

CONTENTS

S. No.	Title	Source	Page No.
DRDO News			1
1	DRDO Successfully Completes User Evaluation Trials of Akash-NG	<i>Press Information Bureau</i>	1
Defence News			1-6
2	Critical minerals key to national security: Air Marshal Dixit	<i>The Hindu</i>	1
3	Amid shrinking fighter fleet, IAF looks to Russia for Sukhoi upgrade	<i>The Tribune</i>	2
4	Def Tech Tonic	<i>The Times of India</i>	3
5	Operation Sindoor: A year that changed India's security playbook	<i>The Statesman</i>	4
6	Forces plan to optimise unused defence land for green energy	<i>The Indian Express</i>	5
7	भारत को घेरने के लिए सैन्य समझौता करेंगे बांग्लादेश और पाकिस्तान	<i>Dainik Jagran</i>	6
Science & Technology News			6-13
8	Why ISRO's heaviest-ever launch, LVM3-M6 mission, is test of capability cost	<i>The Indian Express</i>	6
9	'ब्लूबर्ड ब्लॉक-2' मिशन के लिए उल्टी गिनती शुरू	<i>Punjab Kesari</i>	8
10	President Droupadi Murmu Confers "Rashtriya Vigyan Puraskar 2025" on 24 eminent Scientists at Rashtrapati Bhavan	<i>Press Information Bureau</i>	9
11	AI agent conducts experiments in IIT Delhi lab	<i>The Times of India</i>	11
12	अब रिसर्च की रफ़्तार बढ़ाएगा AI असिस्टेंट, लैब्स में करेगा एक्सपेरिमेंट	<i>NavBharat Times</i>	13

DRDO News

DRDO Successfully Completes User Evaluation Trials of Akash-NG

Source: Press Information Bureau, Dt. 23 Dec 2025

Defence Research and Development Organisation (DRDO) has successfully completed the User Evaluation Trials (UET) of Next Generation Akash missile (Akash-NG) system. During the trials, the missiles successfully intercepted aerial targets at different range & altitude including the near-boundary-low-altitude and Long Range, high altitude scenarios.

Akash-NG, equipped with indigenous RF seeker and propelled by solid rocket motor, is a potent system for ensuring air defense against different types of aerial threats. All the systems & sub-systems including the Multi Function Radar (MFR), Command and Control Unit, Missile Launch vehicle (MLV) etc. have been designed by various laboratories of DRDO with the help of Indian industries. The trials were witnessed by Senior Scientists of DRDO & User Reps from the Indian Air Force (IAF).

Raksha Mantri Shri Rajnath Singh has complimented DRDO, Indian Air Force and Industry on successful completion of User Evaluation Trials of Akash-NG and said that the state-of-the-art missile system will further strengthen air defence capabilities of the IAF. Secretary DD R&D and Chairman DRDO has congratulated all the teams involved in the successful flight tests of Akash NG missile system and stated that the successful completion of the UET has paved the way for induction of Akash-NG into the Indian armed forces.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=2207971®=3&lang=1>

*

Defence News

Critical minerals key to national security: Air Marshal Dixit

Source: The Hindu, Dt. 24 Dec 2025

Speaking at a discussion titled 'Minerals that Matter: Geopolitics, Sovereignty and Value Chains', Air Marshal Dixit underscored the role of critical minerals in modern defence systems. "Modern defence systems including jet engines, missiles, precision munitions, radars, satellites, batteries and semiconductors are intrinsically dependent on assured access to these minerals," he said.

Highlighting the geopolitical dimensions of mineral supply chains, the Air Marshal said that global supply networks for critical minerals are highly concentrated and increasingly subject to export controls and geopolitical pressures. Excessive import dependence, he said, is a major strategic vulnerability. He emphasised that self-reliant defence manufacturing and sustained operational readiness are inseparable from secure and resilient mineral supply chains.

Referring to recent initiatives, Air Marshal Dixit highlighted the identification of critical minerals, the launch of the National Critical Mineral Mission, and government efforts to strengthen the value

chain — from extraction and processing to manufacturing and recycling. These measures, he said, are vital for translating policy intent into tangible outcomes. The Air Marshal, who was speaking at the event organised by the Centre for Joint Warfare Studies and IP Bazaar, inaugurated a compilation of 30 technical reports on critical minerals, featuring detailed intellectual property landscape studies and market analyses.

<https://www.thehindu.com/news/national/critical-minerals-key-to-national-security-air-marshal-dixit/article70430015.ece>

*

Amid shrinking fighter fleet, IAF looks to Russia for Sukhoi upgrade

Source: The Tribune, Dt. 24 Dec 2025

Faced with a dwindling fleet of fighter jets, the Indian Air Force (IAF) is considering an interim arrangement to have a few dozen of its Sukhoi-30 MKI aircraft upgraded with Russian assistance. This stopgap measure is being explored until public sector aircraft manufacturer Hindustan Aeronautics Limited (HAL) takes over the upgrade of the remaining fleet.

The IAF plans to upgrade around 200 aircraft out of its total fleet of 272 Sukhoi-30 MKIs. Sources said the option of undertaking initial upgrade work in Russia is being examined, as some of the planned enhancements will require technology absorption by HAL. While HAL has licence-produced a large number of Sukhoi-30 MKIs, seamless adoption of new technologies by HAL and its Indian vendor base is expected to take time.

