

Current Affairs search results for tag: science-and-technology

### **1. 15 Start-ups selected in product accelerator program ( Dec. 26, 2022 )**

15 Start-ups selected in product accelerator program

The **Ministry of Science and Technology** has said that **fifteen Startups**, selected in the first-of-its-kind product accelerator program for innovators developing sustainable solutions, will soon start working towards solutions in the **healthcare and agriculture domains**.

#### **Important facts**

- This **Start-up Incubation and Innovation Center (SIIC)** is the first cohort of the manufacturing accelerator program launched by IIT Kanpur.
- A total of **15 startups** will be selected under the programme. The best performing startups in a cluster of 15 startups will receive a cash award of up to **Rs 10 lakh**.

#### **About NIRMAN Accelerator Program**

- Startup Incubation and Innovation Centre, the technology business incubator at IIT Kanpur, launched the **NIRMAN Accelerator Program**.
- It is supported by the Department of **Science and Technology, Government of India**.
- The program focuses on manufacturing startups engaged in the healthcare and agriculture domains, to help them overcome challenges from their prototyping to market journey.
- The manufacturing accelerator program has immense potential to tap and capitalize on startups operating in the sector.

#### **Name of the 15 Start-ups**

1. LCB Fertilizers Private Limited
2. Saptkrishi Scientific Private Limited
3. BomLife Private Limited
4. Polycycling Solutions Private Limited
5. Surobhi AgroIndustries Private Limited
6. Primary Healthtech Private Limited
7. Lenek Technologies Private Limited
8. Aana Crop Solutions Private Limited
9. Wander Continental Flyer Private Limited
10. Climec lab Private Limited

- ProPlant Foods Private Limited
- 11.
  12. Meukron Technologies Private Limited
  13. Xfinito Biodesigns Private Limited
  14. Life and Limb Private Limited
  15. NadiPulse Prognostics Private Limited

## **2. IIT Kanpur develops artificial heart to help people with acute cardiac problems ( Dec. 26, 2022 )**

IIT Kanpur develops artificial heart to help people with acute cardiac problems

Researchers at **IIT Kanpur** have developed an **artificial heart**, which will prove to be helpful for people suffering from **cardiac problems**.

### **Important facts**

- IIT Kanpur director **Abhay Karandikar** announced that animal trials would begin next year.
- He said heart transplants will now be simple. In critical patients, artificial hearts can be placed.
- This artificial heart was made by cardiologists from across the country and IIT Kanpur.
- After the study is successful, the transplant on humans could be done in the next two years.
- India imports **80 percent** of devices and implants from abroad, only **20 percent** of devices and implants are manufactured in India.

## **3. Government approves Bharat Biotech's Nasal covid vaccine ( Dec. 23, 2022 )**

India on 23 December 2022 has allowed the use of Bharat Biotech's nasal COVID-19 vaccine as a booster dose.

The government of India on 23 December 2022 has allowed the use of Bharat Biotech's nasal COVID-19 vaccine as a booster dose. The vaccine will be offered to people of 18 years and above.

The vaccine will be available initially at the private hospitals and can be booked on the CoWIN app from 23 December 2022.

The nasal vaccine **BBV154** had received approval of the [Drugs Controller General of India](#) in November for restricted use in an emergency situation for those above 18 as a heterologous booster dose.

This vaccine has been specifically formulated to allow intranasal delivery through nasal drops. The nasal delivery system has been designed and developed to be cost-effective in low and middle-income countries.

It was developed in partnership with **Washington University, St. Louis** of the United States of America.

The rise of [mutant variants](#) in China and other countries may cause a fresh surge of infections in India, which is a cause of concern for the government.

**Hyderabad based** Bharat Biotech company has also developed injectable **Covaxin vaccine** with Indian Council of Medical Research (ICMR) and National Institute of Virology, Pune.

### **Heterologous vaccine**

A heterologous vaccine is a type of booster vaccine which is given to a person who has already taken a different vaccine. A heterologous vaccine is also called a mix and match vaccine because a person is taking two types of vaccine for the same disease.

