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समाचार पत्रों से चयित अंश Newspapers Clippings

A Daily service to keep DRDO Fraternity abreast with DRDO Technologies, Defence Technologies, Defence Policies, International Relations and Science & Technology

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DRDO gives anti-drone tech demo to armed forces after attack on Jammu Air Force base

Synopsis

The system has a detection capability of up to 4 km with 'soft kill' options by way of radio frequency jamming that targets disabling the communication; and GPS spoofing-cum-jamming system that works on neutralising the remote locating system in a drone. Both these options have a range of 3 km.

The Defence Research and Development Organisation (DRDO), following the drone terror attack on an Air Force base in Jammu last month, carried out an urgent demonstration of its anti-drone system at Kolar within a week of the attack for all three services to secure their key locations, assets and installations.

ET has reliably gathered that the DRDO system with all its accompaniments that would involve detection, jamming and countermeasures to engage, is estimated to cost Rs 22 crore a piece if the purchase order is for 100 systems or more.

To scale up production in the light of the Jammu attack, sources said, the DRDO has decided to rope in the Tatas, L&T and the Adani group as ToT (transfer of technology) partners for making this indigenously developed anti-drone system in the private sector. Until now, the DRDO had only designated the defence public sector entity Bharat Electronics Ltd to manufacture the system.

The system has a detection capability of up to 4 km with 'soft kill' options by way of radio frequency jamming that targets disabling the communication; and GPS spoofing-cum-jamming system that works on neutralising the remote locating system in a drone. Both these options have a range of 3 km.

The prospective user also has the choice of opting for the system with just the soft kill abilities. However, the system offers a 'hard kill' option too, which physically detects, targets and destroys a small size object in the range of 150 m to 1 km and possibly more. This essentially means that it can target a system even if it manages to penetrate deep enough.

The DRDO has conveyed to the government that if orders come in time, the systems can be ready in quick time. The forces are separately assessing the number of sites they want protected against drones.

The anti-drone system is usually best suited for guarding specific installations, said officials, though the services are likely to independently explore options overseas. However, the Defence Ministry may want an available made-in-India system to get the go-ahead for now.

The attack on the Jammu airbase, which is now being probed by the NIA, was a wake-up call on the government. The uniform size of the fragments which were created by the explosion, investigators believe, point to military-grade explosive from across the border. While the damage caused was peripheral to the principal installations and assets in the base, sources said, they fall in a pattern of terror groups target military locations in the Jammu-Pathankot region.

Terror outfits have been using drones for surveillance or to make weapons drops. The Border Security Force even brought down one and while it did not have any markings, the assessment was that the drone was probably of Chinese origin.

<https://economictimes.indiatimes.com/news/defence/drdo-gives-anti-drone-tech-demo-to-forces-after-attack/articleshow/84300043.cms>

संजीवनी टुडे

समय के साथ बढ़ता अखबार

Mon, 12 July 2021

अब डीआरडीओ का एंटी-ड्रोन सिस्टम बनायेंगे टाटा, एलएंडटी और अडानी समूह

जम्मू के एयरफोर्स स्टेशन पर 'ड्रोन अटैक' होने के बाद डीआरडीओ ने तीनों सशस्त्र बलों के लिए अपने एंटी-ड्रोन सिस्टम का उत्पादन बढ़ाने का फैसला लिया है।

By Omprakash Bairwa

नई दिल्ली: जम्मू के एयरफोर्स स्टेशन पर 'ड्रोन अटैक' होने के बाद डीआरडीओ ने तीनों सशस्त्र बलों के लिए अपने एंटी-ड्रोन सिस्टम का उत्पादन बढ़ाने का फैसला लिया है। डीआरडीओ टाटा, एलएंडटी, अडानी जैसे उद्योग समूहों को ट्रांसफर ऑफ टेक्नोलॉजी (टीओटी) के रूप में भागीदार बनाकर प्रौद्योगिकी का स्थानांतरण करके एंटी-ड्रोन सिस्टम का उत्पादन करवाएगा। यह सिस्टम तीन किलोमीटर के दायरे में आने वाले छोटे ड्रोन का पता लगाकर उसे जाम कर देता है। इसके साथ ही यह सिस्टम 1 से 2.5 किमी. के दायरे में आए ड्रोन को अपनी लेजर बीम से निशाना बनाते हुए उसे नीचे गिरा देता है।

डीआरडीओ इस एंटी-ड्रोन सिस्टम पर पिछले तीन साल से काम कर रहा है। इस सिस्टम को प्रयोग के तौर पर राष्ट्रपति डोनाल्ड ट्रम्प के अहमदाबाद के मोटेरा स्टेडियम के दौरे के समय, स्वतंत्रता दिवस 2020 और गणतंत्र दिवस 2021 के दौरान वीवीआईपी सुरक्षा के लिए तैनात किया गया था। डीआरडीओ ने जनवरी, 2020 में हिंडन एयरफोर्स स्टेशन पर और अगस्त, 2020 और जनवरी, 2021 में मानेसर में राष्ट्रीय सुरक्षा गार्ड परिसर में विभिन्न सुरक्षा एजेंसियों के लिए अपनी काउंटर-ड्रोन टेक्नोलॉजी का प्रदर्शन किया था। इसके बाद डीआरडीओ ने अपने एंटी-ड्रोन सिस्टम का उत्पादन भारत इलेक्ट्रानिक्स लिमिटेड (बीईएल) को सौंपा था।

अब जम्मू के एयरफोर्स स्टेशन पर 26/27 जून की रात को 'ड्रोन अटैक' होने के बाद डीआरडीओ ने तीनों सशस्त्र बलों के लिए अपने एंटी-ड्रोन सिस्टम का उत्पादन बढ़ाने की योजना बनाई है। इसलिए टाटा, एलएंडटी, अडानी जैसे उद्योग समूहों को ट्रांसफर ऑफ टेक्नोलॉजी (टीओटी) के रूप में भागीदार बनाने का फैसला लिया गया है। इसके लिए निजी कंपनियों को डीआरडीओ से लाइसेंस लेना होगा। इसके बाद डीआरडीओ एंटी-ड्रोन सिस्टम की प्रौद्योगिकी का स्थानांतरण इन उद्योग समूहों को करेगा। टीओटी भागीदार के रूप में टाटा, एलएंडटी और अडानी उद्योग समूह एंटी-ड्रोन सिस्टम का उत्पादन करेंगे। अगले 6 महीनों में ये एंटी-ड्रोन सिस्टम तीनों सेनाओं को मिल सकते हैं। काउंटर-ड्रोन टेक्नोलॉजी सशस्त्र बलों को सुरक्षा के लिए खतरा पैदा करने वाले छोटे ड्रोन का तेजी से पता लगाने, उन्हें रोकने और खत्म करने की ताकत दे सकती है।

डीआरडीओ के एक अधिकारी का कहना है कि यह एंटी ड्रोन सिस्टम हवाई खतरे से निपटने के लिए 'सॉफ्ट किल' यानी ड्रोन को जाम करने और 'हार्ड किल' यानी लेजर बीम से मार गिराने जैसे दोनों ऑप्शन देगा। अधिकारियों ने बताया कि इस सिस्टम में एक रडार है जो 4 किमी. दूर तक माइक्रो ड्रोन का पता लगाने के साथ 360-डिग्री कवरेज देता है। इसमें लगे इलेक्ट्रो-ऑप्टिकल/इन्फ्रारेड सेंसर 2 किमी. तक के माइक्रो ड्रोन का पता लगा सकते हैं। रेडियो फ्रीक्वेंसी डिटेक्टर 3 किमी. तक इस तरह के किसी भी कम्यूनिकेशन का पता लगा सकती है। रडार माइक्रो ड्रोन का पता लगाता है और सेंसर के वेरिफिकेशन के बाद सॉफ्ट किल और हार्ड किल के लिए आगे बढ़ा देता है। एक बार पुष्टि होने के बाद दुश्मन के ड्रोन का सिग्नल जाम करने या लेजर हथियारों के जरिए उस पर अटैक करने के लिए एंटी ड्रोन सिस्टम तैयार होता है। लेजर आधारित हार्ड किल सिस्टम 150 मीटर से 1 किमी. के बीच की दूरी पर माइक्रो ड्रोन को बेअसर कर सकता है।

<https://sanjeevnitoday.com/national/now-tata-iti-and-adani-group-to-make-drdo-anti-drone-system/cid3753777.htm>

mint

Sun, 11 July 2021

DRDO labs will soon be accessible to students of defence tech programme

- *Students will have access to DRDO labs as well as defence PSUs and industries for conducting research and development, according to a fresh government plan to augment manpower in the defence technology space*

New Delhi: Students pursuing M.Tech in defence technology will be given access to by Defence Research and Development Organisation (DRDO) laboratories to conduct research work.

Other than DRDO labs, they shall be offered access to defence PSUs and industries for conducting research and development, according to a fresh government plan to augment manpower in the defence technology space.

This will be applicable to all students who pursue a specialised M.Tech programme that is approved by the DRDO and technical education regulator All India Council for Technical Education (AICTE). Other than students access to DRDO and defence PSU labs, any institute or university that decides to offer this will be eligible to certain grants.

"This M.Tech. defence technology programme can be conducted at any AICTE affiliated institutes/universities, IITs, NITs or private engineering institutes. Institute of Defence Scientists & Technologists (IDST) will provide support to the institutes for conducting this program, which can be conducted in online as well as offline formats." the union government said.

"The programme will be helpful to students seeking opportunities in ever expanding defence research and manufacturing sector," it added. Access to DRDO labs will be helpful for students as it focuses on defence technology, and defence equipment R&D activities and are considered highly sophisticated.

DRDO believes that the initiative will enable creation of a large pool of talented workforce for the defence sector. AICTE chairman Anil Sahasrabudhe said it "will not only generate skilled



DRDO, together with the All India Council for Technical Education, has formulated an M.Tech. in defence technology programme.

manpower pool in defence technology but will also create spin-off benefits in terms of new defence start-ups and entrepreneurs."

India has been talking about improving industry-academia connect and co-creation and promotion of specialised education and R&D efforts. There are some 9,600 professional and technical colleges in the country under the regulatory purview of AICTE, of which 6,000 are engineering and technology colleges.

<https://www.livemint.com/education/news/drdo-labs-to-soon-be-in-reach-of-students-of-defence-tech-programme-11625905754423.html>



Sat, 10 July 2021

Defence PSU Bharat Dynamics Limited to manufacture ‘Akash Missiles’ for Indian Air Force

Bharat Dynamics Limited (BDL), a Hyderabad-based Miniratna Defence Public Sector Undertaking (PSU) has inked a Rs 499 crore contract with the Defence Ministry to manufacture indigenously developed ‘Akash Missiles’ to the Indian Air Force (IAF).

According to the official communique by BDL, the contract was signed by Air Commodore Ajay Singhal of the IAF and Commodore TN Kaul (Retd) on behalf of BDL along with BDL’s Director (Production) P Radhakrishna in New Delhi.

BDL’s Chairman & Managing Director (CMD) Commodore Siddharth Mishra (Retd) said, “BDL is supplying Akash Missiles to the Indian Army and the Indian Air Force. With the announcement from the Union Cabinet regarding clearance of the ‘Akash’ weapon system for export, the company is exploring offering Akash for export to foreign countries.”



“The firm has already received export leads from foreign nations expressing their interest in procuring the missile. BDL has a well-established infrastructure and expertise to execute these orders and meet the customer delivery schedule,” he added.

Decoding Akash Missiles

Akash is an indigenously developed all-weather, air defence weapon missile, which uses a high explosive, pre-fragmented warhead that can engage multiple threats simultaneously. The medium-range mobile surface-to-air missile system has been developed by India’s state-owned Defence Research Development Organisation (DRDO).

The Akash Surface to Air (SAM) system can engage with multiple air targets while operating in fully autonomous mode. The system comprises a launcher, a control centre, a multifunctional fire control radar, a system arming and explosion mechanism, a digital autopilot, C4I (command, control communication and intelligence) centres, ground equipment and an integral mission guidance system.

Designed to be launched from mobile platforms or static such as combat tanks and battle trucks, Akash missiles can handle multiple targets and destroy aerial targets, including Unmanned Aerial Vehicles (UAV), fighter aircraft, cruise missiles and missiles launched from helicopters.

India’s Integrated Guided Missile Development Programme

Akash Missile has been developed under the integrated guided-missile development programme (IGMDP), the programme also involved the development of the Nag, Agni, Trishul missiles, and Prithvi ballistic missile.

Bharat Dynamics Limited has been a prime production agency for projects under the programme. Manufactured by BDL, Akash has been supplied to the Indian Army and the Indian Air Force. The Missile has been successfully test-fired on several occasions and is regarded as one of the best missiles in its category.

Notably, BDL also makes Anti-Tank Guided Missiles, Air to Air Missiles, Air to Surface Weapons, Launchers, Test Equipment, Underwater weapons, and Counter Measure Systems.

In FY 2020-2021, BDL bagged new orders worth about Rs 2,803 crore which included Anti – Tank Guided Missiles order worth about Rs 1,820 crore and Surface to Air Missiles order worth about Rs 793 crore.

Notably, BDL is expanding its footprints globally by offering Air-to-Air Missiles, Anti-Tank Guided missiles, underwater weapons, and Counter Measure Systems in addition to Akash Missiles to foreign countries.

<https://newsonair.com/2021/07/09/defence-psu-bharat-dynamics-limited-to-manufacture-akash-missiles-for-indian-air-force/>

BusinessToday.In

Sat, 10 July 2021

Bharat Dynamics to supply Akash Missiles to Indian Air Force; stock gains 7%

Akash is one of the missiles under India's Integrated Guided Missile Development Programme (IGMDP) being manufactured by Bharat Dynamics Limited (BDL), both for the Indian Army and the Indian Air Force

Share of Bharat Dynamics Limited (BDL) rose 7 per cent to hit an intraday high of Rs 399.00 on BSE after the company announced that it has signed a contract worth about Rs 499 crore with the Ministry of Defence for the manufacturing and supply of Akash Missiles to the Indian Air Force.