The Ministry of Defence aims to achieve nearly 78 per cent indigenous content in the Sukhoi upgrade programme, which will be the most significant mid-life upgrade undertaken for the aircraft. The incorporation of indigenous components is expected to boost domestic manufacturing and reduce dependence on foreign suppliers.

India plans to equip the aircraft with indigenous avionics, including advanced systems and mission computers developed by DRDO and Indian industry. A new mission computer will be required to handle the increased processing demands of the upgraded avionics suite.

The upgrade will also include improved cockpit and multifunction displays, along with the induction of the indigenous UTTAM active electronically scanned array (AESA) radar to replace the ageing radar currently fitted on the aircraft. Developed by DRDO, the UTTAM radar offers enhanced detection range and multi-target tracking capabilities.

While the BrahMos missile has already been integrated on the Sukhoi-30 MKI, the IAF is also seeking integration of indigenous beyond-visual-range air-to-air missiles, high-speed precision stand-off weapons and next-generation glide bombs.

In June, Defence Minister Rajnath Singh discussed the Sukhoi-30 MKI upgrade programme and the expeditious procurement of critical military hardware with his Russian counterpart Andrey Belousov on the sidelines of the Shanghai Cooperation Organisation (SCO) meeting in Qingdao, China.

Earlier, in February, Russia offered the AL-41 engine — used on the Sukhoi-57 stealth fighter — for the Sukhoi-30 MKI fleet. The Sukhoi-30 MKI is currently powered by the AL-31 engine, which is less powerful than the AL-41.

<https://www.tribuneindia.com/news/india/amid-shrinking-fighter-fleet-iaf-looks-to-russia-for-sukhoi-upgrade/>

*

Def Tech Tonic

India can be a serious defence exporter if it invests heavily in R&D. A nimble innovation base is crucial

Source: The Times of India, Dt. 24 Dec 2025

In a leg up for Indian defence exports, Vietnam and Indonesia look set to buy India's BrahMos cruise missile. If the deal goes through, the Asean nations will follow Philippines in inducting the BrahMos missile system. A side point is that since the system was jointly developed by India and Russia, Moscow has to sign off on a no-objection certificate for the sale.

But this isn't expected to be a hurdle because Russian authorities, interestingly, have assured New Delhi that they won't stand in the way of the deals with Vietnam and Indonesia, who share security concerns about China.

But the key issue here is India's potential as a global defence supplier. India is still among the top three global defence importers. True, GOI launched the Defence Production and Export Promotion Policy, 2020 to strengthen the ecosystem for defence exports. This has seen defence exports reach Rs 23,622cr in FY 2024-25. But India's own major defence platforms continue to be of foreign origin. For example, around 90% of the Indian army's tank fleet comprises Russian-origin T-72s and T-90s. This poses both modernisation issues and strategic vulnerabilities.

So, there's no way out other than investing heavily in domestic R&D for defence. Only this will bring us closer to an American-style military-industrial complex, and help exceed our target of defence exports worth Rs 50,000cr by 2029. We need to link up schools, universities, private sectors, and defence institutes towards this effort.

Plus, even new domains such as drones, which India is eyeing, require tech depth with engineering innovation as the secret sauce. This is where China is already stealing a march and has emerged as the fourth largest arms exporter.

However, China's aggressive territorial claims and revisionist ambitions sit uneasy with most countries. India, bereft of such suspicions, can be an alternative defence supplier on both cost and quality. But a whole-of-govt approach is needed to seize that opportunity.

<https://timesofindia.indiatimes.com/blogs/toi-edit-page/def-tech-tonic/>

*

Operation Sindoor: A year that changed India's security playbook

Source: *The Statesman*, Dt. 24 Dec 2025

PARWINDER SANDHU
New Delhi, 23 December

The year 2025 is set to be remembered as a defining chapter in India's fight against terrorism, marked by the launch of Operation Sindoor, a sustained campaign targeting terror networks and their sponsors.

The operation dubbed as the 'New Normal' followed a deadly attack on April 22, when Pakistan-based terrorist outfit The Resistance Front (TRF), an offshoot of the Lashkar-e-Taiba, carried out a brutal assault in Pahalgam, killing 25 tourists and one Kashmiri pony ride operator. In response, on the intervening night of 6-7 May, Indian defence forces executed Operation Sindoor.

The response was non-escalatory, precise and targeted terrorist training camps of Hizb-ul-Mujahidin (HM, Jaish-e-Mohammed (JeM) and Lashkar-e-Taiba (LeT) at nine different locations within Pakistan and Pakistan Occupied Kashmir- Markaz Subhan Allah, Bahawalpur - JeM, Markaz Taiba, Muridke - LeT, Sarjal, Tehra Kalan - JeM, Mehmoona Joya, Sialkot - HM, Markaz Ahle Hadith, Barnala - LeT, Markaz Abbas, Kotli - JeM, Maskar Raheel Shahid, Kotli - HM, Shawai Nalla Camp, Muzaffarabad - LeT, and Syedna Bilal Camp, Muzaffarabad - JeM. No military targets were engaged. The then Director General Military Operations (DGMO), Lieutenant General Rajiv Ghai had said that more than 100 terrorists were killed in the strikes including high value targets such as Yusuf Azhar, Abdul Malik Rauf and Muddasir Ahmed, who were involved in the hijacking of IC 814 and the Pulwama blast. In the early hours of 8 May, Pakistan, in an escalated response launched



coordinated drone and missile strikes targeting over a dozen Indian military installations across the Northern and Western theatres, including Srinagar, Jammu, Pathankot, Amritsar, Ludhiana, Bathinda and Bhuj.

