



ISRO'S PSLV-C51 PUTS BRAZIL'S AMAZONIA-1 SATELLITE INTO ORBIT



This satellite would further strengthen the existing structure by providing remote sensing data to users for monitoring deforestation in the Amazon region and analysis of diversified agriculture across Brazil. ISRO PSLV-C51 PSLV-C51 official image from ISRO/Twitter KEY HIGHLIGHTS PSLV-C51 blasted off from the first launch pad, laden with 19 satellites including Amazonia-1. Amazonia-1 is the optical earth observation satellite of National Institute for Space Research (INPE). India's first space mission for 2021 is one of the longest for a PSLV rocket. The rocket slowly gained speed as it went up while emitting a rolling thunder sound. Seventeen minutes into its flight the rocket slung its primary passenger the Brazilian satellite Amazonia-1 - the first of the 19 satellites - into its intended Sun Synchronous Orbit. This satellite would further strengthen the existing structure by providing remote sensing data to users for monitoring deforestation in the Amazon region and analysis of diversified agriculture across the Brazilian territory, Indian Space Research Organisation (ISRO) said. India's first space mission for 2021 is one of the longest for a PSLV rocket is expected to conclude 1 hour, 55 minutes and 7 seconds into its flight. The rocketing is a fully commercial one of NewSpace India Ltd (NSIL).

For more details: <https://bit.ly/3gbAWmJ>

YEDUNANDAN K, S2

INTERNET OF BEHAVIOUR (IoB)

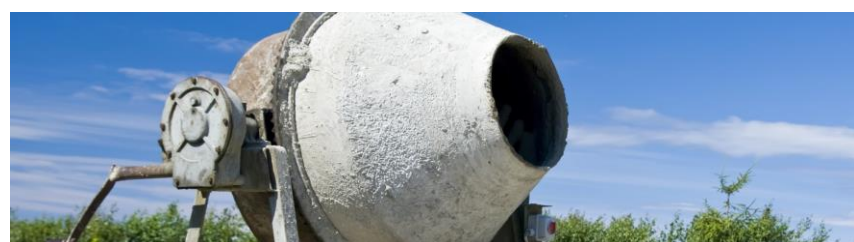


The Internet of Things (IoT) is a network of interconnected physical objects that collect and exchange information and data over the Internet. The IoT is constantly expanding and evolving in the scope of its complexity, i.e. the way in which devices are interlinked, the computations that can be processed by these objects autonomously and the data that is stored in the cloud evolve in a more complex way. Data collection (BI, Big Data, CDPs, etc.) provides valuable information about customer behaviours, interests and preferences, and this has been referred to as the Internet of Behaviour (IoB). The IoB attempts to understand the data collected from users' online activity from a behavioural psychology perspective. It seeks to address the question of how to understand the data, and how to apply that understanding to create and market new products, all from a human psychology perspective. The purpose of the IoB is to capture, analyse, understand and respond to all types of human behaviours in a way that allows tracking and interpreting those behaviours of people using emerging technological innovations and developments in machine learning algorithms. People's behaviours are monitored and incentives or disincentives are applied to influence them to perform towards a desired set of operational parameters. What is really relevant about IoB is that it is not only descriptive (analysing behaviour), but proactive (detecting which psychological variables to influence to bring about a certain outcome).

For more details <https://www.vectoritgroup.com/en/tech-magazine-en/user-experience-en/what-is-the-internet-of-behaviour-iob-and-why-is-it-the-future/>