The stock ended 2.25 per cent higher at Rs 381.10 against the previous close of Rs 372.70 on BSE. Market cap of the firm rose to Rs 6,984.85 crore.

The stock has gained 12 per cent since the beginning of this year. The share stands higher than 5 day, 10 day and 20 day, 50 day 100 day, 200 day moving averages.

"The company has bagged new orders worth about Rs 2,803 crore (including taxes) during the FY 2020-21 which includes Anti - Tank Guided Missiles order worth about Rs1,820 crore and Surface to Air Missiles order worth about Rs 793 crore," BDL said.

"With the present contract signed for the supply of Akash to Indian Air Force, the order book position now stands at about Rs 8683 crore. The company is also aiming to expand its footprints in the international market by offering Air to Air Missiles, Anti-Tank Guided missiles, underwater weapons and Counter Measure Systems in addition to Akash Missiles to friendly countries," it added.

According to MarketsMojo, the stock is trading at a premium compared to its average historical valuations. The technical trend has improved from mildly bullish on May 21, 2021, to a bullish range and has generated 6.46 per cent returns since then.

However, it noted that with a return on equity (ROE) of 9.6, it has a very expensive valuation with a 2.5 price to book value.



Representative image

"BDL is supplying Akash Missiles to Indian Army and Indian Air Force. With the announcement from the Union Cabinet regarding clearance of the Akash Weapon System for Export, the company is exploring offering Akash for export to foreign countries. BDL has already received export leads from some countries expressing interest in procuring the Missile. The company has a well-established infrastructure and expertise to execute these orders and meet the customer delivery schedule," said CMD, BDL Commodore Siddharth Mishra (Retd).

BDL is the prime production agency for projects under India's Integrated Guided Missile Development Programme (IGMDP). Akash is one of the missiles under India's Integrated Guided Missile Development Programme (IGMDP) being manufactured by BDL, both for the Indian Army and the Indian Air Force. The Missile has been successfully test-fired on several occasions and is regarded as one of the best missiles in its category.

The company also manufactures Anti-Tank Guided Missiles, Air to Air Missiles, Air to Surface Weapons, Launchers, Test Equipment, Underwater weapons, and Counter Measure Systems.

<https://www.businesstoday.in/markets/stocks/story/bharat-dynamics-to-supply-akash-missiles-to-indian-air-force-stock-gains-7-300903-2021-07-09>



Sat, 10 July 2021

Greece must equip its Rafale Jets with Indian BrahMos Cruise Missiles – Greek Media

By Apoorva Jain

After acquiring French Rafale fighter jets, will Greece acquire Indian BrahMos cruise missile to enhance its deterrence capabilities and cement defense relations between the two countries.

In a mission to overhaul its armed forces and military arsenal, Athens could partner New Delhi, saying India's production of weapon systems "could change the course of things," for the European nation. The BrahMos missile would be a formidable weapon in the new French-made aircraft, which would cause panic in Ankara in combination with the ability of Greek pilots, Greek news portal Pentapostagma reported.

This development assumes significance as it comes amid deepening security and defense ties between Turkey and Pakistan.

In a recent visit to Pakistan, General Ümit Dündar of the Turkish Land Forces was conferred the Nishan-e-Imtiaz or "Order of Excellence", a prestigious military award by Pakistan's President Arif Alvi at the President House in Islamabad.

Earlier, the Greek media quoted Indian military analyst Maj. Gen. GD Bakshi (retd.) as saying that an alliance between Greece and India would help counter Turkey, China, and Pakistan.

The Acquisition of Rafael Jets

In January 2021, Greece became the first European customer of the French Rafales when it signed a deal worth \$2.8 billion to procure 18 fighter jets.

Under the contract, Greece will procure 12 second-hand jets which will be taken out of the French Air Force inventory and 6 new ones to be delivered by the end of 2022.

The government spokesperson Christos Tarantilis told the press that the deal with France is part of a wider five-year plan to strengthen the Greek Armed Forces' deterrence abilities, discreetly



The BrahMos missile being launched from IAF's Sukhoi-30 MKI in the Bay of Bengal. (Via Twitter)

referring to rising threats from Turkey. In May 2021, a delegation led by the Defense Attaché of the Indian Embassy in Prague, Colonel Anupam visited Greece and held talks on boosting bilateral defense relations between Athens and New Delhi.

“Greece and India need to develop stronger ties. We see that there is an alliance between France, Israel, the UAE, Greece, and India. These countries can make Greece even stronger,” said Rajan Kochhar while targeting the Turkey-Pakistan alliance.

Last month, External Affairs Minister S. Jaishankar visited Greece in which the Greek Foreign Minister signed and handed over the Agreement on the International Solar Alliance (ISA) to India and both sides agreed to work towards the establishment of a strategic partnership.

India’s BrahMos Missile

The BrahMos cruise missile system is a joint venture between India’s Defence Research and Development Organisation (DRDO) and Russia’s NPO Mashinostroyeniya (NPOM).

The first supersonic cruise missile capable of flying at a speed of Mach 2.8 (almost three times the speed of sound) in the world, BrahMos, has a two-stage missile system with a range of 290 km.

After developing land and naval variants, an air variant called BrahMos-A with an extended range of 500 km was successfully tested in November 2017 by the Indian Air Force from its Sukhoi-30 MKI fighter jet, completing the military triad.

To boost the missile as an export commodity, the development of a mini-version or BrahMos-NG (next-generation) is underway. It will be more powerful with a speed of Mach 3.5 and a similar range of 290 km but almost half the weight and 3 meters shorter than the original.

All three — land, air and sea variants — will be launched between 2022-2024.

Moreover, several tests are being conducted to further extend the range to 400 km, 800 km and 1500 km. In November 2020, the Indian Army conducted live drills with a 290-plus BrahMos missile in Andaman and Nicobar Islands.

India and Russia are also looking to develop a hypersonic variant of the BrahMos missile, capable of flying five times the speed of sound (Mach 5) with a range of 800 km and 1500 km.

BrahMos Goes Global

India has been keen to export the BrahMos missile to “friendly countries” to boost its image and reach the goal of \$5 billion defense exports by 2025.

Entering the Missile Technology Control Regime (MTCR) as a full member in 2016 has made India a credible global producer and exporter of advanced missiles.

MTCR is a 35-member multilateral export control regime that has indirect control of missile technology and export. During the Aero India 2021, a list of 156 defense items cleared for export was released, including some of India’s most advanced weapon systems like BrahMos supersonic cruise missiles. In March, India and the Philippines inked a significant defense pact that will ease the process of military exports. Known as the “Implementing Arrangement”, it is a critical step for the sale of “defense material and equipment”. Other ASEAN countries which have displayed interest in the BrahMos missile include Indonesia, Thailand, Malaysia, Singapore, and Vietnam.

In other parts of the world, the Middle East (UAE, Qatar, and Saudi Arabia); South America (Brazil, Argentina and Chile) & Eastern Europe (Bulgaria) and South Africa, Egypt, South Korea have also shown interest in the Indo-Russian Missile, according to reports.

India is also eyeing the Indian Ocean Region (IOR) countries as a potential defense partner to prevent China from entering the region. For this purpose, during the Aero India 2021, a separate IOR Defence Conclave was set up to engage researchers and high-level defense officials in Indian manufactured military products.

The coming of Greece on board will be a major milestone for India as it will be able to break into the monopoly of the European defense market.

<https://eurasianimes.com/greece-must-equip-its-rafale-jets-with-indian-brahmos-cruise-missiles-greek-media/>

THE TIMES OF INDIA

Sat, 10 July 2021

MSN Labs inks licencing pact with DRDO for Covid-19 drug 2-DG

By Swati Bhardwaj

Hyderabad: Pharma player MSN Laboratories Pvt Ltd (MSN) has entered into a license agreement with the Defence Research & Development Organisation (DRDO) for the manufacturing, distribution and marketing of Covid-19 drug 2-Deoxy-D-Glucose (2-DG) in India.

The oral drug has been granted permission by the Drugs Controller General of India (DCGI) for emergency use as adjunct therapy in moderate to severe Covid-19 patients.

MSN said it will be launching the drug under the brand name MSN 2D in sachet form as a twice a day product in strength of 2.34 g.

The drug comes in a powder form and has to be taken by dissolving in water. It works by accumulating in virus infected cells and prevents growth of the virus by stopping energy production and viral synthesis.

MSN said while it has already rolled out anti-viral medication like Oseltamivir capsules and anti-Covid drugs like Favipiravir and Baricitinib as well as antifungal drugs like Posaconazole in the fight against Covid-19, it is also conducting clinical trials for investigational drugs.

These include Aviptadil for which it is conducting clinical trials on severe hospitalized patients and with Molnupiravir on mild and moderate Covid-19 patients.

<https://timesofindia.indiatimes.com/business/india-business/msn-labs-inks-licencing-pact-with-drdo-for-covid-19-drug-2-dg/articleshow/84260919.cms>



DRDO's Covid drug comes in a powder form and has to be taken by dissolving in water

COVID-19 Vaccine: MSN Laboratories enters into licence agreement with DRDO for 2-DG

MSN Laboratories has entered into a licence agreement with DRDO for the manufacturing, distribution, and marketing of the 2-Deoxy-D-Glucose (2-DG) COVID-19 vaccine in India. Read all you need to know

By Roopashree Sharma

MSN Laboratories Pvt. Ltd on July 9, 2021, announced that it has entered into a licence agreement with the Defence Research and Development Organization (DRDO) for the manufacturing, distribution, and marketing of the 2-Deoxy-D-Glucose (2-DG) COVID-19 vaccine in India.

“MSN Laboratories Pvt. Ltd today announced it has entered into licence agreement with Defense Research and Development Establishment (DRDE) and Institute of Nuclear Medicine and Allied Sciences (INMAS), both establishments of DRDO for the manufacturing, distribution, and marketing of 2-DG COVID-19 vaccine in India,” read the official release.

MSN Laboratories (MSN Group) is a research-based pharmaceutical company based in Hyderabad, India.

About 2-DG COVID-19 vaccine

- The 2-DG COVID-19 vaccine is an oral drug. The vaccine has been developed by the Defense Research and Development Establishment (DRDE) and Institute of Nuclear Medicine and Allied Sciences (INMAS), establishments of the Defence Research and Development Organization (DRDO).
- The 2-DG vaccine has been granted permission by the Drug Controller General of India (DGCI) on May 1, 2021, for Emergency Use as adjunct therapy on patients with moderate to severe COVID-19 infection.
- The MSN laboratories will launch the 2-DG vaccine as a twice a day product in powder format in a sachet under the brand name MSN 2D in the strength of 2.34g. The vaccine is to be consumed orally by dissolving in water.
- The vaccine is to be administered only under prescription and under the supervision of a physician to patients hospitalized with moderate to severe COVID-19 as an adjunct therapy.

How does 2-DG COVID-19 vaccine work?

- The oral COVID-19 vaccine accumulates in the virus-infected cells and stops viral synthesis and energy production thus preventing further growth of the virus.
- The selective accumulation of the vaccine in virally infected cells makes the **vaccine unique**.
- As per the Health Ministry, the 2-DG vaccine is reported to reduce the average recovery time of a COVID-19 patient by two and a half days and increase the oxygen demand up to 40 per cent.

Other COVID-19 treatment range by MSN Laboratories

- As a part of the COVID-19 treatment range, MSN Laboratories has launched:
- Anti-viral medication such as Oseltamivir capsules under the brand name ‘OSELOW’.
- Anti-COVID medications such as Favipiravir under the brand name ‘FAVILOW’ and Baricitinib under the brand name ‘BARIDOZ’.
- Anti-fungal medication Posaconazole under the brand name ‘POSAONE’.

<https://www.jagranjosh.com/current-affairs/covid19-vaccine-msn-laboratories-enters-into-licence-agreement-with-drdo-for-2dg-1625829895-1>

तीसरी लहर से पहले राहत की सांस

कोरोना की संभावित तीसरी लहर आने से पहले जिले को राहत की सांस मिल गई है। श्रीमंत माधवराज सिंधिया जिला अस्पताल में मेडिकल ऑक्सीजन प्लांट अगले हफ्ते से शुरू हो जाएगा। ऑक्सीजन प्लांट के लिए सभी जरूरी उपकरण आ चुके हैं। शुक्रवार शाम को एक ट्रक में भरकर सूरत से ये उपकरण जिला अस्पताल पहुंच गए।

By Sumit Kumar

विदिशा: कोरोना की संभावित तीसरी लहर आने से पहले जिले को राहत की सांस मिल गई है। श्रीमंत माधवराज सिंधिया जिला अस्पताल में मेडिकल ऑक्सीजन प्लांट अगले हफ्ते से शुरू हो जाएगा। ऑक्सीजन प्लांट के लिए सभी जरूरी उपकरण आ चुके हैं। शुक्रवार शाम को एक ट्रक में भरकर सूरत से ये उपकरण जिला अस्पताल पहुंच गए। अब मशीनों का इंस्टालेशन होने के बाद जल्द ही ऑक्सीजन प्लांट शुरू हो जाएगा।

कोरोना की दूसरी लहर में ऑक्सीजन का संकट झेलने के बाद केंद्र सरकार ने जिला अस्पतालों में ऑक्सीजन प्लांट लगाने का निर्णय लिया था। पीएम केयर्स फंड के जरिए सरकार ने रक्षा अनुसंधान एवं विकास संगठन यानि डीआरडीओ को ये प्लांट लगाने की जिम्मेदारी सौंपी। पिछले कुछ माह से विदिशा जिले में इसकी तैयारी की जा रही थी। पहले एक प्लांट मेडिकल कॉलेज परिसर में बन रहा था लेकिन अब जिला अस्पताल में बन रहा है। डेढ़ माह पहले ही जिला अस्पताल परिसर में प्लांट लगाने शेड बनाने की शुरुआत हुई थी। प्लांट में उपकरणों को लगाने के लिए डीआरडीओ से एक इंजीनियर भी आया है। इसके शुरु होने के बाद जिला अस्पताल सहित मेडिकल कॉलेज में बने कोविड केयर सेंटर में आने वाले कोरोना मरीजों को ऑक्सीजन की कमी नहीं होगी। इधर शुक्रवार शाम को कलेक्टर डॉ पंकज जैन भी अस्पताल पहुंचे और प्लांट स्थल का जायजा लिया।