India's Integrated Counter-drone Grid and layered Air Defence systems intercepted these attacks, recovering debris conclusively traced to Pakistani origin. Operation Sindoor also produced concrete evidence of hostile technologies neutralized by Indian systems including pieces of PL-15 missiles (of Chinese origin), Turkish-origin UAVs, named "Yiha" or "YEEHAW", and long-range rockets, quadcopters and commercial drones. The operation unfolded across land, air, and sea. India deployed a mix of weapons to carry out the counter strike successfully. It included SCALP cruise missile, the HAMMER precision bomb, and loitering munitions among the others.

Bypassing and jamming Pakistan's Chinese-supplied air defence systems, the IAF completed the mission in barely 23 minutes, before returning safely to its base. India's offensive strikes targeted key Pakistani airbases- Noor Khan and Rahimyar Khan with surgical precision.

Loitering munitions were used to devastating effect, each finding and destroying high-value targets, including enemy radar and missile systems. The indigenously

developed Akash surface-to-air missile system and legacy platforms like the Pechora and OSA-AK were deployed effectively in a layered defence grid. The IAF's Integrated Air Command and Control System enabled real-time coordination of air assets, allowing Indian forces to neutralize aerial threats efficiently and maintain net-centric operations throughout the conflict. During the media briefings, Director General of Air Operations (DGAO) Air Marshal AK Bharti had said, "We have the capability to target every system at these bases and more. However, it was only a measured response to instill good wisdom to our adversary to refrain from further escalation. IAF's response was directed only at military installations, avoiding civilians and collateral damage," he said.

Stating that following Pakistan's massive drone attack on Indian cities, including Srinagar and Naliya, on the night of May 8-9, a decision was taken to strike where it would hurt the most. "Towards that in a swift, coordinated, calibrated attack, we struck its Airbases, command centers, military infrastructure, air defence systems across the entire Western Front. The bases we struck included Chaklala, Rafiq, Rahim Yar Khan, sending a clear message that aggression will not be tolerated. This was followed by strikes at Sargodha, Bhulari, and Jacobabad," said the DGAO.

*

Forces plan to optimise unused defence land for green energy

Source: The Indian Express, Dt. 24 Dec 2025

The armed Forces are planning to optimise thousands of acres of unutilised defence land across the country over the next three to five years for various projects, particularly those focusing on green energy initiatives, The Indian Express has learnt. An estimated 46,000 acres of defence land can be used for such projects.

The options being explored include setting up solar plants, biogas plants, carrying out afforestation and floriculture to earn carbon credits. Some of these projects will be implemented in collaboration with National Thermal Power Corporation (NTPC) Green; other PSUs could also be roped in for future use. Defence land is divided into various categories based on its current usage.

It has been learnt that a consultant has been engaged to examine feasible options. Following this examination, the land will be made available to central and state governments and allied organisations for the specific project selected. Senior officials privy to the developments said, as an initial pilot project it has been decided to set up a solar plant in a patch of defence land in a specific state in collaboration with NTPC Green.

A detailed project report for the project is currently being drafted. Subsequently, such projects—focusing on green energy initiatives—would be set up in other locations under a pact with NTPC or other government PSUs.

According to officials, any permanent infrastructure may not be created on the identified defence land, which may be used for environmental projects, afforestation, floriculture, solar energy generation, among others. Officials said it is also being discussed internally if part of the revenue generated could be used to enhance infrastructure for the Defence Forces, even as the final land use will be decided once the feasibility study is completed and examined by the offices concerned.

An official said the move will also ensure the integrity of the land till it is required by the defence forces. There have also been instances where certain parcels of defence land have been prone to encroachment.

Changes in use of defence land

In the past, defence land has been given to state governments in lieu of an equal value land to the Ministry of Defence elsewhere or for constructing equal value infrastructure. The Defence Ministry in 2020 approved a new policy under which defence land needed to create public infrastructure could only be provided if the acquirer was willing to establish equal value infrastructure for the organisation owning the land.

<https://indianexpress.com/article/india/forces-plan-to-optimise-unused-defence-land-for-green-energy-10435798/>

*

भारत को घेरने के लिए सैन्य समझौता करेंगे बांग्लादेश और पाकिस्तान

Source: Dainik Jagran, Dt. 24 Dec 2025

नई दिल्ली, आइएनएस : बांग्लादेश व पाकिस्तान के बीच एक औपचारिक सैन्य समझौते को अंतिम रूप देने की प्रक्रिया तेज हो गई है। खुफिया एजेंसियों के अनुसार, यह प्रस्तावित समझौता पाकिस्तान और सऊदी अरब के बीच पहले से मौजूद परस्पर सैन्य सहयोग माडल पर आधारित हो सकता है। यदि यह समझौता लागू होता है, तो इसके दूरगामी रणनीतिक और सुरक्षा निहितार्थ भारत के लिए चिंता का विषय बन सकते हैं। ये समझौता नाटो देशों की तर्ज पर होगा, जिसमें एक देश पर हमला समूह के सभी देशों पर आक्रमण माना जाता है। सीधे तौर पर ये समझौता भारत को घेरने की चाल माना जा रहा है।