The **novel coronavirus** was first detected in **Wuhan** China in December 2019 and was later declared a Public health emergency of International concern by the World Health Organisation on 30 January 2020 and a Pandemic on 11 March 2020. The first case of the virus in India was confirmed in **Kerala** on 30 January 2020.

The Covid vaccination in India was started on **16 January 2021**.

## **4. UIDAI wins DSCI best Security practices award in the government sector award ( Dec. 23, 2022 )**

Unique Identification Authority of India (UIDAI)

The **Unique Identification Authority of India (UIDAI)** has won the Data Security Council of India's (DSCI) Best Security Practices in Government Sector award.

The award was given to UIDAI during DSCI's three day **Annual Information Security Summit (AISS)** in Gurugram for its significant role in securing national critical Aadhaar infrastructure that provides digital identity based welfare services to residents.

The Annual Information Security Summit (AISS) was organised by [Nasscom](#) -DSCI from 20-22 December in Gurugram. Data Security Council of India is a premier industry body on data protection in India. It was set up by the National Association of Software and Services Companies (NASSCOM).

### **Unique Identification Authority of India (UIDAI)**

The Unique Identification Authority of India (UIDAI) is a statutory authority established under the provisions of the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016.

It was set up on 12 July 2016 by the Government of India, under the **Ministry of Electronics and Information Technology (MeitY)**.

UIDAI was created to issue Unique Identification numbers (UID), Aadhaar, to all **residents of India**. It issues a **12 digit biometric Aadhaar number** to the residents of India after satisfying the verification process laid down by the Authority.

Chief Executive officer (CEO): **Dr Saurabh Garg**

### **5. ISRO to carry US instrument on board the forthcoming Chandrayaan 3 mission ( Dec. 22, 2022 )**

Indian Space Research Organisation (ISRO) forthcoming Chandrayaan 3 mission will carry scientific instruments of the United States of America. The Chandrayaan mission 2 also carried American scientific instruments. This information was given by the Union Minister of state (Independent charge )Science & Technology, Atomic Energy and Space, Dr Jitendra Singh in the Rajya Sabha on 22 December 2022.

He said that India has signed 4 cooperative documents specifically to collaborate in space exploration in the last five years.

Apart from the United States of America, India has also signed an agreement with **Japan** to conduct a feasibility study for a joint lunar polar exploration mission, while with the **United Kingdom** it has an agreement for conducting a feasibility study for collaboration in future space science missions.

He said, India and Bhutan collaborated on the development of **INDIA-BHUTANSAT** Satellite carrying into payloads NanoMX, an optical imaging payload developed by ISRO and APRS-Digipeater. The satellite was successfully placed in orbit on 26.11.2022.

A communication satellite 'South Asia Satellite' was dedicated by India to South Asian Countries in 2017.

### **ISRO mission to Moon or Chandrayaan**

ISRO launched Chandrayaan mission to study the moon. The **Chandrayaan 1 mission was** launched on 22 October 2008 from Satish Dhawan Space center, Sriharikota, Andhra Pradesh. It launched a Moon Impact Probe that crashed on the moon surface and discovered a **small amount of water on the Moon's surface**.

**Chandrayaan 2** was launched on 2 July 2019. The mission aimed to land a rover on the moon's South Pole. However the lunar lander **Vikram** crashed on the moon surface on 7 September 2019 and prevented rover **Pragyaan** from successfully travelling on the surface of the moon.

### **Chandrayaan 3**

According to the ISRO chairman S.Somanath Chandrayaan 3 is scheduled to be launched in June 2023. It will only consist of a rover and lander and will communicate with the earth via an orbiter from Chandrayaan 2.

### **Indian Space Research Organisation (ISRO)**

It was set up on 15 August 1969

It is India's national space agency.