1000 लीटर/मिनिट ऑक्सीजन बनाने की क्षमता

जिला अस्पताल में प्रसूति वार्ड के पास बन रहे मेडिकल ऑक्सीजन प्लांट में एक हजार लीटर प्रति मिनिट की क्षमता से आक्सीजन बन सकेगी। ये प्लांट ऑक्सीजन कंसंट्रेटर की तरह काम करेगा यानि हवा खींचकर उसे कम्प्रेस कर शुद्ध ऑक्सीजन बनाएगा जिसे पाइपलाइन के जरिए अस्पताल में भर्ती मरीजों के बेड तक पहुंचाई जाएगी। इससे रोजाना 150 से ज्यादा मरीजों को आक्सीजन की पूर्ति हो सकेगी वहीं 190 सिलिंडर प्रतिदिन चार्ज हो सकेंगे। आरएमओ डॉ प्रमोद मिश्रा ने बताया कि सूरत से ट्रक में आए इन उपकरणों में जनरेशन प्लांट, स्टोरेज टैंक और एक कम्प्रेसर मशीन है। इन मशीनों को इंस्टाल करने सूरत से इंजीनियर भी जिला अस्पताल पहुंचे हैं जो प्लांट को शुरू करेंगे।

150 फीट लंबी ऑक्सीजन पाइप लाइन बिछाई

इधर ऑक्सीजन प्लांट के लिए नेशनल हाइवे ने शेड तैयार कर दिया है। प्लांट शुरू होने से पहले जिला अस्पताल प्रबंधन ने यहां प्लांट से अस्पताल तक ऑक्सीजन पाइप लाइन बिछा दी है। जिला अस्पताल के स्टोर प्रभारी सनमान अहिरवार ने बताया कि प्लांट से लेकर बेसमेंट स्थित अस्पताल के मेनीफोल्ड तक करीब 150 फीट लंबी ऑक्सीजन की पाइप लाइन बिछाई है। इसी लाइन के जरिए प्लांट से बनी ऑक्सीजन मेनीफोल्ड तक आएगी और यहां से अलग अलग लाइनों के जरिए वार्डों में पहुंच जाएगी। इसके अलावा बिजली सप्लाई की तैयारी चल रही है।

मेडिकल कॉलेज में भी बन रहा था प्लांट

इससे पहले मेडिकल कॉलेज परिसर में भी ऑक्सीजन प्लांट बन रहा था इसके लिए एमपीआरडीसी द्वारा शेड भी बनाया जा चुका था। इसे 15 मई तक शुरू होना था। इसकी क्षमता 600 लीटर प्रति मिनिट थी और इसे मप्र सरकार बनवा रही थी, लेकिन अस्पताल में केंद्र सरकार से प्लांट स्वीकृत होने के बाद इसका काम बंद हो गया। अधिकारी भी मेडिकल कॉलेज में प्लांट शुरू होने को लेकर कम ही संभावना बता रहे हैं। डीन डॉ सुनील नंदेश्वर का कहना है कि वर्तमान में जो प्लांट लग रहा है वह उससे भी बड़ा है जिससे पर्याप्त ऑक्सीजन मिलेगी।

इनका कहना है

दो से तीन दिन में शुरू होगा

ऑक्सीजन प्लांट की तैयारी हो गई है। सभी जरूरी उपकरण आ गए हैं, जिनका इंस्टालेशन किया जा रहा है। इस प्लांट में एक हजार लीटर प्रति मिनिट ऑक्सीजन जनरेट करने की क्षमता है। संभवता अगले दो से तीन दिन में ऑक्सीजन प्लांट शुरू करा दिया जाएगा।

- संजय खरे, सिविल सर्जन एवं प्रभारी सीएमएचओ

<https://www.naidunia.com/madhya-pradesh/vidisha-vidisha-news-6965054>

अमर उजाला

Mon, 12 July 2021

तीसरी लहर में ऑक्सीजन की नहीं होगी कमी, दो प्लांट चालू

तीसरी लहर अगर आई तो ऑक्सीजन की नहीं होगी कमी, दो प्लांट शुरू

झांसी: कोरोना की तीसरी लहर से निपटने के लिए हो रहे प्रयासों का असर दिखने लगा है। रविवार को जिला अस्पताल और मेडिकल कॉलेज में ऑक्सीजन प्लांट शुरू कर दिए गए। खास बात रही कि डीआरडीओ की तरफ से जल्दी प्लांट उपलब्ध करा देने की वजह से मेडिकल कॉलेज में समय से 11 दिन पहले प्लांट चालू हो गया।

कोरोना की दूसरी लहर में कुछ दिनों के लिए ऑक्सीजन की किल्लत हो गई थी। लोग ऑक्सीजन का सिलिंडर लेने के लिए भागदौड़ कर रहे थे। अगस्त-सितंबर में कोरोना की तीसरी लहर आने की आशंका जताई जा रही है। इसके लिए सरकार ने प्रदेश के हर जिले समेत झांसी में मेडिकल कॉलेज, जिला अस्पताल समेत दस चिकित्सा इकाइयों में ऑक्सीजन प्लांट की स्थापना की मंजूरी दी। रविवार को विधि विधान से पूजन के बाद जिला अस्पताल, मेडिकल कॉलेज में प्लांट का लोकार्पण हो गया। इस दौरान सदर विधायक रवि शर्मा ने बताया कि मेडिकल कॉलेज में ऑक्सीजन गैस प्लांट पीएम केयर द्वारा स्वीकृत किया गया है, जिसे डीआरडीओ ने स्थापित किया है। मेडिकल कॉलेज में स्थापित प्लांट की क्षमता 1000 लीटर प्रति मिनिट और जिला अस्पताल में लगे प्लांट की क्षमता 850 लीटर प्रति मिनिट ऑक्सीजन सप्लाई करने की है। इस दौरान महानगर अध्यक्ष मुकेश मिश्रा, डीएम आंद्रा वामसी, सीडीओ शैलेश कुमार, एडी हेल्थ डॉ. अर्चना बरतारिया, डॉ. एनएस सेंगर, डॉ. अंशुल जैन, डॉ. हरीशचंद्र आर्या, डॉ. नीरज बनौरिया, डॉ. आनंद चौबे मौजूद रहे।

<https://www.amarujala.com/uttar-pradesh/jhansi/if-the-third-wave-comes-there-will-be-no-shortage-of-oxygen-two-plants-started-jhansi-news-jhs1992991133>

तीसरी लहर से पहले सांसों का संकट दूर करने में जुटी नेशनल हाईवे अथारिटी

देशभर में हाईवे बनाने की जिम्मेदारी निभा रही नेशनल हाईवे अथारिटी
आफ इंडिया अब मरीजों को सांस उपलब्ध करवाने में भी जुट गई है।

जालंधर: देशभर में हाईवे बनाने की जिम्मेदारी निभा रही नेशनल हाईवे अथारिटी आफ इंडिया अब मरीजों को सांस उपलब्ध करवाने में भी जुट गई है। केंद्र सरकार के आदेश पर पंजाब के अस्पतालों में आक्सीजन प्लांट स्थापित करने का काम युद्धस्तर पर किया जा रहा है। पंजाबभर के 42 सरकारी अस्पतालों में ये प्लांट लगेंगे। प्लांट लगने के बाद न केवल आक्सीजन का संकट दूर होगा बल्कि बाहर से आक्सीजन की निर्भरता भी खत्म हो जाएगी।

हाईवे अथारिटी जालंधर के पीडी (प्रोजेक्ट डायरेक्टर) कार्यालय की तरफ से जालंधर, नकोदर, कपूरथला, होशियारपुर, दसूहा, गढ़शंकर, नंगल, नवांशहर और पठानकोट में ये प्लांट स्थापित किए जा रहे हैं। आक्सीजन प्लांटों की मशीनरी डिफेंस रिसर्च एंड डेवलपमेंट आर्गेनाइजेशन (डीआरडीओ) ने हाईवे अथारिटी को मुहैया करवाई है। प्लांट से सीधे मरीज के बेड तक आक्सीजन पहुंचाई जाएगी। होशियारपुर और कपूरथला के अस्पतालों में तो मशीनरी इंस्टाल भी की जा चुकी है और बाकी बचे सात प्लांटों में काम युद्धस्तर पर जारी है। प्रत्येक प्लांट की क्षमता (लिट्रिड/मिनट) एलपीएम जरूरत के मुताबिक तय की गई है। जुलाई में ही सभी नौ प्लांटों के वर्किंग में आ जाने का लक्ष्य निर्धारित किया गया है।



दूसरी लहर में आई थी भारी किल्लत

कोरोना की दूसरी लहर के दौरान पंजाब में जिदगी से जंग लड़ रहे मरीजों को आक्सीजन की भारी किल्लत हुई थी। इंडस्ट्री की आक्सीजन सप्लाई बंद कर दी गई थी और अन्य प्रदेशों से लिक्विड आक्सीजन का प्रबंध करना पड़ा था। रेलवे और इंडियन आयल की तरफ से भी जालंधर में लिक्विड आक्सीजन मुहैया करवाई गई थी। भविष्य में ऐसी किसी भी परिस्थिति से निपटने के लिए प्लांट लगाए जा रहे हैं। काम जल्दी हो इसलिए हाईवे अथारिटी को इसकी जिम्मेदारी सौंपी गई।

<https://www.jagran.com/punjab/jalandhar-city-nhai-working-on-making-oxygen-plant-befor-third-wave-of-corona-21822840.html>

जिला अस्पताल व मेडिकल कॉलेज में सांसद ने किया ऑक्सीजन प्लांट का लोकार्पण

By Dilkush Meena

झांसी: सांसद झांसी-ललितपुर अनुराग शर्मा, विधायक सदर रवि शर्मा व नगर अध्यक्ष मुकेश मिश्रा ने जिला चिकित्सालय एवं महारानी लक्ष्मीबाई मेडिकल कॉलेज में स्थापित पीएसए ऑक्सीजन प्लांट का फीता काटकर लोकार्पण किया। उन्होंने लोकार्पण के अवसर पर अपने सम्बोधन में कहा कि कोविड-19 की द्वितीय लहर के दौरान जनपद में जो ऑक्सीजन की कमी हुई उसको पूरा करने के लिए मेडिकल कॉलेज में स्थापित ऑक्सीजन प्लांट पीएम केयर फण्ड द्वारा प्रदत्त किया गया है, जो कि डीआरडीओ द्वारा लगाया गया है। उन्होंने बताया कि जिला अस्पताल में इंद्रप्रस्थ गैस लिमिटेड द्वारा सीआरएस ऑक्सीजन गैस प्लांट स्थापित किया गया है। अब दोनों ऑक्सीजन प्लांट के लग जाने से जनपद व जिला चिकित्सालय पुरुष व महिला चिकित्सालय में ऑक्सिजन की कमी नहीं होगी।

सांसद अनुराग शर्मा ने मुख्य चिकित्सा अधिकारी को निर्देशित किया गया कि कोविड-19 को दृष्टिगत रखते हुए तृतीय लहर से बचने के लिये टीकाकरण जन जागरूकता अभियान चलाकर जनपद में सभी का टीकाकरण अतिशीघ्र कराया जाय। उन्होंने कोविड-19 के कठिन परिस्थितियों में जनपद के प्रशासन, डाक्टरों एवं नर्सों आदि स्टाफ द्वारा किये गये कार्यों की प्रशंसा कर सभी के प्रति धन्यवाद भी ज्ञापित किया।

जिलाधिकारी ने भी दी जानकारी

जिलाधिकारी आंद्रा वामसी ने कहा कि जनपद के यह दोनों ऑक्सीजन प्लांट सांसद के विशेष प्रयास एवं सहयोग से पूर्ण हुआ है। आज बड़े हर्ष का दिन है। उन्होंने बताया कि जिला अस्पताल में स्थापित प्लांट की क्षमता 850 लीटर प्रति मिनट है, यह प्लांट इंद्रप्रस्थ गैस लिमिटेड आईजीएल द्वारा सीआरएस के तहत स्थापित किया गया है। महारानी लक्ष्मी बाई मेडिकल कॉलेज में ऑक्सीजन प्लांट गैस पीएम केयर द्वारा स्वीकृत किया गया जिसे डीआरडीओ द्वारा बनाकर स्थापित किया गया है। इस प्लांट की क्षमता 1000 लीटर प्रति मिनट है। उन्होंने बताया कि इन प्लांट द्वारा जिला चिकित्सालय एवं जिला महिला चिकित्सालय में नवनिर्मित पीकू वार्ड में भी आपूर्ति की जायेगी।

ये रहे उपस्थित

इस अवसर पर विधायक सदर रवि शर्मा, नगर अध्यक्ष मुकेश मिश्रा, मुख्य विकास अधिकारी शैलेश कुमार, एडी हेल्थ डॉ अल्पना बरतारिया, मुख्य चिकित्सा अधिकारी डॉ. जीके निगम, प्रधानाचार्य मेडिकल कॉलेज डॉ एनएस संगर, उप प्राचार्य डॉ अंशुल जैन, सीएमएस डा.हरीश चंद्र, डा.नीरज बरोनिया, डा.आनंद चैबे, मुख्य चिकित्सा अधीक्षक जिला चिकित्सालय, मुख्य चिकित्सा अधीक्षक महिला चिकित्सालय, सहित सम्बन्धित विभागों के अधिकारी एवं संस्थाओं के अधिकारीगण तथा चिकित्सालय के कर्मचारी आदि उपस्थित रहे।

<https://sanjeevnitoday.com/madhya-pradesh/mp-inaugurated-oxygen-plant-in-district-hospital-and/cid3755769.htm>