सूत्रों के मुताबिक, बांग्लादेश में अंतरिम सरकार के प्रमुख के रूप में मोहम्मद यूनूस की नियुक्ति के बाद ढाका और इस्लामाबाद के रिश्तों में तेजी से नजदीकी बढ़ी है।

पाक-बांग्ला समझौते में क्या है सऊदी एंगल : खुफिया अधिकारियों का कहना है कि यदि यह समझौता सऊदी अरब-पाकिस्तान सैन्य करार की तर्ज पर होता है, तो इसमें कई अहम प्रविधान शामिल हो सकते हैं। पाकिस्तान और सऊदी अरब के बीच हुए सैन्य समझौते की प्रमुख विशेषताओं में संयुक्त सैन्य अभ्यास, खुफिया जानकारी साझा करना,



- समझौते में एक देश पर हमला पूरे समूह पर आक्रमण माना जाएगा
- पाकिस्तान-सऊदी अरब माडल पर आधारित होगा समझौता

प्रशिक्षण और क्षमता निर्माण, सैन्य सलाहकारों की तैनाती तथा रणनीतिक समन्वय शामिल हैं।

परमाणु क्षमता तक पहुंच भी संभव : सबसे संवेदनशील पहलू वह है, जिसमें पाकिस्तान ने सऊदी अरब को अपनी रणनीतिक और परमाणु क्षमता तक पहुंच के संकेत दिए थे, हालांकि रियाद ने इस पर कभी स्पष्ट सार्वजनिक रुख नहीं अपनाया। भारतीय एजेंसियों को आशंका है कि पाकिस्तान इसी तरह के “अपवाद” बांग्लादेश को भी प्रस्तावित कर सकता है।

आठ महीने में कई दौर की बैठकें : पिछले आठ महीनों में दोनों देशों की सेना, नौसेना और वायुसेना के वरिष्ठ अधिकारियों के बीच कई दौर की बैठकें हो चुकी हैं। वर्तमान में प्रशिक्षण, पेशेवर आदान-प्रदान और क्षमता निर्माण से जुड़े कुछ एमओयू पहले से मौजूद हैं, जिन्हें अब एक

व्यापक व संस्थागत सैन्य समझौते का रूप दिया जा सकता है। विशेषज्ञों का मानना है कि बांग्लादेश के चुनाव इस समझौते की दिशा तय करेंगे। यदि भारत समर्थक बांग्लादेश नेशनल पार्टी सत्ता में आती है, तो समझौते की गति धीमी पड़ सकती है।

बांग्लादेश में भारत विरोधी आंच होगी और तेज : बांग्लादेश में बद से बदतर होते हालात से उत्साहित पाक खुफिया एजेंसी आइएसआइ ने देश में भारत विरोधी अभियान की आंच को और तेज करने की पूरी तैयारी कर ली है। हिंदू युवक दीपू दास की हत्या के बाद जिस तरह से भारत की प्रतिक्रिया हुई है, आइएसआइ उसे और भड़काना चाहती है ताकि अंतरराष्ट्रीय समुदाय का ध्यान बांग्लादेश पर टिक जाए। इससे ये नैरेटिव चलाने में बल मिलेगा कि भारत बांग्लादेश की पूर्व पीएम शेख हसीना को बचाने में लगा हुआ है। बता दें कि सत्ता से बेदखल होने के बाद शेख हसीना भारत में ही शरण लेकर रह रही हैं। भारत की तरफ से एक अन्य पूर्व पीएम खालिदा जिया की बीएनपी को भी समर्थन दिया जा रहा है, जो देश की दूसरी बड़ी पार्टी है। दोनों में से किसी एक के सत्ता में आने से पाकिस्तान के मंसूबों पर पानी फिर सकता है। इसलिए आइएसआइ चुनावों को लंबा खींचने की फिराक में है।

*

Science & Technology News

Why ISRO's heaviest-ever launch, LVM3-M6 mission, is test of capability cost

Source: The Indian Express, Dt. 24 Dec 2025

The Indian Space Research Organisation (ISRO) launched the LVM-3 rocket carrying its heaviest-ever satellite — BlueBird Block-2, weighing nearly 6,100 kg — on Wednesday at 8:24 am. A modified version of the LVM-3 rocket will also be used in the Gaganyaan missions.

The satellite will be injected into an orbit of around 520 km just over 15 minutes after take-off. The BlueBird Block-2 satellite will be the largest-ever commercial communications satellite to be deployed in low Earth orbit (LEO). As the name suggests, LEO is an orbit that is relatively close to Earth's surface. It is normally at an altitude of less than 1,000 km.

The satellite, designed by the US company AST SpaceMobile, will be part of an LEO constellation that will provide direct-to-mobile connectivity. This means that unlike conventional communications satellites, which beam their signals to specialised ground stations before disseminating data further, this constellation will be able to directly communicate with the phones we use. This constellation will enable 4G and 5G voice and video calls, texts, streaming, and data for “everyone, everywhere, at all times,” ISRO said.

Why the BlueBird Block-2 mission is significant

The current mission is the third commercial one involving ISRO’s newest launch vehicle, after the launches of 36 satellites of OneWeb, a broadband satellite internet service provider, in 2022 and 2023. India had been chosen for these missions following Russia’s refusal in the wake of the Ukraine war, and with the European Space Agency’s (ESA) launcher, Ariane-5, going out of commission.