Headquarters: **Bengaluru**

Chairman: **S.Somanath**

## **6. India's manned Space flight Gaganyaan to be launched in in the fourth quarter of 2024: Union Minister Jitendra Singh ( Dec. 21, 2022 )**

Gaganyaan to be launched in in the fourth quarter of 2024

Union Minister of State (Independent Charge) Science & Technology; Atomic Energy and Space, **Dr Jitendra Singh** said that India's maiden human space flight mission is targeted to be launched in the **fourth quarter of 2024**. He gave this information in the Lok Sabha on 21 December 2022.

### **Gaganyaan Mission of ISRO**

Gaganyaan project envisages demonstration of human spaceflight capability by launching a crew of **3 members** to an orbit of 400 km for a 3 days mission and bring them back safely to earth, by landing in Indian sea waters.

The Gaganyaan project was conceived in 2007 and it was formally started in 2018 with a budget of Rs 10,000 crore. Initially the plan is to launch two unmanned missions in December 2020 and July 2021 before the final launch of the manned mission in December 2021.

Now according to the Minister the first unmanned mission will be launched in the last quarter of 2023 followed by the second unmanned mission in the second quarter of 2024.

### **Gaganyaan Astronauts**

Four Indian Air Force pilots have been identified as crew for the mission who are undergoing training in Russia. An astronaut training facility was set up in **Bengaluru** in May this year. Here the four astronauts will go through theory, physical fitness, flight suit training, microgravity, among other things.

### **Aim of Gaganyaan mission**

According to the Indian Space Research Organisation (ISRO) **LMV3 rocket** will be used as a launch vehicle for the Gaganyaan mission. It will take the crew 16 minutes to reach space, where they will spend three days conducting scientific experiments. During the return, the crew module in which the crew will live will separate at an altitude of 120 km. It will splash down in the sea nearby 36 minutes after separation.

### **Human Space Flight**

At present only three countries, the United States, Russia and China have the capability to launch manned space missions.

The first person to go into space was **Yury Gagarin** of the Soviet Union on 12 April 1961 onboard the Vostok Rocket.

The **first woman** to go into space was **Valentina Tereshkova** of the Soviet Union on 16 June 1963 onboard the Vostok 6 Rocket.

Wing Commander **Rakesh Sharma** is the only Indian to go into space. He was part of the Soviet mission aboard Soyuz T-11 on 3 April 1984.

Humans who travel in space are called astronauts. The Chinese call them Taikonauts and the Russians call them Cosmonauts.

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## **7. CSIR's "One Week, One Lab" countrywide campaign from 6th January, 2023 ( Dec. 18, 2022 )**

CSIR's "One Week, One Lab" countrywide campaign

Union Minister for Science & Technology, **Jitendra Singh**, who is also the **vice president of [CSIR \(Council of Scientific & Industrial Research\)](#)**, on 17 December announced the launching of "**One Week, One Lab" countrywide campaign** from January 6, 2023.

### **Important facts**

- Dr Jitendra Singh announced this while addressing the **200th Governing Body Meeting of CSIR** at the Science Centre in New Delhi.
- He announces Special Call for Research Grant Proposals for **Women Scientists**.
- He launched the new tagline of the organisation, "**CSIR-The Innovation Engine of India**".
- In this campaign, **37 premier laboratories/institutes** of CSIR spread across the country will showcase their unique innovations and technological breakthroughs to the people of India.
- "One Week One Lab" theme-based campaign is expected to ignite the minds of young **innovators, students, academia, and industry** to look for opportunities through deep tech Start-ups ventures.
- Prime Minister Narendra Modi, who is President of CSIR, had chaired the meeting of **CSIR Society on** 15th October, 2022 and appreciated the efforts of CSIR in the past 80 years.
- The Prime Minister had urged CSIR in the Society meeting to develop a vision for 2042 when CSIR turns 100 years old.

### **About CSIR**

- CSIR was established on **26 September 1942** and was registered as the CSIR Society under the **Societies Registration Act, 1860**.
- The first meeting of the Governing Body was held on **09 March 1942** in which the bye-laws for the Council were framed.