एम्स ऋषिकेश के विस्तारीकरण के लिए 200 एकड़

भूमि मांगी, निदेशक ने मुख्यमंत्री से की भेंट

अखिल भारतीय आयुर्विज्ञान संस्थान (एम्स) ऋषिकेश के निदेशक पद्मश्री प्रोफेसर रवि कांत ने सूबे के मुख्यमंत्री पुष्कर सिंह धामी से शिष्टाचार भेंट की। इस दौरान निदेशक एम्स ने मुख्यमंत्री को संस्थान में कोविड-19 की संभावित तीसरी वेब के मद्देनजर की गई जरूरी तैयारियों से अवगत कराया।

By Sumit Kumar

ऋषिकेश: अखिल भारतीय आयुर्विज्ञान संस्थान (एम्स) ऋषिकेश के निदेशक पद्मश्री प्रोफेसर रवि कांत ने सूबे के मुख्यमंत्री पुष्कर सिंह धामी से शिष्टाचार भेंट की। इस दौरान निदेशक एम्स ने मुख्यमंत्री को संस्थान में कोविड-19 की संभावित तीसरी लहर के मद्देनजर की गई जरूरी तैयारियों से अवगत कराया। साथ ही एम्स के विस्तारीकरण के लिए लंबित 200 एकड़ भूमि की उपलब्धता प्रकरण पर विस्तारपूर्वक चर्चा की।



गुरुवार रात्रि एम्स निदेशक पद्मश्री प्रो. रवि कांत ने मुख्यमंत्री पुष्कर सिंह धामी से देहरादून में मुलाकात कर उन्हें राज्य का मुख्यमंत्री जाने पर बधाई दी। निदेशक ने मुख्यमंत्री को एम्स ऋषिकेश में मरीजों को उपलब्ध कराई जा रही वर्ल्ड क्लास स्वास्थ्य सेवाओं से अवगत कराया। बताया कि एम्स में उत्तराखंड ही नहीं बल्कि उत्तरप्रदेश, दिल्ली, हिमाचल प्रदेश समेत कई राज्यों से नियमित तौर पर मरीज उपचार कराने पहुंच रहे हैं। उन्होंने कोविड की तीसरी लहर की आशंका के मद्देनजर संस्थान में की गई जरूरी तैयारियों से अवगत कराया। बताया कि आईडीपीएल में संचालित डीआरडीओ के 400 बेड के अस्पताल के अतिरिक्त तीसरी लहर के मद्देनजर एम्स में बच्चों के लिए 100 बेड का एनआइसीयू व वयस्कों के लिए 200 अतिरिक्त बेड का वेंटिलेटर युक्त आईसीयू तैयार किया है। जिसमें विश्वस्तरीय सुविधाएं उपलब्ध कराई गई हैं।

साथ ही कोविड-19 की तीसरी लहर से निबटने के लिए डीआरडीओ के अस्पताल में उपलब्ध चिकित्सकों, नर्सिंग आफिसर्स, तकनीकी स्टाफ आदि मैनुपावर का उपयोग संस्थान में किया जाएगा। उन्होंने बताया कि चूंकि कोरोना वायरस बार-बार अपने स्वरूप में बदलाव कर रहा है और हर बार और अधिक आक्रामक रूप अख्तियार कर रहा है, लिहाजा हमें वैक्सीनेशन पर जोर देना होगा। उन्होंने कहा कि यदि हम सभी लोग यह जरूरी सावधानियां बरतते हैं तो कोविड की तीसरी लहर को टाला जा सकता है।

प्रो. रवि कांत ने मुख्यमंत्री को बताया कि एम्स की अब तक करीब आधी परियोजना ही बनकर तैयार हो पाई है। जबकि समग्र परियोजना को धरातल पर उतारने के लिए विस्तारीकरण हेतु संस्थान को 200 एकड़ अतिरिक्त भूमि की नितांत आवश्यकता है। जिसके लिए राज्य सरकार को पूर्व में प्रस्ताव भेजकर भूमि उपलब्ध कराने की मांग की जा चुकी है। मगर, अरसे बाद भी इस दिशा में कोई ठोस कार्रवाई नहीं हो पाई है। जिससे परियोजना का विस्तारीकरण लंबित है। उन्होंने बताया कि इससे मरीजों को कई आवश्यक उपचार देने में तकनीकी दिक्कतें पेश आ रही हैं और कई मर्तबा मरीजों को अतिरिक्त उपचार के लिए अन्यत्र एम्स संस्थानों के लिए रेफर करना पड़ता है। लिहाजा निदेशक एम्स ने उनसे एम्स परियोजना के विस्तारीकरण के लिए जल्द से जल्द 200 एकड़ अतिरिक्त भूमि उपलब्ध कराने का आग्रह किया है।

मुख्यमंत्री पुष्कर सिंह धामी ने इस दिशा में जल्द कार्रवाई अमल में लाने की बात कही। जिससे एम्स जैसी परियोजना के विस्तारीकरण में अनावश्यक विलंब से मरीजों को किसी तरह की दिक्कतें नहीं आएंगे।

<https://www.jagran.com/uttarakhand/dehradun-city-director-of-aiims-rishikesh-padma-shri-professor-ravi-kant-called-on-cm-pushkar-singh-dhami-21815784.html>



Sat, 10 July 2021

Tiruchi hospital to get three new oxygen plants shortly

First plant, to benefit 150 beds, installed

By Kathelene Aantony

Tiruchi: A 350-litre Pressure Swing Adsorption (PSA) oxygen plant was installed at Tiruchi Mahatma Gandhi Memorial Government Hospital on Friday morning. While this plant will be able to supply oxygen for up to 150 beds, civil work to install two more such plants are under way.

The PSA plant, a special oxygen production unit, will augment the oxygen capacity at the hospital. It uses a technology where a specific gas can be separated from a mixture of gases under pressure. Similar plants of various capacities have been installed at Perambalur District Headquarters Hospital and Nagapattinam District Headquarters Hospital.

For two blocks

This plant, erected near the Ophthalmology Department, has been donated by a business establishment in Coimbatore and costs around ₹50 lakh, a hospital official said. It will provide oxygen to the two adjacent blocks.

Meanwhile, work to install a 1,000-litre capacity PSA plant to supply oxygen to 600 beds at the Super Speciality Block is also under way. “Defence Research and Development Organisation (DRDO) is manufacturing this plant,” the doctor said.

A third plant, also of 350-litre capacity, will come up next to the Maternity and Labour ward. “This is to help provide oxygen to children who might require oxygen. Experts are saying that the next wave of COVID-19 will affect children and we are doing everything we can to prepare for it,” the doctor said. Pipelines to supply oxygen to the wards are in place and small repair works are under way, the doctor said.

To know vacancy

The hospital is also creating a triage centre wherein patients’ vitals can be checked immediately, following which they can be sent to designated wards. Civil work for it, including constructing a temporary shed, is under way. “During the peak of the second wave, we had to call up doctors in charge at various wards to check for vacancy of beds, and patients had to wait till then. In this triage ward, they will get a bed, and even get oxygen from the PSA plant while waiting to get admitted in the ward,” he said. In case the number of cases does not increase to that level, it can be utilised as a post-COVID Care Centre, he added.

<https://www.thehindu.com/news/cities/Tiruchirapalli/tiruchi-hospital-to-get-three-new-oxygen-plants-shortly/article35237043.ece>



A Pressure Swing Adsorption oxygen plant being installed at Tiruchi Mahatma Gandhi Memorial Government Hospital. | Photo Credit: M. Srinath

Defence Strategic: National/International



Press Information Bureau
Government of India
Ministry of Defence

Fri, 09 July 2021 12:23PM

Raksha Mantri Shri Rajnath Singh holds telephonic conversation with Deputy Prime Minister & Defence Minister of Israel;

Stresses on deepening defence cooperation & advancing strategic partnership with Israel

Raksha Mantri Shri Rajnath Singh held a telephonic conversation with Deputy Prime Minister and Minister of Defence of Israel Lt Gen (Res) Benjamin Gantz on July 09, 2021. Shri Rajnath Singh congratulated Lt Gen (Res) Benjamin Gantz on assuming the charge of Deputy Prime Minister and Minister of Defence of Israel.

In a tweet after the telephonic conversation, the Raksha Mantri said he looks forward to working closely with Israel to deepen defence cooperation and advance the strategic partnership. He also thanked Lt Gen (Res) Benjamin Gantz for the assistance provided to India by Israel for handling the COVID-19 pandemic.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1734136>



पत्र सूचना कार्यालय
भारत सरकार
रक्षा मंत्रालय

Fri, 09 July 2021 12:23PM

रक्षा मंत्री श्री राजनाथ सिंह ने इज़राइल के उप प्रधानमंत्री और रक्षा मंत्री के साथ टेलीफोन पर बातचीत की

उन्होंने इजरायल के साथ रक्षा सहयोग को मजबूत बनाने और रणनीतिक साझेदारी को आगे बढ़ाने पर जोर दिया

रक्षा मंत्री श्री राजनाथ सिंह ने आज इज़राइल के उप प्रधानमंत्री और रक्षा मंत्री लेफ्टिनेंट जनरल (रेस) बेंजामिन गैंटज़ के साथ टेलीफोन पर बातचीत की। श्री राजनाथ सिंह ने लेफ्टिनेंट जनरल (रेस) बेंजामिन गैंटज़ को इज़राइल का उप प्रधानमंत्री और रक्षा मंत्रीका कार्यभार संभालने पर बधाई दी।

टेलीफोन पर बातचीत के बाद एक ट्वीट में, रक्षा मंत्री श्री राजनाथ सिंह ने कहा कि वह रक्षा सहयोग को मजबूत बनाने और रणनीतिक साझेदारी को आगे बढ़ाने के लिए इजराइल के साथ मिलकर काम करने के लिए बहुत उत्सुक हैं। श्री राजनाथ सिंह ने कोविड-19 महामारी से निपटने के लिए इज़राइल द्वारा भारत को प्रदान की गई सहायता के लिए भी लेफ्टिनेंट जनरल (रेस) बेंजामिन गैंटज़ को धन्यवाद दिया।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1734160>

Sat, 10 July 2021

Indigenisation – In Need of Policy Framework

By Amit Cowshish

India has been striving for indigenisation of defence production for close to three decades. To give impetus to the efforts, the Ministry of Defence (MoD) had constituted a committee in the early 1990s under Prof APJ Abdul Kalam. The committee suggested a 10-year roadmap to increase the indigenous component in the total expenditure on capital procurement from 30 per cent in 1992-93 to 70 per cent by 2005. This goal could not be achieved and there continues to be some confusion about the present state of indigenisation.



Present State of Indigenisation

Several steps have been taken in the last 20 years, but the outcome of these efforts remains a matter of debate as the available data on indigenisation is confusing. According to a recent report of the Standing Committee on Defence (SCoD), only 93 of the 213 contracts worth about Rs 1,76,569 crore were awarded to foreign vendors of the USA, Russia, Israel, France, and some other countries between the financial years (FYs) 2016-17 and 2019-20.¹

The same report shows that the proportion of expenditure on imported defence equipment in the total expenditure went up from 30.41 per cent in the FY 2010-11 to 43.22 in the FY 2019-20, and though in the first three quarters of the following year (FY 2020-21), it plummeted to 32.39 per cent,² it is possible that the percentage jumped up again by the end of the year. These figures give the impression that the goal set by the APJ Abdul Kalam Committee has largely been met. However, this is not borne out by other empirical evidence.

In the last five years alone, several contracts have been awarded to the foreign vendors for an assortment of platforms like Dassault's twin-engine Medium Multi-Role Combat Aircraft (MMRCA), Boeing's multi-role combat AH-64E Apache and vertical-lift Chinook helicopters, Lockheed Martin's C-130J Super Hercules four-engine turboprop military transport aircraft, and Russian Almaz-Antey's S-400 Triumf Air Defence System.

The Strategic Partnership Model adopted in 2016, which envisages manufacturing of foreign-origin platforms by the Indian companies with the transfer of technology from the former, is another indication that presently India does not have the capability to design and develop state-of-the-art fighter aircraft, helicopters, submarines, and armoured fighting vehicles/main battle tanks. But, above all, according to Stockholm International Peace Research Institute (SIPRI), India was the second-largest importer of arms in 2016-20 after Saudi Arabia.³

Indigenisation in High-Technology Areas Lagging Behind

The best explanation for these contradictory sets of facts is that while the Indian industry has done reasonably well in manufacturing foreign-origin equipment with the help of technology transfer from the foreign Original Equipment Manufacturers and in indigenising components, it still lacks the capability to indigenously design and develop major platforms, with a few exceptions like the Light Combat Aircraft Tejas, which is what indigenisation should be all about.

Even in respect of components and assemblies, no data/information is available to show whether these are critical parts of the equipment/platforms in which these are used. This is important because the extent of indigenisation of a product matters little if a critical part, even if it constitutes a miniscule percentage of the overall product, is not indigenised. In hostile circumstances, the

OEM or the country of its origin could deny the export of such items and paralyse production in India.

Seen in this perspective, the level of indigenisation of defence production in India is quite low. Broadly, there are four reasons for this.

Absence of an Overarching Policy Framework

The primary reason is the absence of a pragmatic overarching indigenisation policy. What comes closest to it is a notification issued by the Department of Defence Production (DDP) in 2019.⁴ It cannot be the guiding document for a concerted effort as it only contains the policy for indigenisation of components and spare parts used by the Defence Public Sector Undertakings (DPSUs) and the Ordnance Factory Board (OFB) in the manufacturing process.

Be that as it may, this document too suffers from many conceptual and procedural inadequacies. For example, the stipulation that the 'indigenised product should invariably be cheaper and meet all technical and functional specifications of the imported component which it seeks to replace'⁵, makes it unrealistic and unworkable as the indigenised products are not always cheaper.

No wonder then that the focus of the DPSUs/OFB has been mainly on the indigenisation of items that can be manufactured in India at a cheaper cost vis-à-vis the cost of importing them. Such items do not generally account for a substantial proportion of the technologies that go into the making of a high-technology product and, therefore, the extent of indigenisation of critical components in various defence products continues to be low.