The LVM-3 is hardly the only heavy launch vehicle on the market. Other options are SpaceX’s Falcon-9 and the ESA’s Ariane 6. But Wednesday’s launch is ISRO’s chance to demonstrate that it can carry out such heavy launches — at a lower cost.

This mission marks the third time the LVM-3 will be used to carry a satellite into LEO. The powerful cryogenic engine-based vehicle was initially designed to carry satellites to the distant geosynchronous orbits of around 36,000 km from the Earth’s surface. After several satellites were placed in different orbits during the 2022 OneWeb launch, the rocket, then called the Geosynchronous Launch Vehicle Mark 3 or GSLV-Mk3, was renamed.

Wednesday’s launch also comes weeks after the LVM-3 rocket put the CMS-03 communication satellite in orbit on November 2. This will be the shortest gap between two LVM-3 launches. And it will be a test of the Indian space agency’s capability to quickly assemble its heavier missions. After 2023, this will be the second time ISRO launches two LVM-3 missions in a single year.

At 6,100 kg, the BlueBird Block-3 is the heaviest payload ISRO will have placed into orbit. Until now, the heaviest payload carried by the space agency so far has been the sets of OneWeb satellites — cumulatively weighing more than 5,700 kg — to LEO. The space agency also broke its record for the heaviest satellite placed in the distant geosynchronous transfer orbit last month with the launch of CMS-03 using the same vehicle. The satellite weighed 4,410 kg.

ISRO’s efforts towards engine optimisation

The space agency has been working to introduce redundancies to the vehicle to make it safe for humans for the Gaganyaan mission, as well as increasing its lift-off capacity to carry the modules for the Bharatiya Antariksh Station, the space station envisaged by India.

To increase the lift-off capacity of the vehicle, ISRO is working to increase the thrust produced by the third or the cryogenic upper stage of the rocket. This stage accounts for nearly 50% of the velocity needed to place the satellites in the geosynchronous transfer orbits. The C25 stage, presently being used in the launch vehicle, can carry only 28,000 kg of propellant, thus producing a thrust of 20 tonnes. The new C32 stage will be capable of carrying 32,000 kg of fuel and produce a 22-tonne thrust.

The agency is also considering the use of semi-cryogenic engine to replace the liquid propellant used in the rocket’s second stage. A cryogenic engine uses liquefied gases at extremely low temperatures as the fuel — in this case liquid oxygen and hydrogen — while a semi-cryogenic engine uses a liquified gas and a liquid propellant. ISRO plans to use a refined kerosene and liquid

oxygen-based second stage, which would improve the capability of the vehicle and make it cheaper. Replacing the engine would make the vehicle capable of carrying around 10,000 kg to LEO instead of the current 8,000kg. This version is likely to be used to carry the modules for the Bharatiya Antariksh Station.

The space agency is also working on “bootstrap reignition” for the cryogenic engines, which will make the launch vehicle more efficient for missions where satellites have to be placed in different orbits. While launches to a geosynchronous orbit usually carry a single, large payload, most LEO missions carry several satellites for different orbits. The bootstrap reignition would allow the upper stage cryogenic engine to restart on its own without an external gas, such as helium, to reignite the engine. A boot-strap mode would reduce the weight of fuel and increase payload capability.

<https://indianexpress.com/article/explained/explained-sci-tech/isro-heaviest-ever-launch-lvm3-m6-mission-10435444/>

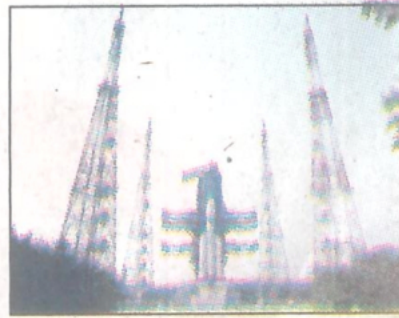
*

'ब्लूबर्ड ब्लॉक-2' मिशन के लिए उल्टी गिनती शुरू

Source: Punjab Kesari, Dt. 24 Dec 2025

पंजाब केसरी/श्रीहरिकोटा

इसरो ने कहा कि अमेरिका के एक नए पीढ़ी के संचार उपग्रह को ले जाने वाले एलवीएम-एम6 रॉकेट के प्रक्षेपण के लिए 24 घंटे की उल्टी गिनती मंगलवार को यहां शुरू हो गयी। एक समर्पित वाणिज्यिक मिशन के तहत इसरो बुधवार को सुबह 8.54 बजे इस अंतरिक्ष केंद्र के दूसरे प्रक्षेपण पैड से भारी सामान को ले जाने वाले अपने प्रक्षेपण यान एलवीएम3-एम6 के जरिए 'ब्लूबर्ड ब्लॉक-2' का प्रक्षेपण करेगा। बेंगलुरु स्थित अंतरिक्ष एजेंसी ने बताया कि 6,100 किलोग्राम वजनी यह संचार उपग्रह एलवीएम3 के प्रक्षेपण इतिहास में पृथ्वी की निम्न कक्षा में स्थापित किया जाने वाला अब तक सबसे भारी पेलोड होगा। इससे पहले सबसे



