



Vidya Vikas Education Trust's

Universal College of Engineering

Gujarati Linguistic Minority Institution

"B+" NAAC Accreditation



An Initiative By



Department of Information Technology

#Satyavachan

" OUR GREATEST
WEAKNESS LIES IN
GIVING UP.
THE MOST CERTAIN
WAY TO SUCCEED
IS ALWAYS TO TRY
JUST ONE MORE
TIME."

-THOMAS A EDISON

Highlights

CONTENTS

- 1 | Technical Article
- 2 | Non-technical Article
- 3 | Achievements
- 4 | Upcoming events

❖ Designed By :

1. Ankita Metrani
2. Aparna Sudhir

Compressed Air in Underground Rocks Could Be the Next Batteries

"Researchers are pushing for a new kind of energy storage based on compressed air. Using renewable energy, the tech would pump air into underground rocks in the North Sea, and it would power turbines when released."

With reports about climate change becoming increasingly dire, it's increasingly important to find an eco-friendly way to not only generate energy, but also store it. The bottle is a layer of porous rocks deep within the sea bed, and the energy comes from compressed air. You simply use your renewable energy source to compress and store the air, and then when you need the energy again you pop the cork, so to speak, and let the escaping air drive a turbine that re-generates the electricity.

The researchers unveiled the details behind the plan, dubbed porous media compressed air energy storage (PM-CAES). This mix of technologies could seriously make a dent in a country's energy production — and mitigate the trends that are pushing the global climate to extremes.

Compressed Air of Superiority

Though the plan is only theoretical yet, the researcher's results show that PM-CAES is a potentially viable large-scale inter-seasonal electricity storage technology. Because the physical infrastructure involved is mostly just underwater rock — plus a fairly small surface plant to pump the compressed air down and bring it back up to generate electricity — PM-CAES would benefit regions with limited land surface or water resources. Germany and the U.S. both have CAES energy plants in place that store compressed air in old salt mines.

Solutions Needed

To get to that level of efficiency, the system would need about 7,000 new wells. This is an issue because more than 40 years of oil drilling in the North Sea has produced only about 11,000 wells. Any changes to a country's power production requires considerable investment.

If we're going to get serious about curbing the effects of global warming, and lessening the emissions rates of our basic electrical needs, this certainly seems an approach worth considering. The authors point out more research could start selecting specific sites within the North Sea's rocks, and that no other energy storage technology — from pumped hydro storage to classical batteries — quite works on the scale and efficiency of PM-CAES.

Basically, it's just a matter of wanting it enough. With any luck, these geoscientists will hit rock bottom before our environment does.

Ref: <http://blogs.discovermagazine.com/dbrief/2019/01/22/compressed-air-in-underground-rocks-could-bethenextbatteries/#.XFECnSzoQo>

– Mr. Sandesh Patil

Can the upcoming E-commerce trends supersede the other technological trends in 2019?

We are in 2019 era where it's easier to set up a business much than ever before. The entrepreneurship in today's time is accentuated by growth of e-commerce and ever growing technological trends thanks to widespread use of internet and its intervention around the globe. Statistical analysis reveal that world-wide commercial sales have reached a whopping amount of \$3.3 trillion. With umpteen number of opportunities it wouldn't be difficult for e-commerce to set up the life of entrepreneurs and be the Center of attraction. Let's have a look at some of the upcoming E-commerce trends:

1. Omni-channel –The seamless User Experience:

Vast majority of brands are working on to create Omni-channel experience for customers. It mostly works by implementing a multi-channel approach for serving customers, selling customers and marketing in a way that customer's world over have a unified experience. They are connected across all platforms no matter whichever way the customer reaches out to company.

2. Social Commerce- The Meeting point:

The maximum growth in retail sector is seen in digital market. IOT will lead technological advancements with physical devices taking center stage through implementations of smart buttons or VoIP. IOT will aid in services like inventory and supply chain management.

3. Block Chain- Designed for E-commerce:

These mainly store transnational data. They are an alternative payment method for secure transactions where it can also improvise order fulfillment and shipping tracking. Block chains are already being worked upon by future leaders as platform for future trend.

Ref: <https://www.indianretailer.com/article/multi-channel/eretail/E-commerce-Technology-TrendsThatWillTakeCenterStageIn2019.a6279/>

Types of Network Security

Access control:

Not every user should have access to your network. To keep out potential attackers, you need to recognize each user and each device. Then you can enforce your security policies. You can block noncompliant endpoint devices or give them only limited access. This process is network access control (NAC).

Application security:

Any software you use to run your business needs to be protected, whether your IT staff builds it or whether you buy it. Unfortunately, any application may contain holes, or vulnerabilities, that attacker can use to infiltrate your network. Application security encompasses the hardware, software, and processes you use to close those holes.

Behavioral analytics:

To detect abnormal network behavior, you must know what normal behavior looks like. Behavioral analytics tools automatically discern activities that deviate from the norm. Your security team can then better identify indicators of compromise that pose a potential problem and quickly remediate threats.

Data loss prevention:

Organizations must make sure that their staff does not send sensitive information outside the network. Data loss prevention, or DLP, technologies can stop people from uploading, forwarding, or even printing critical information in an unsafe manner.

Firewalls:

Firewalls put up a barrier between your trusted internal network and untrusted outside networks, such as the Internet. They use a set of defined rules to allow or block traffic. A firewall can be hardware, software, or both. Cisco offers unified threat management (UTM) devices and threat-focused next-generation firewalls.