Absence of an Overarching Organisation

The second reason is the absence of an overarching organisation to channelise the efforts being made by several agencies towards a pre-defined goal. Besides DPSUs and the OFB, other agencies presently involved in indigenisation efforts include the Indigenisation Directorates of the Services, Defence Research and Development Organisation (DRDO), and the Defence Innovation Organisation (DIO).⁶ The efforts being made by these agencies are largely disjointed and lack synergy, and no mechanism is in place to facilitate their interaction with the armed forces which are the primary stakeholders in the indigenisation efforts.

Procedural Complexities and Financial Viability

Procedural complexities are the third reason for the slow pace of indigenisation. Though some efforts have been made in recent years to smoothen the process, agencies involved in indigenisation continue to follow their own procedures and norms.

A typical example is the process of selection of partners from, and giving assurance of orders to, the private sector industry, especially the Micro, Small and Medium Enterprises (MSMEs), who play a critical role in developing niche technologies and providing solutions that are critical for indigenisation. Besides, no satisfactory system is in place to address the issue of Intellectual Property Rights violations that are bound to arise if import substitutes are to be designed and developed in India.

Budgetary Constraints

Lastly, there is a severe budgetary constraint, making it difficult to earmark substantial sums of money to undertake large-scale efforts, especially for indigenous design, development and production of futuristic equipment, platforms, and weapon systems, which is essential for achieving self-reliance.

Indigenisation depends heavily on research and development (R&D), on which the public spending in India has consistently been quite low. Barring a few notable exceptions, even the private sector has been reluctant to make heavy investments in R&D because of the uncertainty that the MoD will procure the indigenously developed product.

What can be done

As the first step, the MoD needs to formulate a composite policy that focuses on indigenisation in high priority technology areas, shedding the notion that it must necessarily result in savings. The commercial viability of the identified projects and institutional arrangement for financing them,

apart from a mechanism to accommodate the cost of failed efforts, must form the bedrock of the policy.

As a matter of policy, a distinction needs to be made between indigenisation of major systems-equipment, weapons, and assorted platforms – that of components, assemblies, and sub-assemblies. This is important because the challenges faced in the indigenisation of these two categories of defence materiel are different. The approach to indigenisation in these two distinct areas will have to be different.

Secondly, there must be an overarching organisation to coordinate indigenisation efforts currently being made almost independently by several institutions mentioned above. This organisation will have to work out a system for ensuring deeper involvement of the private sector in the indigenisation effort, apart from engagement with other scientific institutions, innovators, foreign entities, and academia.

The private sector, especially the MSMEs, and Start-ups, can play a major role in achieving the intended results. However, funding is a major issue for them, as also the assurance of the follow-on orders being placed on them. These issues will require to be addressed.

Thirdly, procedural issues need to be resolved to ensure that the testing, quality assurance and certification agencies work more as a part of the team engaged in indigenisation rather than as external technology audit entities. This may also require the quality assurance personnel to acquire and upgrade their domain expertise, as well as test procedures, equipment and methodologies.

This is just an example of the procedural tangles besetting indigenisation. Many other issues, such as the setting of extremely stringent specifications by the services and lack of clarity about the aggregated long-term demand for the indigenised product – for special alloys, for example – also slow down indigenisation as action cannot be taken in such cases in the absence of economy of scales.

Fourth, legal issues that often come in the way of indigenisation of products need to be tackled. This is more relevant in the case of substitution of parts and assemblies fitted in the imported equipment through indigenisation efforts which pose a problem because of the legal constraints imposed by the warranty/guarantee clauses in the contracts awarded by the MoD/Services to the technology provider concerned.

Lastly, indigenisation is driven by commercial considerations. No seller will opt for indigenisation if it involves the risk of conceding a competitive edge to another seller because of the additional cost of indigenisation, or if the delivery schedule is inflexible allowing no room for indulging in time-taking indigenisation efforts, or there is uncertainty about the MoD's ability to place follow-on orders for indigenised products because of the enduring financial constraints it has been facing for long.

A more modest and focussed mission-mode approach to indigenisation can produce better results.

(Views expressed are of the author and do not necessarily reflect the views of the Manohar Parrikar IDSA or of the Government of India.)

- [1](#). “Capital Outlay on Defence Services, Procurement Policy, Defence Planning And Married Accommodation Project”, *Standing Committee on Defence (2020-21)*, 17th Lok Sabha, Report No. 21, Lok Sabha Secretariat, New Delhi, March 2021, p. 50. The value of the remaining 123 contracts awarded to the Indian vendors is not known.
- [2](#). Ibid. The percentages worked out from the data given on p. 18.
- [3](#). Alexandra Kuimova, Siemon T. Wezeman and Pieter D. Wezeman, “Trends in International Arms Transfers, 2020”, *Stockholm International Peace Research Institute (SIPRI)*, March 2021.
- [4](#). “Policy for Indigenization of Components and Spares Used in Defence Platforms for DPSUs/OFB”, Notification No. 1(18/02/Indigenization/DP (Plg-E5)/818, *Department of Defence Production*, Ministry of Defence, Government of India, 8 March 2019.

- [5.](#) Ibid., Para 3.2.
- [6.](#) About DIO, Innovations for Defence Excellence (iDEX), *Department of Defence Production*, Ministry of Defence, Government of India.
<https://idsa.in/idsacomments/indigenisation-policy-framework-acowshish-090721>

TIMESNOWNEWS.COM

Mon, 12 July 2021

Ahead of 2+2 strategic dialogue, Navy Chief Admiral Karambir Singh to visit Russia later this month

A meeting with Admiral Nikolai Yemenov, the Soviet Navy chief, is likely during the visit as well
By Srinjoy Chowdhury

New Delhi: As part of the continuing high-profile defence relationship between India and Russia, the Navy chief, Admiral Karambir Singh, will be visiting Russia later this month.

The Russian Navy will celebrate its 325th anniversary with parades in St. Petersburg and Kronstadt, and of course, India has been invited. What would interest Admiral Singh, an aviator, would be the presence of the MiG-29K (already with the Indian Navy) and the Sukhoi-33 as part of the function as also, other planes and helicopters. There will be parades in other places on July 25, Russian Navy Day, notably in Vladivostok, in the Far East and Sebastopol, in the Crimea.



A meeting with Admiral Nikolai Yemenov, the Soviet Navy chief, is likely during the visit as well. Both countries have worked closely for years and currently, Russia is building two Admiral Grigorovich class frigates for the Navy in a Kaliningrad shipyard, to be delivered in three years. Two more will be built in Goa.

Russia has supplied India with nuclear-powered submarines and apart from one currently with India, negotiations for another is continuing. Russia has offered a third, as well. Spares has been a problem in the past and the could come up during the discussions.

The visit also comes in the wake of an agreement by India and Russia to have annual 2 plus 2 discussions-- meetings between the external affairs minister S.Jaishankar and defence minister Rajnath Singh and their Russian counterparts. The first meeting is likely later this year. India has this arrangement with only the USA and Japan, and with Australia at a lower level. Defence secretary Ajay Kumar was also in Moscow for discussions several weeks ago.

<https://www.timesnownews.com/india/article/ahead-of-22-strategic-dialogue-navy-chief-admiral-karambir-singh-to-visit-russia-later-this-month/783495>

HAL set to deliver first batch of 3 Light Combat Helicopters to IAF

These are part of 15 Limited Series Production helicopters approved for Army and IAF

By Dinakar Peri

New Delhi: Hindustan Aeronautics Limited (HAL) is gearing up to deliver the first batch of three Light Combat Helicopters (LCH) to the Indian Air Force (IAF) once acceptance tests are completed. These are part of the 15 Limited Series Production (LSP) helicopters approved for the Army and the IAF.

“HAL has received Letter of Intent for five Air force and five Army LCH for delivery pending contract finalisation of 15 Limited Series Production (LSP) LCH. HAL has produced and signalled out three LSP LCH for the IAF. Same will be subjected to customer acceptance and training shortly,” a HAL source said.



Hindustan Aeronautics Limited's indigenously developed Light Combat Helicopter deployed for operations in Leh. File | Photo Credit: ANI

On the remaining helicopters of the LSP series, the source added, “In the current year we are producing four LCH for Army and two for the Air Force. Remaining six LCH will be produced next year.”

Delayed deal

The deal for the 15 LCH was expected to have been signed in the first quarter of 2021 but has been delayed due to the second wave of the pandemic.

The IAF has put forward a requirement for 65 LCH and the Army for 114 helicopters. Of the 15 LSP helicopters, 10 are for the IAF and five for the Army. The LCH, the lightest attack helicopter in the world weighing 5.5 tonnes, has been designed and developed by the HAL to meet the specific and unique requirements of the Indian armed forces and can operate at heights of 12,000 feet.

The Army Aviation operates smaller utility helicopters but does not have attack helicopters in its fleet and has for sometime pitched for attack helicopters of its own to operate with its strike Corps. The attack helicopter fleet is operated by the Air Force which provides close air support to the Army.

The IAF operates the older Mi-25 and Mi-35 Russian attack helicopters which are in the process of being phased out and has inducted 22 AH-64E Apache attack helicopters from the U.S. The Army will also start receiving the Apache attack helicopters from early 2023 onwards, six of which have been contracted under an estimated \$800 mn deal from the U.S. in February 2020.

Presently, the Army has 90 Advanced Light Helicopters (ALH) and 75 Rudra, weaponised ALH, helicopters in service which are indigenously designed and developed by the HAL in addition to around 160 older Cheetah and Chetak utility helicopters which are in need of urgent replacement.

Last August, amid the ongoing standoff with China in Eastern Ladakh, two LCH were deployed for operations at high altitude in Leh at short notice to support IAF missions, validating their capability.

<https://www.thehindu.com/news/national/hal-set-to-deliver-first-batch-of-3-light-combat-helicopters-to-iaf/article35265426.ece>

Army to receive first batch of 30 indigenous SWITCH tactical drones at LAC

The First of its kind SWITCH UAVs developed indigenously are all set to be inducted into the Indian Army for deployment along the LAC

By Shivani Sharma

In January, the Indian Army had struck a deal of 140 crores with Ideaforge Technology for procurement of Switch tactical drones especially for surveillance along LAC in Eastern Ladakh.

The first batch of these drones have successfully completed trials in harsh weather conditions and high altitudes and will be delivered by end of August for deployment. The trials were done in Eastern Ladakh including many other locations along the Northern and western borders.

Indian Army heading swiftly in its pursuit to get self-reliant & technologically sound

The SWITCH is a Fixed Wing VTOL (Vertical Take-off and Landing) UAV that can be deployed at high altitudes and harsh environments for day and night surveillance in ISR missions. It has a daylight payload of 1280×720 pixels, 25x Optical Zoom and has a thermal payload of 640×480 pixels. The drone can be operated with support from the Ground Control Station consisting of a high-range communication box, a hand-held controller for full camera control, and a laptop/tablet for live video streaming and pre-flight checks.



Image: PTI/Army-Technology.com

The Indian Army will make these procurements from the Indian company Ideaforge Technology. The number of drones to be supplied as part of this deal is 120 and all these will be inducted by the end of this year.

Before being selected, IdeaForge's SWITCH UAV competed in Indian Army trials in Ladakh against offerings from Tata Group, Dynamatic Technologies Ltd, VTOL Aviation and Israel's Elbit Systems. The Indian armed forces have inducted drones manufactured by IdeaForge in the past. However, this is the biggest single order the company has received from the Indian Armed Forces.

The 6.5-kilogram SWITCH drone is capable of vertical take-off, has an endurance of around 2 hours and an operational range of 15 kilometres. The UAV can be launched from an altitude of up to 4,000 meters above mean sea level and has a maximum operating altitude of around 1,000 meters above ground level.

Indian Army is enhancing its vigilance and communication with a strong drone force. Many of these drones were demonstrated at the annual Army Day parade in the Capital. They are capable of taking down a range of targets, ranging from tanks, terror camps, helipads and fuel dumps.

The demonstration, which consisted of 75 drones working autonomously to identify and take down targets with Kamikaze missions, is an early peek into future technology being developed by the Army in partnership with the private industry.

<https://www.republicworld.com/india-news/general-news/army-to-receive-first-batch-of-30-indigenous-switch-tactical-drones-at-lac.html>

Army to procure anti-drone systems as India scales up defences against new threats

Army wants anti-drone systems with 'soft kill' capabilities, which will enable detection and jamming of communication signals of hostile UAVs, as well as spoofing it

By Amrita Nayak Dutta, Edited by Manasa Mohan

New Delhi: The Army is in the process of procuring an unspecified number of anti-drone systems that will detect and jam the communication and navigation signals of a hostile unmanned aerial vehicle (UAV) or spoof it.

Top defence sources told ThePrint that a majority of these systems will only have the jamming feature option, which can disrupt the communication or navigation signals of a rogue drone. The others will be of a more advanced configuration, which will also be able to spoof a UAV.

Jamming by an anti-drone system refers to the disruption of the communication signals of a rogue drone and its control station. Spoofing means engaging with all classes of drones and taking active control of them to either make them forcibly crash land or to abandon their mission.

According to the sources, the procurement process for the first set of anti-drone systems is at an advanced stage and an order is expected to be placed shortly. About four to five companies had sent in their bids. They added that this fast track process was likely carried out under the provisions of the emergency procurement powers that were granted to the services last year by defence ministry.

The purchase process for the second set of anti-drone systems has just begun with the floating of a restricted RFI (request for information).

The anti-drone systems set to be procured by the Army will be different from the ones the Indian Air Force sought to buy recently.

While the ones that the Army is seeking to buy will have this “soft-kill” option, which means they will be able to jam the communication and navigation signals of a hostile drone, the ones sought by the IAF might have both the soft kill and the “hard kill” option, the latter meaning the physical destruction of the drone.

The services’ procurement of the anti-drone systems is significant in the backdrop of a first-of-its-kind attack at the Jammu air base, where two low-intensity improvised explosive devices were dropped from a drone, exposing chinks in the country’s security apparatus with regards to such new threats.

It exploded close to the station’s helicopter hangar and left two IAF personnel injured.

ThePrint reached the Army for a comment on the matter, but did not receive a response till the time of publishing this report.