भारी पेलोड एलवीएम3-एम5 संचार उपग्रह-03 था, जिसका वजन करीब 4,400 किलोग्राम था और जिसे इसरो ने दो नवंबर को सफलतापूर्वक प्रक्षेपित किया था। बुधवार का यह मिशन 'न्यूस्पेस इंडिया लिमिटेड' और अमेरिका स्थित एएसटी स्पेसमोबाइल के बीच हुए वाणिज्यिक समझौते के तहत संचालित किया जा रहा है। एनएसआईएल, इसरो की वाणिज्यिक इकाई है।

*

President Droupadi Murmu Confers "Rashtriya Vigyan Puraskar 2025" on 24 eminent Scientists at Rashtrapati Bhavan

Prestigious "Vigyan Ratna Puruskar" for lifetime achievement conferred posthumously on renowned Astrophysicist Jayant Narlikar as India Honours Scientific Excellence

Source: Press Information Bureau, Dt. 23 Dec 2025

At the second "Rashtriya Vigyan Puraskar" ceremony held at Rashtrapati Bhavan today, the prestigious "Rashtriya Vigyan Ratna Puraskar 2025" for lifetime achievement was awarded posthumously to eminent astrophysicist Prof. Jayant Vishnu Narlikar while the entrepreneurial science team that powered India's much-discussed "Purple Revolution" and Lavender entrepreneurship found national recognition in "Rashtriya Vigyan Team Puraskar 2025" or Vigyan Team Award, which was bagged by the CSIR-led Aroma Mission.

President Droupadi Murmu presented the awards to 24 scientists and innovators across disciplines, in the presence of Union Minister of Science and Technology Dr. Jitendra Singh. The Rashtriya Vigyan Puruskars were instituted by the Modi government.



Taking to 'X', Dr Jitendra Singh wrote, "Congratulations "Team Aroma" for the coveted #RashtriyaVigyanPuruskar 2025, in recognition of your contribution in gifting the world the concept of "Purple Revolution" and presenting "Lavender" as a new avenue of Agri-Entrepreneurship.... kindling prospects of attractive livelihood even in remote hilly terrains of the Himalayas".

The Aroma Mission team, working under the Council of Scientific and Industrial Research, has been widely credited with translating laboratory research into field-level outcomes by promoting cultivation and processing of aromatic crops, particularly lavender, in the Himalayan region. Its work helped open new livelihood avenues for farmers in Jammu and Kashmir, reduced dependence on imports of essential oils, and demonstrated how coordinated scientific intervention can lead to measurable socio-economic impact.

The recognition places collaborative, application-oriented science at the centre of the national awards framework. The Lavender cultivation and entrepreneurship, beginning from Bhaderwah and Gulmarg townships of J&K has now spread in other parts of the UT also and is being adopted by other States like Uttarakhand and Himachal Pradesh as well. The Rashtriya Vigyan Puraskar,

instituted last year as part of a new national science awards architecture, is designed to acknowledge scientific work across the full spectrum — from lifetime achievement to early-career excellence and team-based innovation. This year's ceremony marked the second edition of the awards, underscoring the government's intent to present science and technology honours in a structured, contemporary format aligned with global best practices.

Among the honours announced, the Vigyan Ratna for lifetime achievement was awarded posthumously to eminent astrophysicist Prof. Jayant Vishnu Narlikar, while several Vigyan Shri and Vigyan Yuva awards recognised individual contributions across physics, agriculture, biological sciences, chemistry, engineering, medicine, space science, mathematics, and technology. The full list of awardees spans senior scientists as well as researchers below the age of 45, reflecting the award's emphasis on both experience and emerging talent.

Under the Vigyan Shri category, which recognises distinguished contributions in specific fields, awards were conferred on Dr. Gyanendra Pratap Singh (Agricultural Science), Dr. Yusuf Mohammad Sheikh (Atomic Energy), Dr. K. Thangaraj (Biological Sciences), Prof. Pradeep Thalappil (Chemistry), Prof. Aniruddha Bhalchandra Pandit (Engineering Sciences), Dr. S. Venkata Mohan (Environmental Science), Prof. Mahan Mj (Mathematics and Computer Science), and Shri Jayan N (Space Science and Technology), highlighting sustained and field-defining work across disciplines.

The Vigyan Yuva–Shanti Swarup Bhatnagar Award, aimed at scientists below the age of 45, recognised emerging researchers for innovative contributions. Awardees included Prof. Amit Kumar Agarwal and Prof. Surhud Shrikant More in Physics; Dr. Jagdis Gupta Kapuganti and Dr. Satendra Kumar Mangrauthia in Agricultural Science; Dr. Deepa Agashe and Shri Debarka Sengupta in Biological Sciences; Dr. Dibyendu Das in Chemistry; Dr. Waliur Rahaman in Earth Science; Prof. Arkaprava Basu in Engineering Sciences; Prof. Sabyasachi Mukherjee and Prof. Shweta Prem Agrawal in Mathematics and Computer Science; Dr. Suresh Kumar in Medicine; Shri Ankur Garg in Space Science and Technology; and Prof. Mohanasankar Sivaprakasam in Technology and Innovation.

Women scientists featured prominently among this year's awardees, with recognition across multiple categories and disciplines. Researchers such as Dr. Deepa Agashe and Prof. Shweta Prem Agrawal were honoured for their work, reflecting the growing participation and leadership of women in India's scientific ecosystem.

