

Science and Technology

Ocean mean temperature can better predict Indian summer monsoon

- Scientists from Pune’s Indian Institute of Tropical Meteorology (IITM) find that ocean mean temperature (OMT) that has better ability to predict this than the sea surface temperature. Success rate of predicting the Indian summer monsoon, OMT has 80% success rate.

Sea food waste prevents steel corrosion

- Researchers from Indian Institute of Technology (BHU), Varanasi, have successfully produced a chitosan-based corrosion inhibitor that shows over 90% efficiency.

Aptamer inhibits TB bacteria entry into cells

- A small single-stranded DNA molecule (DNA aptamer) that specifically binds to a single protein (HupB) present in TB bacteria, researchers have been able to achieve 40-55% reduction in the bacteria’s ability to enter into human cells and infect them.

India joins elite group of countries capable of Air-to-Air fuel transfer

- The first ever mid-air refuelling of the indigenously developed light combat aircraft Tejas(LCA Tejas MK-1) was successfully carried out, placing India in an elite group of countries having air-to-air refuelling capacity for military planes.

Apsara – U Reactor

- “Apsara”, the first research reactor in Asia became operational in Trombay campus of Bhabha Atomic Research Centre in August 1956. Nearly sixty-two years after Apsara came into existence, a swimming pool type research reactor “Apsara-upgraded”, of higher capacity was born at Trombay on 10th September 2018

U.K. physicist donates \$3 mn prize to boost diversity

- Jocelyn Bell Burnell, one of Britain's leading astrophysicists is donating her \$3 million purse from a major science prize to encourage diversity in physics.

Government prohibits 328 Fixed Dose Combinations drugs for human use

- Government has prohibited the manufacture, sale or distribution of 328 Fixed Dose Combinations (FDCs) for human use with immediate effect.

Medical Cyclotron Facility Cyclone-30 Became Operational

- Cyclotrons are used to produce radioisotopes for diagnostic and therapeutic use for cancer care. Cyclone-30, the biggest cyclotron in India for medical application became operational at Variable Energy Cyclotron Centre (VECC), Kolkata.

5.1 Inventions / Discover**Drug target for neurodegenerative diseases and cancer discovered**

- Bhubaneswar-based researchers have discovered that activation of a particular protein (TRIM16) can turn out to be a potential therapeutic intervention strategy for neurodegenerative diseases such as Alzheimer's, Parkinson's and amyotrophic lateral sclerosis (ALS).

New device harvests energy from walking, jogging, say scientists

- Scientists have developed a wearable device that could generate energy from the swing of an arm while walking or jogging. The device, about the size of a wristwatch, produces enough power to run a personal health monitoring system.

IISER Bhopal develops organic solar cell using vitamin B12 derivative

- Researchers at the Indian Institute of Science Education and Research (IISER) Bhopal have developed cheaper and more flexible organic solar cells using a synthetic derivative of vitamin B12.

Electrochemical sensor detects dopamine, paracetamol

- A team from Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru, has come up with a nanocomposite material made of platinum-doped cerium oxide and cuprous oxide that works efficiently in electrochemical cells to detect dopamine and paracetamol levels, in combination, in spiked human urine and serum samples.

New device may help treat dizziness

- Scientists have developed a new vibrating device that is placed behind a patient's ear to diagnose dizziness.

Insect-inspired flying robot

- Scientists have now developed a novel autonomous flying robot named DelFly Nimble that mimics the rapid flight of insects.

IIT-incubated startup to roll out cheaper lithium batteries

- A startup incubated at Indian Institute of Technology-Hyderabad (IIT-H) has developed lithium batteries with wide applications in fields of agriculture and aerospace.

Amazon Alexa smart speakers

- Alexa is a voice-enabled platform led by artificial intelligence. Information and Broadcasting Minister Rajyavardhan Rathore launched All India Radio's streaming Services on Amazon's Alexa Smart Speakers in New Delhi.

IISc team finds new approaches to kill TB bacteria

- For the first time a protein (WhiB4) that condenses the DNA of TB-causing bacteria in response to oxidative stress has been found by a multi-institutional team led by Prof. Amit Singh from Indian Institute of Science (IISc), Bengaluru.

5.2 Space Science**France to provide life support and medicine for ‘Gaganyaan’ crew**

- The national human space mission ‘Gaganyaan’ will get French support in the form of life support and medicine for the Indian crew.

SpaceX announces new plan to send tourist around Moon

- SpaceX announced a new plan to launch a tourist around the Moon using its Big Falcon Rocket (BFR), a massive launch vehicle that is being designed to carry people into deep space.

PSLV-C42 launches 2 foreign satellites

- The Polar Satellite Launch Vehicle (PSLV-C42) of Indian Space Research Organisation (ISRO) successfully launched two satellites NovaSAR and S1-4- from the Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota.