What the anti-drone systems will be capable of

The first set of anti-drone systems will have features to detect and jam the communication and navigation signals of hostile drones — also those dependent on Global Navigation Satellite System such as GPS, GLONASS, BEIDOU, IRNSS — in ranges of up to 10 kilometres.

They should be GIS (geographic information system)-enabled and have an inbuilt navigation system. They will carry out reconnaissance to detect, identify and track hostile drones before



Police conduct a drone awareness campaign near the International Border in Samba district in Jammu on 5 July 2021 | PTI

jamming them. They should also be able to engage multiple drones within a certain frequency band.

The second set of anti-drone systems with additional spoofing capabilities will be able to perform a variety of functions against rogue drones — search, detect, jam and spoof them, over a range of 20 km.

Defence sources said that these drones should be suitable for deployment anywhere, particularly in high altitude areas and mountains.

Anti-drone systems detect and intercept hostile drones and unmanned aerial systems, which can be used for intelligence gathering or smuggling contraband, or to deploy explosives.

They are deployed to protect military bases, airports, critical infrastructure and other important sites.

<https://theprint.in/defence/army-to-procure-anti-drone-systems-as-india-scales-up-defences-against-new-threats/692214/>



Sun, 11 July 2021

Indian Army pushes govt on ‘Urgent’ acquisition of Russian Ka-226 Helicopters

By Anupama Ghosh

Indian Army is looking to fast-track the acquisition of the Russian Ka-226-T helicopters amid border tensions with China in Ladakh.

With the older Chetak and Cheetah helicopters at the fag-end of their technical life, India’s chopper arsenal needs urgent upgradation.

The Indian armed forces are set to request the government to acquire “a minimum inescapable quantity” of the Russian Kamov-226-T helicopters in a fly-away condition, reported The Times of India.

The single-engine Cheetah and Chetak helicopters are in a dire need of replacement. Officials told the Indian daily that operational availability of Cheetahs/Chetaks along the northern borders with China and the Siachen glacier-Saltoro Ridge region with Pakistan is down to just 50%.

India’s Ka-226-T Deal

The Indian armed forces have been pushing for the acquisition of new light utility helicopters (LUHs) for the past two decades. In 2015, India signed an inter-governmental agreement with Russia for the acquisition of 200 Kamov Ka-226-T helicopters worth \$1billion.

Out of the total 200 helicopters, 60 were to be imported directly while the remaining were to be manufactured indigenously at a joint facility at Tumakuru in Karnataka.

However, the acquisition is still stuck due to disagreements on the indigenous content, as The EurAsian Times had earlier reported. The homegrown equipment to be manufactured is between 27 to 33 percent, under the full Transfer of Technology (ToT).

R Madhavan, chairman of the state-owned Hindustan Aeronautics Limited (HAL), had said, “In Ka-226T when we talk of 70% indigenous content, it is not the same as the Light Combat Aircraft (LCA) 52%. The 70% is of the Russian content. Engine from Safran and avionics from other countries are not accounted for in this. Balance is what we are looking and from there 70% is taken. Taking the whole helicopter, the indigenous content is about 27-33 %.”



A Russian Ka-226-T in Syria. (via Twitter)

The Russian proposal had reportedly mentioned that the localization plan was to be managed in four phases. First 3.3% indigenization for 35 helicopters, second around 15% for the next 25 helicopters, 35% for the third phase of the next 30 helicopters, and accounting 62.4% indigenization in the last phase for the 50 helicopters.

The Kamov-226-T is a light, twin-engine multi-role helicopter, manufactured by the Kumertau Aviation Enterprise, Russia. It can perform surveillance, reconnaissance, search, and rescue (SAR) missions, as well as transporting cargo and troops. The military version has been specifically designed to operate in high-altitude terrains.

The Kamov-226-T is equipped with a high-visibility nose, cabin design, and a new rotor system. It has been fitted with a new transmission system and Kamov coaxial rotor system, comprising three upper rotor blades and a set of three lower rotor blades.

The new rotor system diminishes the need for a tail rotor, enabling landings and take-offs from smaller sites. The helicopter can carry a cargo weighing 1,200 kg and another 1,500 kg on an external sling. It can fly at a maximum speed of 250kmph with a cruise speed of 220 kmph.

Cheetahs & Chetaks

The Cheetah is a five-seater multi-role, highly maneuverable helicopter, which holds the world record in high-altitude flying among all categories of helicopters. Identical to the Aerospatiale SA 315 B Lama helicopter of France, HAL first signed an agreement for the helicopter in 1970.

It is equipped with the Artouste-III B turbo-shaft engine and is capable of conducting observation, surveillance, and rescue operations in high-altitude areas. The helicopter is 12.91 m long, 2.38 m wide, and 3.09 m high. It has a cruise speed of 192 kmph.

In the past decades, HAL has manufactured and sold more than 275 Cheetah helicopters for service in India and abroad.

The Chetak is a two-ton class, seven-seater, multi-role, multi-purpose helicopter. The Helicopter Division of HAL, first manufactured the Chetak in 1962, after an agreement with former Eurocopter, France, (presently Airbus). The first Chetak was acquired in a 'Fly Away' condition in 1965.

It is equipped with an Artouste -III B turbo-shaft engine, and the helicopter can conduct search and rescue (SAR) operations, aerial survey and patrolling, emergency medical services as well as cargo and material transport.

The Chetak is 12.84 m long, 2.59 m wide and 2.97 m high. It can carry two crew members and five troops and can fly at a speed of 185 kmph.

For decades, the Cheetah and Chetak helicopters have been used by the Indian armed forces for various purposes. However, after decades of service the choppers are facing problems with regards to serviceability and serious questions have been raised on their flight-worthiness.

The helicopters have been involved in a string of accidents and fatal crashes.

HAL's Light Helicopter

The Indian Army desperately needs new light utility helicopters (LUHs) for reconnaissance as well as sustenance of troops in forward areas.

With the Cheetah and Chetak helicopters nearing the end of their technical life, the armed forces had urged the government to fast-track 'Make-in-India' projects to meet the requirements of the armed forces.

Accordingly, the HAL developed its own LUH, which cleared extensive tests last year, reported The EurAsian Times. It is expected that the LUH will complement the work of the Russian Kamov-226-T choppers.

The HAL helicopter underwent rigorous trials including envelope expansion, performance and flying technicalities at the high altitudes of Leh.

It was reported that the LUH took off from Leh and further demonstrated its hot and high hover performance at Daulat Beg Oldie (DBO) and Advanced Landing Ground (ALG) at 5000 MAMSL (height above mean sea level).

The LUH is equipped with a single Shakti -1U turboshaft engine.

Expected to replace the current Cheetah and Chetak helicopter fleets, the LUH was also tested on their payload capacity in the world's highest battlefield – the Siachen glaciers. At the trial, the helicopters were landed at the highest helipads of Amar and Sonam.

Given the urgent need in view of threats from both China and Pakistan, the armed forces want the government to fast-track the acquisition of the Russian helicopters. Officials told The Times of India that India should import a certain number of Ka-226-Ts on a fast-track basis.

They are of the view that buying all the 200 helicopters in one go would make India dependent on the Russians for spares and maintenance. Hence, buying a limited number of choppers would address both operational and cost issues simultaneously.

<https://eurasianimes.com/indian-army-pushes-govt-on-urgent-acquisition-of-russian-ka-226-helicopters/>

Telangana Today

Sun, 11 July 2021

Do we need Theatre Commands?

By Major General SB Asthana

The long-awaited restructuring of the Indian Armed Forces has finally got off the block. The Chief of Defence Staff (CDS) has been appointed and a new Department of Military Affairs (DMA) within the Ministry of Defence stands created. While the CDS settles the need for one point military advice and prioritisation of defence procurements, taking into account competing requirements of Services so as to meet the current and future national security needs, the DMA is expected to redistribute duties to sharpen coordination and improve synergy between the Services.

A major expectation from these reforms, besides modernisation, is to bring down the defence expenditure. These also seem to be the justifications for creation of fewer Theatre Commands – converting the existing 17 Service-specific Commands (seven each of Army and IAF, and three of Navy) into Integrated Theatre Commands. These Theatre Commands are expected to improve synergy and cohesiveness while also bringing down costs.

Is The Timing Right?

Today, India is facing a 'Two Front Threat'. It is already in a standoff with the largest military in the world and the other adversary is also devising new ways to disturb peace through drones/terror attacks. Irrespective of merits and demerits of Theaterisation, strategically, it is not the right time to go through such a major apex level restructuring, when the largest military force is knocking at Line of Actual Control (LAC).

Such major restructuring takes at least a few years and will bring in teething problems, leading to turbulence in the time-tested command structure during the intervening period, a risk which the country must avoid. In an overdrive to minimise defence costs or meet certain personality-oriented deadlines, the restructuring should not compromise the operational effectiveness of the Indian Military.

What Needs to be Restructured

Regarding the implementation of the Indian model of Theatre Commands, while Air Defence Command, Defence Space Agency, Armed Forces Special Operations Division and integration in logistics is good, upgradation of Defence Cyber Agency to 'Information Warfare Command' is recommended. The critical shortage of air and other assets is a concern too serious to be overlooked.

With tri-service structure, reporting to a single Service Chief has its own problems. Reporting to CDS may make it difficult to manage operations. Instead, the first priority should be to do capability development over the restructuring of apex level restructuring.

While the current proposals follow an Indianised pattern, as the restructuring progresses, some teething problems will appear which will have to be ironed out. With unsettled borders with China and Pakistan and the need to physically hold the Line of Control (LoC), Actual Ground Position Line (AGPL) as well as the Line of Actual Control (LAC), a manpower-intensive deployment is necessary. This will necessarily require an adequate number of Commands along the border.

The need for the existing separate Command for Union Territories of Jammu & Kashmir and Ladakh is inescapable and should not be tampered with. Another Command to cover areas South of Jammu, both sides of Shakargarh bulge (a vulnerability of Pakistan) and plains of Punjab is also a must.

Maritime Command

The proposal of Maritime Command to cover the Indian coastline spreading from the Sir Creek near the Arabian Sea to the Sundarbans in the Bay of Bengal under one theatre, by merging the Navy's western and eastern commands has pros and cons. The proposal involves placing necessary air assets and Army's support system under a Navy commander to bring the unity of command in managing the security of the Indian Ocean Region in a reasonably independent manner.

The Maritime Command, accruing advantage of unity of command, will have to be weighed against manageability of the increased span of control, in light of the fact that Indian definition of Indo-Pacific and area of maritime interest has grown much more to include eastern coasts of Africa to northern Pacific, at least up to Japan.

In the case of littorals, a major responsibility of Andaman and Nicobar and islands in the Bay of Bengal has been taken away by correctly raising the Integrated Andaman and Nicobar Command (ANC), which is essential in view of the recent development of the China-Myanmar Economic Corridor. It needs to be noted that amongst Army Commands, except for Southern Command, not many operations with Navy are visualised, unless some formation is picked up for Out of Area Contingency Tasks, amphibious operations and MOOTW (military operations other than war), including disaster relief.

Air Power Debate

The Indian Air Force is an offensive component of Indian Military. For a comprehensive air battle, with inadequate air resources, switching assets between operational commands of same service is much more effective than trying to do so between Integrated Theatre Commands with dedicated resources, through CDS/ CoSC Committee System.

It also needs to be noted that with the current speed of fighter aircraft and high intensity of lethal air defence systems, globally, the close air support role is being performed better by Attack Helicopters and a variety of artillery assets due to safety concerns. New generation aircraft are mostly multi-role, increasingly deployed for long and short range interdiction, counter surface force operations, creating favourable air situation, degradation, offensive air missions and strategic national missions.

Indianised Model

The US and China have laid down expeditionary roles for their military away from the mainland; hence their Theatre Commands like Indo-Pacific Command can't be supported from air assets from mainland, which justifies separate allocation of air assets. Both these countries have done so after reaching self-reliance in defence production.

The US has global strategic interests and needs an expeditionary military force capable of global deployment. It has no direct military threat to its mainland. Its five regional Unified Commands are expected to operate independently, away from the mainland and other Commands, on expeditionary role in designated areas of the globe, requiring integrated combat power of the three services, which justifies the need of unified commands.

China's People's Liberation Army (PLA)'s intention of becoming a superpower with world-class military by 2049, expeditionary design to increase its global footprints, and protect its sea lines of communication (SLOC) and trade interests globally can easily be inferred from National Military Strategy documents released in 2015. It is because of these expeditionary roles and the

distances involved that the PLA has adopted the model of Integrated Theatre Commands, because switching of combat resources from one theatre to another may be difficult in their case. China has been able to generate adequate military hardware required for Theatre Commands.

In the case of India, the expeditionary role doesn't hold good for a considerable period. India must first bring up its asset availability up to a point to be distributed as first priority, with indigenous technology and hardware by self-reliance, which is a work in progress. It needs to be noted that China, the US, Russia restructured Theatre Commands after achieving self-reliance through well-structured National Security Strategy.

Chinks in Armour

Analysing two of the laid down functions of the CDS, namely 'to bring about jointness in operation, logistics, transport, training, support services, communications, repairs and maintenance, etc of the three Services' and 'to ensure optimal utilisation of infrastructure and rationalise it through jointness among the Services', the idea of separate "Training and Doctrinal Command" is welcome to foster jointness in planning, training and doctrinal issues. The level, scale and magnitude of joint training in the Indian Military needs to be enhanced.

Except for Defence Services Staff College and a small capsule at Army War College, there is very little joint training being conducted in Services. We need to expand and utilise tri-Service organisations like the Centre for Joint Warfare Studies (CENJOWS), United Service Institution of India (USI) and the proposed Indian Defence University to organise more joint training courses for all Services to promote integration and jointness.

A case for 'Joint Logistics Command', proposed a few decades ago and the need for a joint logistics system, to avoid duplicity and economise resources, merit serious consideration. Major military powers have steadily integrated their military logistics and infrastructure development for enhancing efficiency and rationalising defence spending. China has adopted it successfully, where almost 80% of PLA logistics is joint and only 20% is Service-specific, which has proved to be quite cost-effective.