Dr. Jitendra Singh congratulated all the award recipients, stating that their work reflected the depth and diversity of India's scientific talent and underscored the role of science and technology in addressing national priorities and improving the quality of life of citizens. The presence of the President and the Science and Technology Minister was seen as reinforcing the national priority accorded to scientific research, innovation, and its translation into public value. The awards framework also seeks to bring clarity to categories, particularly the young scientist segment, by clearly defining age and achievement criteria.

With the Aroma Mission's recognition, the ceremony highlighted how government-backed scientific programmes, when anchored in local needs and implemented through teamwork, can deliver outcomes that go beyond laboratories and journals. As India looks to strengthen its science-led development model, the Rashtriya Vigyan Puraskar is increasingly positioned as a platform that connects research excellence with national priorities and grassroots impact.

List of Awardees for Rashtriya Vigyan Puraskar (RVP),

Sl. No.	Award	Field Name	Name
1.	Vigyan Ratna	Physics	Prof. Jayant Vishnu Narlikar (Posthumously)
2.	Vigyan Yuva	Physics	Prof. Amit Kumar Agarwal
3.	Vigyan Yuva	Physics	Prof. Surhud Shrikant More
4.	Vigyan Team	Agricultural Science	Team- Aroma Mission CSIR
5.	Vigyan Shri	Agricultural Science	Dr. Gyanendra Pratap Singh
6.	Vigyan Yuva	Agricultural Science	Dr. Jagdis Gupta Kapuganti
7.	Vigyan Yuva	Agricultural Science	Dr. Satendra Kumar Mangrauthia
8.	Vigyan Shri	Atomic Energy	Dr. Yusuf Mohammad Seikh
9.	Vigyan Yuva	Biological Sciences	Dr. Deepa Agashe
10.	Vigyan Shri	Biological Sciences	Dr. K Thangaraj
11.	Vigyan Yuva	Biological Sciences	Shri Debarka Sengupta
12.	Vigyan Yuva	Chemistry	Dr. Dibyendu Da
13.	Vigyan Shri	Chemistry	Prof. Pradeep Thalappil
14.	Vigyan Yuva	Earth Science	Dr. Waliur Rahaman
15.	Vigyan Shri	Engineering Sciences	Prof. Aniruddha Bhalchandra Pandit
16.	Vigyan Yuva	Engineering Sciences	Prof. Arkaprava Basu
17.	Vigyan Shri	Environmental Science	Dr. S Venkata Mohan
18.	Vigyan Shri	Mathematics and Computer Science	Prof. Mahan Mj
19.	Vigyan Yuva	Mathematics and Computer Science	Prof. Sabyasachi Mukherjee
20.	Vigyan Yuva	Mathematics and Computer Science	Prof. Shweta Prem Agrawal
21.	Vigyan Yuva	Medicine	Dr. Suresh Kumar
22.	Vigyan Yuva	Space Science and Technology	Shri Ankur Garg
23.	Vigyan Shri	Space Science and Technology	Shri Jayan N
24.	Vigyan Yuva	Technology and Innovation	Prof. Mohanasankar Sivaprakasam

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=2207860®=3&lang=1>

*

AI agent conducts experiments in IIT Delhi lab

Source: The Times of India, Dt. 24 Dec 2025

Inside an IIT Delhi laboratory, a microscope now takes instructions not from a human researcher, but from artificial intelligence. In a breakthrough that pushes AI beyond language models, researchers at IIT Delhi, in collaboration with teams from Denmark and Germany, have developed

the Artificially Intelligent Lab Assistant (AILA). It is an agent capable of conducting scientific experiments from start to finish.

The research marks a significant shift in how AI is used in science. Unlike conventional tools that assist with writing or data analysis, AILA can design experiments, fine tune instruments, analyse results and learn autonomously. It functions much like a human scientist inside the laboratory.

At the centre of this innovation is the Atomic Force Microscope (AFM), an instrument used in materials research to study matter at the nanoscale. AILA was able to operate the AFM independently, making real-time decisions during experiments and analysing outcomes without human intervention.

It works like a smart scientist sitting between the microscope and the computer. The AFM is connected to a computer running its usual control software, which shows raw images and measurements on the screen. AILA "looks" at the images and data coming from the AFM software, decides whether the settings are right, and then sends instructions back to the microscope for adjusting force, speed or resolution, just like a trained researcher would.

It repeats this loop of observing, deciding and correcting in real time until it gets clear, high-quality results. What once took hours of human effort can now be completed in minutes. "AILA helps me with my daily experimental tasks and speeds up my research progress significantly," said Indrajeet Mandal, the first author of the study and a PhD scholar at IIT Delhi's School of Interdisciplinary Research.

"Previously, it would take a full day to optimise microscope parameters. Now, the task is completed in just 7-10 minutes," he said. Explaining the leap this represents, professor NM Anoop Krishnan of IIT Delhi said: "Previously, AI could only help you write about science. Now, it can actually do the science...."

Professor Nitya Nand Gosvami, of the department of material science and engineering, underlined the complexity of the task. "The AFM is one of the most intricate and sensitive instruments in materials research. Operating it requires a deep understanding of nanoscale physics... skills that take researchers years to master. The fact that AILA can autonomously perform these tasks represents a paradigm shift."

The project was the result of a collaboration involving Jitendra Soni and Zaki from IIT Delhi, Morten M Smedskjaer from Aalborg University in Denmark, Katrin Wondraczek from the Leibniz Institute of Photonic Technology in Germany, and Lothar Wondraczek from the University of Jena, Germany.