AKSHAY M, S2

GRAPHENE- ENHANCED CONCRETE COULD SAVE CASH AND PLANET

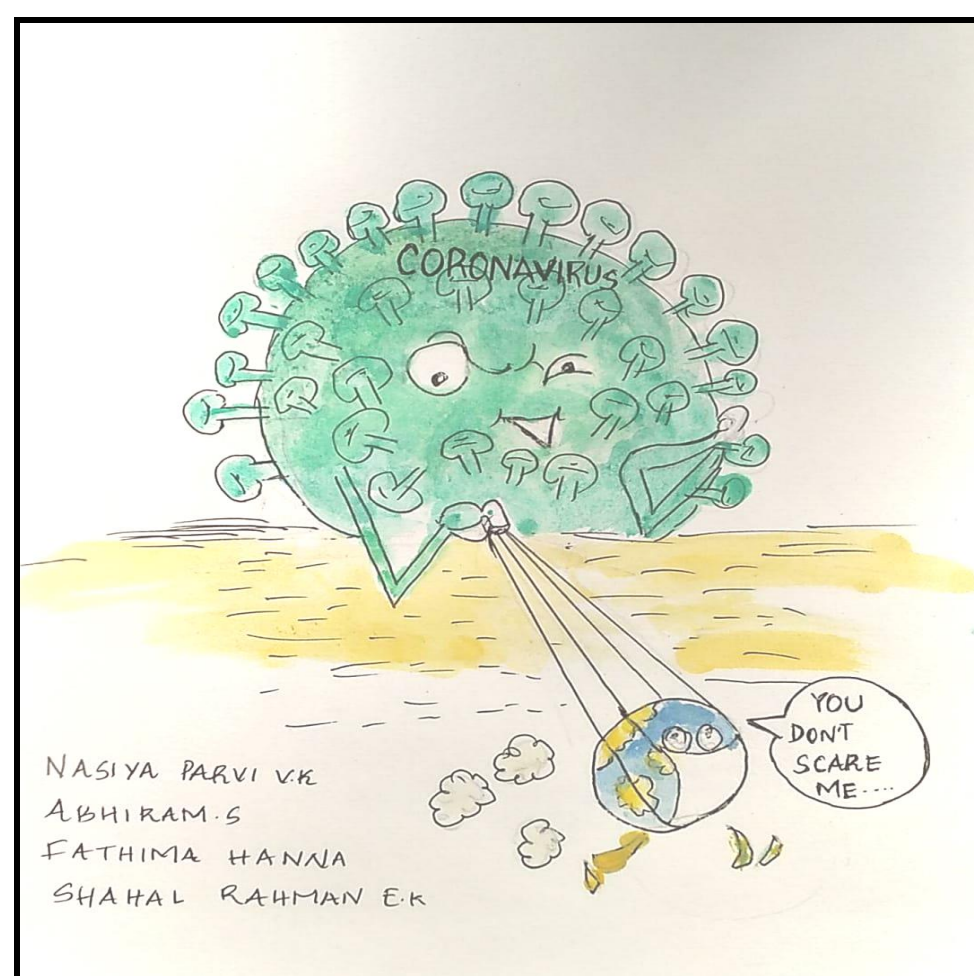


The addition of tiny amounts of graphene - a so-called '2D material' made of a single layer of carbon atoms - strengthens Nationwide Engineering's new product, Concretene, by around 30 per cent compared to standard concrete, meaning significantly less is needed to achieve the equivalent structural performance, reducing carbon footprint and costs. The additional strength also reduces the need for steel reinforcement, saving material and time on site and further promoting the green credentials of this building method. Nationwide Engineering estimates that an additional cost of 5 per cent for Concretene will be offset by the reduction in material to deliver an overall saving of 10-20 per cent over standard RC30 concrete. Traditional liquid concrete sets into its solid form through chemical reactions known as hydration and gelation, where the water and cement in the mixture react to form a paste that dries and hardens over time. Graphene makes a difference by acting as a mechanical support and as a catalyst surface for the initial hydration reaction, leading to better bonding at microscopic scale and giving the finished product improved strength, durability and corrosion resistance.

For more details: <https://eandt.theiet.org/content/articles/2021/05/graphene-enhanced-concrete-could-save-cash-and-planet/>

ASWIN MANOJ, S2

CARTOON CORNER



ROBOTIC THIRD EYE



The robotic third thumb designed by Clode is 3D-printable and controlled by a pressure pad beneath the sole of the wearer's foot. The high tech finger is worn opposite the natural thumb, below the pinky finger. Clode's design proved ideal for a team of neuroscientists to use to learn about how our human brains interact with augmentation devices. Aside from learning to use the thumb, the subjects were also subjected to an fMRI test to examine their brain's adaptation to the robotic third thumb. The scans were performed without the robotic addition. They found that on the relevant hand, the brain seemed to "view" the fingers as more alike than on a hand which had never held the helpful third-thumb. These changes in the sensorimotor cortex were subtle, the team reported. By about a week later, the differences had largely subsided in a second scan. While our brains seem to adapt quickly to robotic augmentation of our human body, these neural changes might require sustained use of the augmentation to be maintained. These study the value of neuroscientists working closely together with designers and engineers, to ensure that augmentation devices make the most of our brains' ability to learn and adapt, while also ensuring that augmentation devices can be used safely.