The Indian Military has majority of logistics as Service-specific component, and a very limited component on joint logistics model like medical services, Military Engineer Services (MES), Directorate General of Quality Assurance, Defence Research and Development Organisation (DRDO) and other organisations, being controlled directly by the MoD. This is not a cost-effective model. The joint logistics model can be implemented at the theatre level as well, as in the case of China, to avoid duplicity of supply chains.

Post Operation Parakram, it was realised that the span of control of erstwhile Northern Command had become unmanageable; hence India had to raise a new corps and create South Western Command to right-size the span of control.

Reading the context of restructuring, the idea of Integrated Theatre Commands seems to be driven more by economic considerations and less by operational inadequacies. India should adopt only those changes which do not bring down the operational effectiveness of the existing system, in light of our peculiar geography/terrain, threat perception, peculiar challenges, resources and technological threshold. With no major change in geography, border commitments, counterinsurgency/terrorism involvements, threat and military resources, we should incorporate only essential changes in the existing structures to improve jointness and integration.

The expectation of Theatre Commands to be ready by 2022 is ambitious. We should be careful in executing these changes because the current system has not failed so far, and India does not have the economic luxury of trying out a new system for the sake of cost-cutting and reverting, if it is found operationally inadequate.

(The author is a strategic and security analyst and a veteran Infantry General. He is the Chief Instructor, United Service Institution of India. Views are personal based on open source information. <https://asthanawrites.org/>)

<https://telanganatoday.com/do-we-need-theatre-commands>

Indian warship carries out drills with Spanish Navy in Cape Trafalgar

New Delhi: An Indian warship was part of a range of naval drills with the Spanish Navy near strategically important Cape Trafalgar, officials said on Friday.

The assets deployed by the Spanish Navy for the maritime partnership exercise included a Cessna maritime patrol aircraft and a Sea King (SH-3D) helicopter, they said.

"INS Tabar undertook a maritime partnership exercise at sea with the aircraft of Spanish Navy on July 8 near Cape Trafalgar soon after crossing the Straits of Gibraltar," Indian Navy spokesperson Commander Vivek Madhwal said.

He said several drills such as air defence, vertical replenishment and cross deck operations were carried out as part of the exercise.

"The exercise was mutually beneficial in enhancing interoperability and towards consolidating combined operations against maritime threats," he said.

Earlier, INS Tabar and Italian frigate ITS Antonio Marceglia carried out a two-day maritime partnership exercise in the Tyrrhenian Sea.

The exercise on July 4 and 5 covered a wide range of naval operations, including air defence procedures, replenishment at sea, communication drills and cross deck helo operations by day and night.

<https://timesofindia.indiatimes.com/india/indian-warship-carries-out-drills-with-spanish-navy-in-cape-traffic/articleshow/84273007.cms>



Image credit: Twitter@DefencePRO_Guj

Worrying: China is creating permanent structures in Ladakh

Sources in the security establishment said that “the Chinese have been creating permanent structures, including those required for defences and habitation of the troops”

By Mayank Singh

New Delhi: The apprehensions of a long haul along the Line of Actual Control (LAC) in eastern Ladakh have started manifesting on the ground as the Chinese forces have been creating permanent structures in areas wherever the Peoples’ Liberation Army troops are deployed. This comes after the Indian Air Force Chief confirmed that the Chinese are improving their air infrastructure.



Image of China's People's Liberation Army (PLA) used for representational purpose. (File Photo | AP)

Sources in the security establishment said that “the Chinese have been creating permanent structures, including those required for defences and habitation of the troops”. In view of the Chinese move, India has also been building permanent defences and structures for habitation but these will take some time, added the source.

Air Chief Marshal RKS Bhadauria had said in the first week of July that China had strengthened its infrastructure and improved the efficiency of its air operations. Since May 2020, the PLA has moved its soldiers along the LAC at several points, forcing the Indian army to counter the Chinese move with its own deployments. Although there has been disengagement of troops and equipment from the north and south banks of Pangong Tso since then, the standoff continuing in areas like Hot Spring, Gogra Post and Depsang.

Defence Analyst Maj-Gen (retd) S B Asthana calls it a furtherance of the Chinese ‘incremental encroachment strategy’. “China, in the overall design under incremental encroachment strategy, is trying to enforce the infra development and its claim along its perception of LAC and in that context, is trying to settle down villages and make permanent structures so that over a period, its claim gets strengthened.”

“We should also improve our infrastructure along our perception of LAC and also make permanent structures and settle down villages so that the Chinese don’t succeed in their game plan,” he suggested as a counter move. India has ramped up road-building along the LAC and has also mobilised the troops with more than 50,000 personnel stationed in eastern Ladakh to thwart any move by the PLA men.

<https://www.newindianexpress.com/nation/2021/jul/12/worrying-china-is-creating-permanent-structures-in-ladakh-2328835.html>

Chinese latest type 003 aircraft carrier is a threat to Indo-Pacific

Labelled as type 003, the third aircraft carrier after Liaoning and Shandong will be followed by two more Chinese carrier battle groups (CBGs) before the end of this decade as per western intelligence reports

By Shishir Gupta

With China on the verge of the launching of what is billed as the world's largest non-American aircraft carrier in 2021 end, the Indian national security planners are worried about the security of the Indian Ocean Region (IOR) as Beijing, as in the past in the South China Sea, is a practitioner of gunboat diplomacy with scant respect of global law.

Labelled as type 003, the third aircraft carrier after Liaoning and Shandong will be followed by two more Chinese carrier battle groups (CBGs) before the end of this decade as per western intelligence reports.

While western defence experts have tried to lowball the PLA Navy carrier development program citing Chinese perfidious access to technology, the Indian Navy knows that the third aircraft carrier will create instability at least in the Indo-Pacific.

“The question is not how the Chinese acquired the technology but how it will impact India and the IOR. The US narrative that CBGs can be targeted by long-distance ballistic missiles comes from a position of strength, where the US Navy has no less than 11 super carriers at its disposal,” said a former Indian Navy admiral.

The PLA's type 003 carrier is expected to be more than 85000 tonnes with an electromagnetic aircraft launch system (EMALS), which will allow the ship to launch aircraft with more fuel and weapons as well as airborne radars, anti-submarine warfare and aerial refuellers from the floating deck. This means that the range and strike of the aircraft carrier will increase manifolds. None of the Indian carriers has catapult aircraft launch system.

“In the Indian context, the Chinese carrier is a potent weapon and has to be treated as such. The security of IOR will be affected if two Chinese carriers come into the area. We must remember that the Chinese are using the US playbook in almost all their force application paradigms ... like the US carrier in Taiwan straits... what prevents that Chinese carrier in future from carrying out a freedom of navigation operations in Andaman Seas!, ” said a naval operations expert.

While India has developed a new intermediate-range ballistic missile Agni-Prime with the wartime objective of targeting CBGs, the PLA with four aircraft carriers by 2025 will more than a match for INS Vikramaditya (presently under maintenance) and INS Vikrant, which will be commissioned by August 2022. Under the circumstances, India has no options but to build its nuclear-powered attack submarines to deter the Chinese flotilla and have one aircraft carrier operational at all times as air power at sea is an operational necessity and cannot be provided by the land-based air force. Without a protective aerial bubble, the CNG is not only exposed to incoming missiles but also to enemy aircraft.

“Carriers are being looked at purely from a force on force perspective. Questions are being asked why should we not build submarines to counter the Chinese carrier groups. That is true, but



Chinese aircraft carrier Type 003 under construction at Jiangnan shipyard on the mouth of Yangzi river. (Photo: Planet Labs)

then our own carrier can threaten something else and balance the operational equation. Why do we assume that one carrier needs to go into battle with only another carrier? CBGs are flexible and have a range of operations - other than addressing the enemy carrier. That must settle the Carrier or Submarine debate as both are required for protecting the IOR,” an admiral said.

While many within the Indian national security set-up believe that an aircraft carrier is a World War II weapon and the era of stand-off weapon systems has dawned, the Chinese investment in building more such platforms clearly shows that the Indian Navy has a legitimate case for a third aircraft carrier.

<https://www.hindustantimes.com/india-news/chinese-latest-type-003-aircraft-carrier-is-a-threat-to-indopacific-101625826966663.html>



Sun, 11 July 2021

The Chinese Navy is building a Robo-Shark

The fish-like undersea drone able to operate with a low acoustic signature at high speeds for reconnaissance and anti-submarine warfare

By Kris Osborn

The U.S. Navy is by no means the only force that sees the incredible value undersea drones can provide commanders in terms of high-risk surveillance, clandestine targeting reconnaissance, countermine operations and of course unparalleled endurance. Many of them can launch from missile tubes built into host-ship manned submarines beneath the surface and operate with less risk of detection in hostile waterways less approachable by submarines.

The Chinese Navy is now talking about its new “Robo-Shark” fish-like undersea drone able to operate with a low acoustic signature at high speeds for reconnaissance and anti-submarine warfare.



“Replacing the traditional propeller, the Robo-Shark’s power source is the bionic tailfin, which can give it a top speed of six knots,” according to the Chinese Communist Party-run *Chinese Global Times*.

The report does say the Robo-Shark can conduct anti-submarine operations, however available photos do now show an armed drone able to do much more than some reconnaissance. While little information regarding the Robo-Shark’s technical attributes are cited in the *Global Times* report, it may be unknown as to whether it can parallel any of the many U.S. Navy Unmanned Underwater Vessels now in development. The U.S. Navy is currently exploding with a new fleet of undersea drones of all sizes, including small, mine-hunting drones and larger, submarine-like, torpedo-armed drones.

A key measure of comparison, it would seem apparent, likely resides in the information flow capacity of the drones and the range and resolution of its sonar and undersea detection. Even extremely long-range and precise detection, however, is of questionable value if it cannot become available until the drone returns to its host submarine.

Real-time, undersea data sharing can be essential when it comes to tracking, following and potentially attacking enemy surface ships and undersea platforms. Primarily undersea drones have remotely gathered data which is then downloaded upon return, however, there are a few cutting edge ways the U.S. Navy is enabling much greater levels of undersea networking. In a simple sense, deep underwater drones can connect with a physical cable to a surface buoy and send data

renderings of gathered imagery to the surface and air platforms instantly. They could also be engineered with an antenna and transmit data upon surfacing.

The U.S. Navy is, however, fast progressing with various kinds of real-time-undersea data sharing which would bring a paradigm-changing measure of operational flexibility and response opportunities for manned submarines. For example, should a small undersea drone discover an enemy submarine, it would of course be extremely crucial if a manned host ship could learn its location right away in order to maneuver into an attack position. Should the host submarine only learn of the enemy target after the detecting drone has returned and downloaded its data, too much time may have passed and a manned submarine may simply not be able to respond as circumstances and locations will have changed.

One interesting now-in-development Navy drone, Raytheon's Barracuda, is engineered with a wireless undersea data link and autonomous algorithms such that it can find, track and even destroy enemy targets such as mines, without needing human intervention.

Should the Chinese be operating drones with this kind of capacity, U.S. submarines and surface ships could be put at greater risk. However, the U.S. Navy has been working on undersea networking for many years and, based on available information in the newspaper, the new Robot-Shark Chinese undersea drone seems unlikely to rival the United States.

<https://nationalinterest.org/blog/buzz/chinese-navy-building-robo-shark-189473>

THEWEEK

Sat, 10 July 2021

India awaits next military talks with China on unfinished disengagement in Ladakh

Beijing has blamed India for the military standoff in eastern Ladakh

By Pradip R Sagar

Efforts are on to finalise the agenda for the next round of military commanders meeting between India and China. But, in absence of the 'common understanding' over certain issues, the two sides have not been able to fix the date for the impending 12th round of Corps Commander-level talks.

A top official in the South Block, which houses the ministry of defence, claims that China is pushing to downgrade the level of military talk to division commander level, which the Indian side is not accepting. India feels that military standoff should be negotiated at the highest level of military engagement. Division Commander-level talks involve teams headed by officers of the rank of Major General.

In the June 25 meeting of Working Mechanism for Consultation and Coordination (WMCC) on India-China border affairs, both sides had agreed to hold the senior commander's meeting as soon as possible to discuss 'complete disengagement' on Ladakh sector of the Line of Actual Control (LAC).

But China, instead of discussing all friction points, only wants disengagement of troops and weapons from the general areas of Gogra and Hot Springs. "They (China) are not willing to discuss Demchok and Depsang flashpoints. But we are insisting to restore the status quo of April 2020," said an official. While both sides of Pangong Tso was demilitarised after military talks in February,



India's Border Security Force (BSF) soldiers stand guard at a checkpoint along a highway leading to Ladakh, at Gaganger in Kashmir's Ganderbal district June 17, 2020 | Reuters

the other friction areas like Hot Springs, Gogra, the Depsang plains, CNN (Charding Ninglung Nallah) track junction at Demchok and Patrolling Point 15 are yet to be resolved.

"Out of the four principal issues, Depsang could prove to be most contentious, which China is not willing to discuss at the senior military level talk. Chinese side is pushing to discuss such issues at local commander level instead of the highest level. It shows their unwillingness to resolve the border dispute," another official said. Since 2013, China has blocked Indian patrols to Patrolling Point 10, 11, 11A, 12 and 13 Depsang plains.

Since April 2020, India and China have deployed over 50,000 troops (three division level) along with artillery, tanks and rockets, along the 1,597 kilometre-long border in eastern Ladakh.

Beijing has blamed India for the military standoff in eastern Ladakh. Its foreign ministry spokesperson made a statement that "for quite some time, the Indian side has been increasing its military along the border and encroaching upon the Chinese territory. This is the root cause of the tense situation along the borders".

In a message to China (for its provocative behaviour at Ladakh), on July 6, in a departure from the past, Prime Minister Narendra Modi called Tibetan spiritual leader Dalai Lama on his 86th birthday. Keeping the sensitivities of the Chinese government, New Delhi has been careful and calibrated in its engagement with the Dalai Lama. This is the first time since 2015, Modi has publicly acknowledged his telephonic conversation with the Tibetan spiritual leader. In September 2015, Modi had thanked the Dalai Lama for his birthday greetings.

China does not accept the Dalai Lama's government-in-exile in India and disapproves any engagement with him.

