.5M USD. This global partnership reinforces Vivo's commitment to bringing an ultra-smooth

gaming experience to connect with consumers through meaningful partnerships.

Vivo thrives to be at the forefront of the eSports industry to best serve its consumers. The partnership with *PUBG MOBILE* is a key milestone especially given that it is a leading mobile game developed by Tencent Games and PUBG Corporation that has over 200 million fans per download excluding China, Korea, and Japan. As one of the biggest mobile gaming tournaments in the world, PUBG MOBILE Club Open 2019 is a strong opportunity to showcase Vivo's vision of 'enjoying the extraordinary' by bringing global players a true gaming experience like no other. This global partnership will unfold and strengthen Vivo's position in being an innovative and stylish brand that always puts our consumer experience first.

The PUBG MOBILE STAR CHALLENGE 2018 was watched by over 230 million viewers and drew in over 5,000 live attendees at the global finals in Dubai. The qualifying round of PUBG MOBILE Club Open 2019 will begin on March 22, 2019. The Spring Split Global Finals will be hosted in July this year, with the Fall Split Global Finals following in December.



“We are excited to partner with Vivo, as they have a strong reputation in being innovative and putting the consumer’s needs first. As an innovative brand ourselves, this partnership highlights our dedication to bring the best experience possible to our players and fans around the world. This partnership is just the beginning, we want to continue building a strong portfolio of partnerships with industry-leading companies, such as Vivo, to provide the best mobile gaming experience possible,” said Vincent Wang, General Manager of Global Publishing Department, Tencent Games.

IPL 2019: OPENING CEREMONY CANCELLED, MONEY TO BE GIVEN TO FAMILIES OF PULWAMA MARTYRS

The IPL will not have an opening ceremony this year after the **Committee of Administrators (CoA)** running Indian cricket Friday decided to allocate the money set aside for it to the families of the CRPF personnel killed in the Pulwama terror attack.

The opening ceremonies of the cash-rich T20 league are heady mix glitz and glamour with performances by Bollywood stars being the highlight. However, as a mark of respect to the slain CRPF men, it has been decided to scrap the ceremony for the event’s 12th edition beginning March 23.

“We will not have any inaugural function for the IPL and the money budgeted for that goes to the martyrs’ families,” said Committee of Administrators chairman Vinod Rai.

The CoA took the call at a meeting here on Friday.

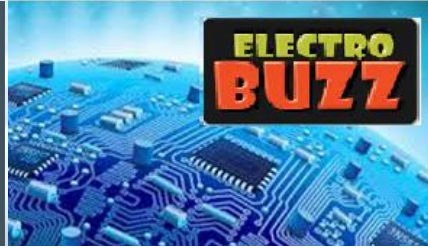
The Pulwama attack took place last week and its reverberations are being felt in the sporting arena as well. There has been a call to snap sporting ties with Pakistan. The Rai-led CoA decided against taking any stand on the World Cup clash against Pakistan but said it would individually urge ICC members to ‘sever ties with any nation that is a terrorist hub’.



INSTITUTE OF ENGINEERING AND TECHNOLOGY

EXTC and Electronics department under co-ordination of Mrs. Neelam Bhoi has organized an event PATW (university level) and workshop on "Basics of IOT" under IET for students of all departments providing a platform to young minds to explore and showcase their knowledge.





ACHIEVEMENTS

S.B Jain Institute of Technology, Management & Research has organized LUMINO NATIONAL LEVEL TECHNICAL HACKATHON. Students of second year from Electronics department implemented and presented “Smart Illumination System” and won first prize.



Winers of Lumino National Level Hackathon



Certificates and Prize

Akshay Mahesh Laddha has been selected for IEEE WIE International Leadership Conference in Austin, Texas, USA.