For more info: <http://mymodernmet.com/brain-adapts-to-robotic-thumb/>

ABIJITH, S2

MOBILE APP TO LOCATE CORONA VIRUS

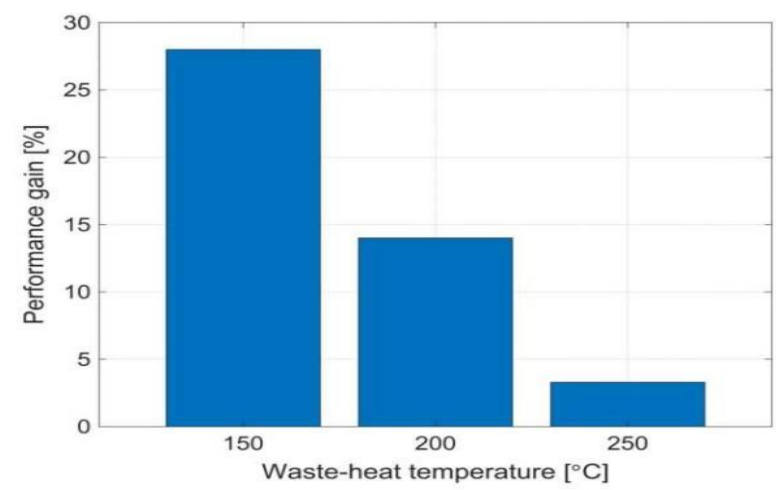


IIT Roorkee develops mobile app to locate Corona virus suspects. It has developed a mobile tracking application endowed with state of the art features to boost government efforts for the surveillance of Corona virus suspects. The app can track Covid-19 suspects who have been quarantined through geofencing technology. Prof. Kamal Jain, department of Civil engineering has developed the tracking mobile application. The app can check the movement of individuals and also can do geofencing around them. He said that the tracking system allows for state-of-the-art surveillance during Covid-19. Besides facilitating quarantine management, it helps to overcome overcrowding at any location by issuing an alert to the predefined agency. In case GPS data is not received, the location will be obtained automatically through the triangulation of mobile towers. If the internet is not working in a certain area, the location will be received through SMS. If the application gets off, an alert will be received immediately, read the statement. The location of the person can be received by sending an SMS to the device. It allows the sharing of quarantined persons/ places photographs on a Google map, uploading geotag image to server. The administrator can also view the entire movement history of an individual. The app also includes multi camera support, surveillance magnetic device, halt time and auto camera click on present time.

For more details: <https://m.economictimes.com/tech/software/iit-roorkee-develops-mobile-app-to-locate-coronavirus-suspects/articleshow/75012827.cms>

ANVYA, S2

USING WASTE HEAT TO POWER AN ENVIRONMENTALLY SUSTAINABLE FUTURE



In most of recent published research, in *Applied Thermal Engineering*, City, University of London's Dr. Martin White exploring a novel organic Rankine cycle system, based on a two-phase expansion through numerical simulations of the system. A paper on, "Cycle and turbine optimisation for an ORC operating with two-phase expansion," considering the use of modern fluids whose properties could help to mitigate concerns around turbine damage, at the same time as allowing the benefits of two-phase expansion to be realized. Waste heat from a variety of industries, ranging from iron and steel to food and drink, is currently ejected into the environment. Thus, the recovery of this wasted energy could have a significant role in reducing the environmental footprint of the manufacturing sector and help to ensure future manufacturing practices are sustainable.

Dr. White, a lecturer in [thermal power](#) in the School of Mathematics, Computer Science and Engineering, also denotes One of the most promising groups of waste-heat recovery technologies are those that are able to convert this waste heat into electricity. However, current technologies, typically based on the organic Rankine cycle (ORC) - which is similar to a steam [cycle](#) but operates with a different fluid rather than water—typically have relatively poor thermodynamic performance and are associated with high costs.

For more details: <https://techxplore.com/news/2021-05-power-environmentally-sustainable-future.html>

AMRUTA K W, S4

TECH NEWS PUZZLE #2

D	F	H	G	B	E	J	X	W	P
G	W	A	L	B	W	W	S	R	D
N	K	Y	N	K	N	I	V	E	S
E	I	A	M	R	F	E	E	F	B
G	R	A	P	H	I	T	E	I	E
C	A	G	C	R	E	M	P	N	U
M	A	T	Y	L	O	Z	R	I	Y
C	H	O	N	A	Y	N	T	N	C
A	F	A	T	I	G	U	E	G	E
S	Y	A	N	M	R	V	Q	P	U

CLUE #2

- (1) Device that the molten slag flows across on its way from the spout to the doughnut. It is cooled by water spray.
- (2) The polymorph of carbon with a hexagonal crystal structure.
- (3) The removal of impurities and metallic oxides from the molten bath by the reaction of the slag and other additions.
- (4) Circular metal discs that rotate on the slitter to side trim a coil to customer's spec. The distance between them determines the width of the coil.
- (5) The phenomenon leading to fracture under repeated or fluctuating stresses.

Prepared by DANISH, S2

Mail your answers to: sandhvedavyasa@gmail.com

PREVIOUS PUZZLE #1 ANSWER

- (1) Agitator
- (2) Calliper
- (3) Pouring
- (4) Kaolin
- (5) Crib
- (6) Structure

PUZZLE #1 WINNERS

Raneesha S6 CSE VVIT
Sneha Sunil S6 ME VVIT
Vyshnav S6 CIVIL VVIT
Aswathi S D Sarvodaya HSS Wayanad
Athulya K Pattambi
Reshma C K UL Cyberpark Calicut

Congratulations to all !!!

H	Y	K	A	O	L	I	N	T	A
M	S	S	Q	L	G	J	E	A	B
O	W	T	N	Q	B	P	S	G	T
K	G	C	R	V	O	G	X	I	K
C	P	C	I	U	R	N	D	T	I
C	T	Y	R	A	C	O	D	A	J
X	Y	I	I	I	H	T	E	T	M
D	N	S	G	M	B	T	U	O	V
G	C	A	L	L	I	P	E	R	W
T	X	Q	S	E	R	D	F	Q	E