The path was not without challenges. The researchers found that excellence in answering scientific questions does not translate into competence in laboratory settings. "It's the difference between knowing driving rules versus navigating busy traffic," Mandal said. The study raised safety concerns as AI agents were found to occasionally deviate from instructions. The research was published in Nature Communications.

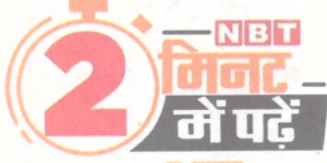
<https://timesofindia.indiatimes.com/city/delhi/ai-agent-conducts-experiments-in-iit-delhi-lab/articleshow/126146418.cms>

*

अब रिसर्च की रफ्तार बढ़ाएगा AI असिस्टेंट, लैब्स में करेगा एक्सपेरिमेंट

Source: NavBharat Times, Dt. 24 Dec 2025

IIT-D ने तैयार किया AILA, उपकरणों से करवाएगा काम



Katyayani.Upreti@timesofindia.com

■ नई दिल्ली: AI सवालों के जवाब देने या क्लासरूम तक सीमित नहीं, बल्कि अब यह लैब में एक्सपेरिमेंट भी करेगा। आईआईटी दिल्ली की टीम ने एक ऐसा AI एजेंट बनाया है, जो रिसर्चर/वैज्ञानिक की जगह लैब में खुद एक्सपेरिमेंट करेगा। टीम ने AILA नाम का एक खास AI लैब असिस्टेंट बनाया है, जो लैब के जटिल इंस्ट्रुमेंट्स पर खुद एक्सपेरिमेंट कर सकेगा।

रिसर्च टीम का कहना है कि यह रिसर्च इंसानी मेहनत को कम करेगी, साथ ही रिसर्च को रफ्तार देगी। टीम का दावा है कि यह दुनिया का पहला AI एजेंट है, जो साइंटिस्ट और रिसर्च स्कॉलर्स की मदद लैब्स में करेगा। यह रिसर्च इंटरनैशनल जर्नल 'नेचर' कम्युनिकेशंस में छपी है। सिविल इंजीनियरिंग एंड यार्डी स्कूल ऑफ AI के प्रोफेसर एन एम अनूप और मटीरियल्स साइंस एंड इंजीनियरिंग के प्रो



IIT-D रिसर्च टीम का दावा है कि यह दुनिया का पहला AI एजेंट है

नित्य नंद गोस्वामी के सुपरविजन में यह रिसर्च की गई है। रिसर्च के पहले लेखक IIT-D के पीएचडी स्टूडेंट इंद्रजीत मंडल (स्कूल ऑफ इंटरडिसिप्लिनरी रिसर्च) बताते हैं, कल्पना करें कि किसी लैब में AI असिस्टेंट खुद माइक्रोस्कोप चला रहा है, इमेज ले रहा है, एक्सपेरिमेंट कर रहा है और डेटा का विश्लेषण भी कर रहा है, बिना हमारी मदद के। हमने यही AILA (आर्टिफिशियल इंटेलिजेंस लैब असिस्टेंट) बनाया है। टीम ने सबसे पहले AI असिस्टेंट को एटॉमिक फोर्स माइक्रोस्कोपी (AFM) में टेस्ट किया है क्योंकि यह एक पावरफुल माइक्रोस्कोप है। प्रो. अनूप कृष्णन बताते हैं, यह तकनीक वैज्ञानिक इकोसिस्टम के लिए बड़ा बदलाव ला सकती है।

कैसे करता है काम

इस टीम में शामिल स्टूडेंट जितेंद्र (मटीरियल साइंस डिपार्टमेंट) समझाते हैं, बड़ी-बड़ी रिसर्च कई पावरफुल इंस्ट्रुमेंट्स पर होती है, जिन्हें चलाने के लिए ट्रेनिंग जरूरी है और ट्रेनिंग में ही 6-6 महीने लग जाते हैं। इंस्ट्रुमेंट को चलाने के लिए 'इंटेलिजेंस' चाहिए तो हमने AI को चुना। लार्ज लैंग्वेज मॉडल (LLM) जैसे चैटजीपीटी, Gemini का इस्तेमाल करके AI को मशीन के साथ जोड़ दिया। जैसे आप चैटजीपीटी में कमांड देते हैं, तो आउटपुट टेक्स्ट में मिलता है। यहां हम प्रॉप्ट यानी कमांड देते हैं, तो AI उस मशीन से काम करवाएगा यानी एक्सपेरिमेंट होगा। हमने एक साल में 100 एक्सपेरिमेंट किए हैं। मेडिकल, जियोलाॉजी, सिविल, एनवायरमेंट समेत कई फील्ड में AILA कारगर होगा। टीम ने पहले AFM चुना है, जो सतह की 3D बनावट, खुरदरापन, मटीरियल की कठोरता, घिपकने की क्षमता, चुंबकीय गुणों की भी जानकारी दे देता है।

*

The Tribune
The Statesman
ਪੰਜਾਬ ਕੇਸਰੀ ਜਨਸੱਤਾ
The Hindu
The Economic Times
Press Information Bureau
The Indian Express
The Times of India
Hindustan Times
नवभारत टाइम्स
दैनिक जागरण
The Asian Age
The Pioneer