Ref: <https://www.cisco.com/c/en/us/products/security/whatisnetworksecurity.html>

-Mrs. Yogita Mane

GREATEST BRAINTEASERS FOR ENGINEERS

1. How many zeros?

Brainteaser: How many zeros are in 5!

Answer:1

Workings: 5! means: The factorial of 5 i.e., 120. (5 x 4 x 3 x 2 x 1)

Apparently a favorite during an interview for a systems engineer at Google. Google suggests it might be easier to think of how many times a ten would be produced doing the sum, rather than the actual correct answer.

2. Trail by bikes

Brainteaser: There are 50 bikes with a tank that has the capacity to go 100 km. Using these 50 bikes, what is the maximum distance that you can go?

Answer: 350 km

Workings: Each tank has a 100 km capacity and they are all in the same place. You could set all 50 bikes off but they'd all only travel 100 km. Now, one solution would be to move all bikes 50 km. Then empty half the bikes' fuel tanks into the other to fill them up. Keep doing this until you have 1 bike with a full tank to finish the trek. Of course, you'll have the odd bike stranded when dividing odd numbers. This way you'll get the last bike of the 50 to have travelled 350 km in total. Nice.

3. Wasting water

Brainteaser: If you had an infinite supply of water and a 5-liter and 3-liter bucket, how would you measure exactly 4 liters? The buckets do not have any intermediate scales

Answer: A lot of wasted water

Workings: Fill the 5-liter bucket first. Then using that bucket fill the 3-liter bucket being careful not to spill any. This leaves 2 liters in the 5-liter bucket. Now chuck away the water in the 3-liter bucket and refill with the remaining contents of the bigger bucket. Once again fill the 5-liter bucket and fill the second 3-liter bucket. This will leave you 4 liters in the 5-liter bucket. Simple!

Achievements

Yet Again, We have three students who have made our department proud.

Three of our students from IT had got the opportunity to represent our college at the selection round of 13th Inter-Collegiate **Avishkar** Research Convention: 2018-2019 by the University Of Mumbai, Department of Students Development held at Ramrao Adik Institute Of Technology, Nerul, Navi Mumbai on **23rd December 2018** under the category of 'Engineering & Technology'.



The Students- **Sanchit Shinde, Siddhesh Gurav & Neeraj Golda** (L to R) under the mentoring of **Ms. Mudra Doshi** presented a Research Project Titled **Parking Reservation System using IOT** in 'UG' Level.

We congratulate the students and their mentor on their research and hope to see such innovative ideas again and inspire all the students to do the same.

AURORA 2019

Universal College Of Engineering celebrated its intra-collegiate sports-cum-cultural festival, Aurora from the 5th of January to the 11th of January 2019. It included various sports events and Cultural activities like Chess, Drama, Cricket and many more.



Sports

2. Aba Dhubi
BE IT :
WINNER

3. Shot Put
Yash Maniar:
1st RUNNER UP

4. Chess
Prince Patel:
WINNER

6. Carrom

WINNER -
Sameer Wagh

1st RUNNER UP-
Raj Malde

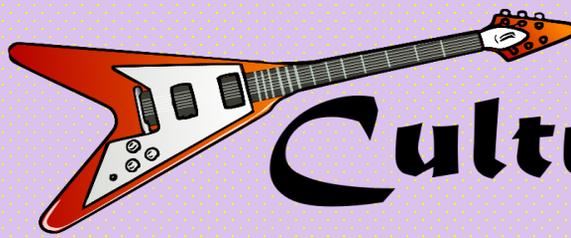


1. Boys' Cricket
BE IT : 1st RUNNER UP

Girls'
5. Box Cricket &
6. Dodge Ball
BE IT : WINNER

7. FOOTBALL
SE IT :
1st RUNNER UP





Cultural

MR. AURORA :
YASH Maniyar

RANGOLI

APEKSHA
WAREKAR



POOJA
PARIHAR



Drama
SE & BE IT : 1st RUNNER UP

SOLO SINGING
Rahul
Karekar
WINNER



COOKING
WITHOUT FIRE
Sarita Shetty :
1st RUNNER UP



GROUP
SINGING
SE & BE IT:
WINNER



Congratulations
to all the
Participants



#Hack-Stomp



Vidya Vikas Education Trust's

Universal College of Engineering

Gujarati Linguistic Minority Institution

Accredited with B+ Grade by NAAC



DEPARTMENT OF INFORMATION TECHNOLOGY

UNDER **ITSA** PRESENTS

HACK-STOMP

2018-19

FEB 15-16

INNOVATION FOR INDIA

HACK FOR 24HRS

1ST PRIZE - 5000 ₹

2ND PRIZE - 3000 ₹

3RD PRIZE - EXCITING

PRIZES

Goodies worth Rs. 1000 + Internship Offers

SCAN QR CODE
FOR MORE INFO



For more information about
this event, please contact:

Mudra Doshi (Faculty Incharge) +91 9029652532

Chintan Popat (Student Incharge) +91 9653544098

Hey Innovators! Universal College of Engineering , ITSA presents Hack-Stomp. A 24 hours coding Competition. A chance to showcase your ideas to Innovate India.

Registration link: <https://bit.ly/2Muq4kB>

Theme: Innovation for India

Entry Fee per Person: Rs. 100 (Paytm or Cash)

Event Date: 15 & 16 Feb 2019

What's up for Grabs:

Cash prizes up to Rs. 8,000

Exciting Goodies + Internship Offers