NASA puts laser satellite in space to track ice loss

- NASA’s most advanced space laser satellite ICESat-2 launched on a mission to track ice loss around the world (Greenland and Antarctic sheets) and improve forecasts of sea level rise as the climate warms.

NASA's Hubble starts new mission to study early galaxies

- The Hubble Space Telescope has started a new mission to study six massive galaxy clusters that may help shed light on how the earliest galaxies evolved in the universe.

ISRO setting up launch pad for Gaganyaan mission

- The Indian Space Research Organisation (ISRO) is setting up a third launch pad at Sriharikota to undertake the Gaganyaan manned space flight programme.

Japan's Maezawa lands first SpaceX moon flight

- SpaceX, Elon Musk's space transportation company named its first private passenger on a voyage around the moon as Japanese billionaire Yusaku Maezawa.

Japan's two hopping rovers successfully land on asteroid Ryugu

- MINERVA-III (Micro Nano Experimental Robot Vehicle for Asteroid, the second generation) Two robotic rovers have become world's first to successfully land on the surface of an asteroid Ryugu by the Japanese space agency JAXA.

5.3 App/ Web Portal/ Toll Free**Coffee Connect and Coffee KrishiTharanga**

- The mobile app Coffee Connect has been developed to ease the work of field functionaries and to improve the work efficiency. The Coffee KrishiTharanga services are aimed at providing customized information and services to increase productivity, profitability, and environmental sustainability.

Siddhi

- An app unveiled by DestaGlobal, an agritech e-commerce company (Mumbai-based start-up), earlier this year is bringing farmers and dealers of agricultural equipment under one roof.

Aapoorti mobile app

- Piyush Goyal-led Railway Ministry has launched the Aapoorti mobile app of Indian Railways e-procurement system (IREPS) in a bid to provide information as well as data related to e-tendering and e-auction related activities of the national transporter.

Rail Sahyog web portal

- Rail Sahyog web portal will provide a platform for the Corporates & PSUs to contribute to creation of amenities at/near Railway Stations through CSR funds.

Google's 'Neighbourly' app

- Google will unveil its 'Neighbourly' app, to five more Indian cities. It helps users find answers to all types of questions such as shopping, fitness, food and tuition centres.

National Scholarship Portal Mobile App

- Minority Affairs Minister Mukhtar Abbas Naqvi launched the country's first National Scholarship Portal Mobile App in New Delhi for a smooth, accessible and hassle-free scholarship system for students belonging to poor and weaker sections.

NHA launches website, helpline number

- The National Health Agency (NHA), the apex body implementing the Ayushman Bharat– National Health Protection Mission (AB-NHPM), has launched a website and a helpline number.

‘e-Sahaj’ portal

- The Union Home Secretary Shri Rajiv Gauba launched an online ‘e-Sahaj’ portal for grant of Security Clearance.

‘Budget dashboard’

- In a bid to ensure transparency, the Ministry of Health has introduced ‘budget dashboard’, an internal web portal comprising information on budget, expenditure and bill payment positions.

Union Home Minister launches two portals to strengthen Women Safety

- **Cyber Crime Prevention against Women and Children (CCPWC) portal** – to check objectionable online content.
- **National Database on Sexual Offenders (NDSO)** – to aid in monitoring & investigation of sexual crimes

Jan Dhan Darshak

- Finance Ministry Launches Mobile Application “Jan Dhan Darshak” as A Part of Financial Inclusion.
- Mobile App to Provide Guidance to the Common People in Locating a Financial Service Touch Point at a Given Location in the Country.

Online software for Agmark

- Minister of Agriculture and Farmers’ Welfare Shri Radha Mohan Singh today launched the online software for Agmark and it is being implemented across the country to conduct quality control functions.
- The processing of Agmark certification application will be available 24×7

Logo and web portal launched for Gandhi's 150th birth anniversary

- President Ram Nath Kovind launched the logo and the web portal for the commemoration of 150th birth anniversary of Father of the Nation, Mahatma Gandhi, at Rashtrapati Bhawan.

C-DAC Information Media Server (CIMS)

- Shri S.S. Ahluwalia, Hon'ble Minister of State for Electronics and IT launches C-DAC Information Media Server (CIMS) for enhancing Good Governance.

Finance Minister launches web portal www.psbloansin59minutes.com

- The web portal www.psbloansin59minutes.com will enable in principle approval for MSME loans up to Rs. 1 crore within 59 minutes from SIDBI and 5 Public Sector Banks (PSBs).

DigiVaarta

- Digi VAARTA, is a Vehicle to Accelerate Access and Reach to Transformational Action, is a platform designed to enable Financial and Social Inclusion by educating citizens on various schemes and programmes.

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