## **8. India ranked 3rd globally in the publication of scientific papers; Union Minister Jitendra Singh ( Dec. 18, 2022 )**

India ranked 3rd globally in the publication of scientific papers

According to the Union Minister for Science & Technology **Dr Jitendra Singh** India has been ranked **3rd globally** in the publication of scientific papers. Quoting the National Science Foundation (NSF)'s Science & Engineering Indicators 2022 report of the United States, India's position globally in scientific publications, has improved from **7th position in 2010** to **3rd position in 2020**. He also said that India's scholarly output increased from 60,555 papers in 2010 to 1, 49,213 papers in 2020.

**China** leads the world in the publication of the maximum number of scientific papers followed by The **United States of America**.

Dr Jitendra Singh also said that India now ranks **3rd** in terms of the number of PhDs in science and engineering.

The National Science Foundation is an independent agency of the United States government that supports fundamental research and education in all the non-medical fields of science and engineering.

## **9. Mandaviya inaugurates National Animal Resource Facility for Biomedical Research at Genome Valley, Hyderabad ( Dec. 17, 2022 )**

National Animal Resource Facility for Biomedical Research at Genome Valley, Hyderabad

Union health minister **Mansukh Mandaviya** on 17th December inaugurated **ICMR's National Animal Resource Facility for Biomedical Research (NARFBR)** at **Genome Valley in Hyderabad** to address **zoonotic threats**.

### **About ICMR's NARFBR**

- It is a top-notch facility that will provide the ethical care and use and welfare of laboratory animals used during research.
- It will not only serve as a **state-of-the-art facility for ethical animal studies** but also apply to basic regulatory animal research.
- It will help in capacity building of new researchers and quality assurance checks as well as create procedures for new drugs, vaccines and pre-clinical testing within the country.

It would be an asset for the country to deal with **zoonotic diseases**.

### **Indian Council of Medical Research (ICMR)**

- It is one of the oldest medical research bodies in the world for the coordination and promotion of biomedical research.
- Its headquarter is in **New Delhi**.
- It works under the Department of **Health Services (DHS) of the Ministry of Health and Family Welfare**.
- It was established in 1911 as the **Indian Research Fund Association (IRFA)**.
- Later in **1949** it was renamed as ICMR.

### **10. NASA launches international mission 'SWOT' to survey Earth's water ( Dec. 17, 2022 )**

NASA launches international mission 'SWOT' to survey Earth's water

The US National Aeronautics and Space Administration (NASA) and the French space agency Centre National d'Etudes Spatiales (CNES) have jointly launched **the Surface Water and Ocean Topography (SWOT) mission** to track nearly all the water on Earth's surface.

The SWOT mission was launched through a **SpaceX Falcon 9 rocket** from the Space Launch Complex at **Vandenberg Space Force Base in California, United States of America** on 16 December 2022. The mission has a lifespan of three years.

#### **Feature of the Mission**

- According to NASA SWOT will cover the entire Earth's surface between 78 degrees south and 78 degrees north latitude at least once every 21 days.
- It will provide data on more than 95 per cent of the world's lakes larger than 15 acres (62,500 square meters) and rivers wider than 330 feet (100 meters) across.
- Currently, freshwater researchers have reliable measurements for only a few thousand lakes around the world.
- The satellite will measure the height of water in freshwater bodies and the ocean on more than 90 per cent of Earth's surface.
- This information will provide insights into how the ocean influences climate change; how a warming world affects lakes, rivers, and reservoirs; and how communities can better prepare for disasters, such as floods.

### **National Aeronautics and Space Administration (NASA)**

It is an American government's premier space agency which was set up in 1958 to promote research and development in the exploration of outer space and Earth's atmosphere.

NASA mainly launches its rockets from its two primary spaceports. One is John F. Kennedy Space Center on Merritt Island in Florida, United States and from Vandenberg Space Force Base in California, United States of America.



Headquarters of NASA: **Washington D.C**

Administrator of NASA: **Bill Nelson**