Till date, 11 rounds of military talks at the Corps Commander level to find a resolution have taken place between the two sides. Expect partial disengagement on both sides of Pangong Tso, talks have not yielded much outcome. Military negotiations have, however, managed to control the temper of both forces and have been able to prevent a repeat of Galwan-type clash.

According to Indian military planners, they have realised that Chinese PLA can only be deterred by 'offensive' posturing. It was evident from Indian Army's Operation Snow Leopard, launched in last August to capture the dominating heights of Rezang La and Rechin La (south of Pangong Tso) in the Kailash ranges. In February, Indian forces eventually vacated these heights after the 9th Corps commander level meeting. However, some military experts believe that giving away the dominant heights on Kailash range was a mistake as it was Chinese military's prime objective. Since then, Chinese military have not been keen to resolve other friction points.

Besides the Army, the Indian Air Force deployed its frontline fighters, including the newly inducted Rafale jets from France, on the Ladakh sector. Indian military believes swift deployment of air force strike assets have somehow deterred aggressive Chinese military. Newly inducted Chinook and Apache helicopters along with omni-role Rafale jets changed the dynamics on the icy heights of Himalayan frontiers, as these air assets were, for first time, deployed in extreme high-altitude areas.

<https://www.theweek.in/news/india/2021/07/09/india-awaits-next-military-talks-with-china-on-unfinished-disengagement-in-ladakh.html>



Press Information Bureau
Government of India

Ministry of Science & Technology

Sat, 10 July 2021 9:08AM

Rare superluminous supernova shining with borrowed energy source spotted

An extremely bright, hydrogen deficient, fast-evolving supernova that shines with the energy borrowed from an exotic type of neutron star with an ultra-powerful magnetic field has been spotted by Indian researchers. Deep study of such ancient spatial objects can help probe the mysteries of the early universe.

Such type of supernovae called SuperLuminous Supernova (SLSNe) is very rare. This is because they are generally originated from very massive stars (minimum mass limit is more than 25 times to that of the Sun), and the number distribution of such massive stars in our galaxy or in nearby galaxies is sparse. Among them, SLSNe-I has been counted to about 150 entities spectroscopically confirmed so far. These ancient objects are among the least understood SNe because their underlying sources are unclear, and their extremely high peak luminosity is unexplained using the conventional SN power-source model involving Ni^{56} - Co^{56} - Fe^{56} decay.

SN 2020ank, which was first discovered by the Zwicky Transient Facility on 2020 January 19, was studied by scientists from Aryabhata Research Institute of Observational Sciences (ARIES) Nainital, an autonomous research institute under the Department of Science and Technology (DST) Govt. of India from February 2020 and then through the lockdown phase of March and April. The apparent look of the

SN was very similar to other objects in the field. However, once the brightness was estimated, it turned out as a very blue object reflecting its brighter character.

The team observed it using special arrangements at India's recently commissioned Devasthal Optical Telescope (DOT-3.6m) along with two other Indian telescopes: Sampurnanand Telescope-

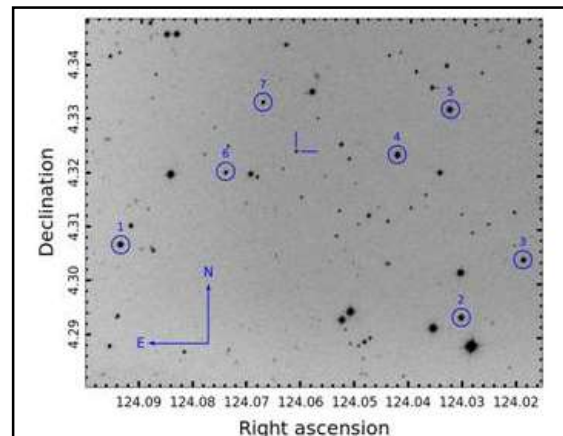


Fig.1: Finding chart of SN 2020ank ($\sim 5 \times 4$ arcmin² field) along with other local standard stars (marked in circles, IDs 1–7). The R-band image (exposure time = 5 min) observed on 2020 March 19 using the 4K \times 4K CCD Imager mounted at the axial port of the 3.6m DOT facility. The location of SN is marked with a blue crosshair. North and East directions are also indicated in the image (taken from Kumar Amit et al. (, 2021, MNRAS, 502, 1678K).

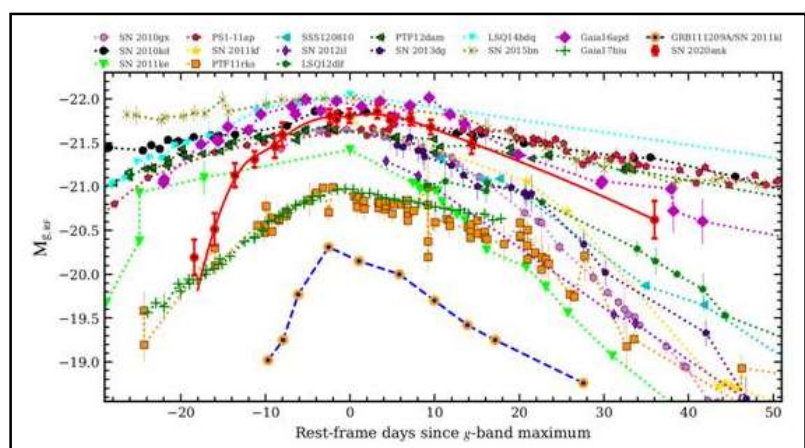


Fig.2: Comparison of the rest-frame g-band light curve of SN 2020ank (in red) with other well-studied SLSNe-I (taken from Kumar Amit et al. (2021, MNRAS, 502, 1678K).

1.04m and Himalayan Chandra Telescope-2.0m. They found that the outer layers of the onion structured Supernovae had been peeled off, and the core was shining with a borrowed energy source. The study led by Amit Kumar, a Ph.D. student working under Dr. S. B. Pandey published in the Monthly Notices of the Royal Astronomical Society, suggested a possibly powering source from an exotic type of neutron star with an ultra-powerful magnetic field (magnetar) with a total ejected mass of $\sim 3.6 - 7.2$ times the mass of the sun.

The study established the role of 3.6. DOT in exploring very rare distant SLSNe in the future. Deeper investigations could explore the underlying physical mechanisms, possible progenitors, and environments hosting such rare explosions and their possible associations with other energetic explosions like Gamma-ray bursts (GRBs) and Fast Radio Bursts (FRBs).

<https://pib.gov.in/PressReleasePage.aspx?PRID=1734358>



पत्र सूचना कार्यालय
भारत सरकार

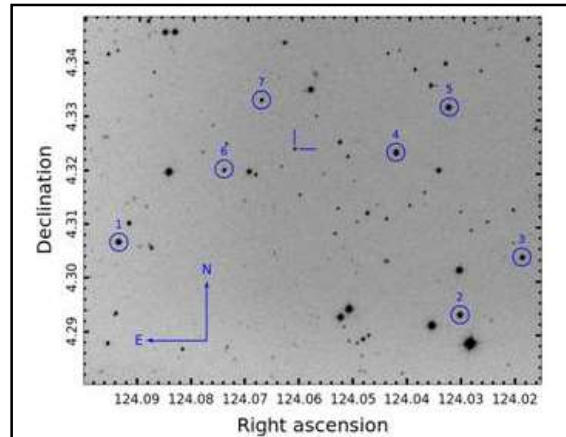
विज्ञान एवं प्रौद्योगिकी मंत्रालय

Sat, 10 July 2021 9:08AM

अन्य ऊर्जा स्रोत से चमकने वाला दुर्लभ सुपर ल्यूमिनस सुपरनोवा का पता लगाया गया

भारतीय शोधकर्ताओं ने एक अत्यंत उज्ज्वल और हाइड्रोजन कमी के साथ तेजी से उभरने वाले सुपरनोवा का पता लगाया है जो एक अति-शक्तिशाली चुंबकीय क्षेत्र के साथ एक अनोखे न्यूट्रॉन तारे से ऊर्जा लेकर चमकता है। ऐसी प्राचीन आकाशीय पिंडों के गहन अध्ययन से प्रारंभिक ब्रह्मांड के रहस्यों की जांच करने में मदद मिल सकती है।

इस प्रकार के सुपरनोवा को सुपरल्यूमिनस सुपरनोवा (एसएलएसएनई) कहा जाता है जो काफी दुर्लभ होते हैं। ऐसा इसलिए है क्योंकि वे आम तौर पर बहुत बड़े तारों (न्यूनतम द्रव्यमान की सीमा सूर्य के 25 गुना से अधिक) से उत्पन्न होते हैं और हमारी आकाशगंगा अथवा आसपास की आकाशगंगाओं में ऐसे विशाल तारों का वितरण काफी विरल है। उनमें एसएलएसएनई-1 स्पेक्ट्रोस्कोपिक तौर पर अब तक पुष्टि की गई लगभग 150 आकाशीय पिंडों में शामिल है। ये प्राचीन पिंड सबसे कम समझे जाने वाले सुपरनोवा में शामिल हैं क्योंकि उनके अंतर्निहित स्रोतों के बारे में कोई स्पष्ट जानकारी नहीं है और उनकी अत्यधिक चमक को पारंपरिक एसएन पावर सोर्स मॉडल का उपयोग करके भी स्पष्ट नहीं किया जा सका है जिसमें Ni^{56} - Co^{56} - Fe^{56} का विघटन शामिल है।



चित्र 1: अन्य स्थानीय मानक सितारों (गोले में चिह्नित, आईडी 1 से 7) के साथ एसएन 2020एएनके (5x4 आर्कमिनट वर्ग क्षेत्र) का चार्ट। 3.6एम डॉट सुविधा के अक्षीय पोर्ट पर लगे 4केx4के सीसीडी इमेजर का उपयोग करके 19 मार्च 2020 को आर-बैंड छवि (एक्सपोजर समय = 5 मिनट) का अवलोकन किया गया। एसएन का स्थान नीले क्रॉसहेयर से चिह्नित है। चित्र में उत्तर और पूर्व दिशाओं को भी दर्शाया (कुमार अमित एट अल 2021 एमएनआरएस, 502, 1678के) गया है।

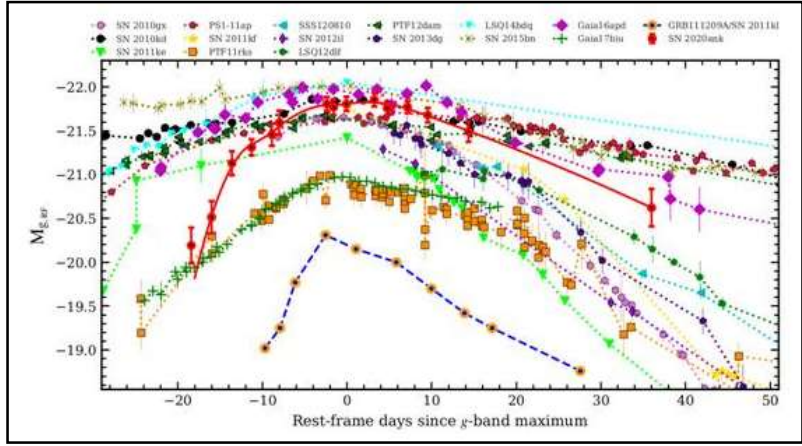
एसएन 2020एएनके की खोज सबसे पहले 19 जनवरी 2020 को ज्विकी ट्रांजिएंट फैसिलिटी द्वारा की गई थी। फरवरी 2020 से और उसके बाद मार्च एवं अप्रैल की लॉकडाउन अवधि में इसका अध्ययन भारत सरकार के विज्ञान एवं प्रौद्योगिकी विभाग (डीएसटी) के अंतर्गत स्वायत्त अनुसंधान संस्थान आर्यभट्ट रिसर्च इंस्टीट्यूट ऑफ ऑब्जर्वेशनल साइंसेज (एआरआईईएस) नैनीताल के वैज्ञानिकों द्वारा किया गया। यह सुपरनोवा उस क्षेत्र में मौजूद अन्य पिंडों के समान स्पष्ट तौर पर दिख रहा था। हालांकि उसकी चमक का अनुमान लगाया गया और वह काफी नीली वस्तु के रूप में दिखा जो उसकी अत्यंत चमक वाली प्रकृति को दर्शाता है।

टीम ने दो अन्य भारतीय दूरबीनों: संपूर्णानंद टेलीस्कोप- 1.04एम और हिमालयन चंद्र टेलीस्कोप- 2.0एम के साथ हाल ही में चालू किए गए भारत के देवस्थल ऑप्टिकल टेलीस्कोप

(डीओटी- 3.6एम) में विशेष व्यवस्थाओं का उपयोग करते हुए इसका अवलोकन किया। उन्होंने पाया कि प्याज जैसी संरचना वाले सुपरनोवा की बाहरी परतों को छील दिया गया था और कोर किसी अन्य ऊर्जा स्रोत के साथ चमक रहा था। यह अध्ययन डॉ. एस. बी. पांडे के तहत काम करने वाले एक पीएचडी छात्र अमित कुमार के नेतृत्व में किया गया और इसे रॉयल एस्ट्रोनॉमिकल सोसाइटी की मासिक पत्रिका में प्रकाशित किया गया है। इसमें कहा गया है कि ऊर्जा का स्रोत एक अति-शक्तिशाली चुंबकीय क्षेत्र (मैग्नेटार) वाला अनोखा न्यूट्रॉन तारा हो सकता है जिसका कुल उत्सर्जित द्रव्यमान सूर्य के द्रव्यमान के मुकाबले 3.6 से 7.2 गुना अधिक है।

यह अध्ययन भविष्य में बहुत ही दुर्लभ एसएलएसएनई की खोज में 3.6. डीओटी की भूमिका को स्थापित करता है। गहन जांच से इसमें अंतर्निहित भौतिक ढांचे, संभावित पूर्वजों, ऐसे दुर्लभ विस्फोटों की मेजबानी करने वाले वातावरण और गामा-रे बर्स्ट (जीआरबी) एवं फास्ट रेडियो बर्स्ट (एफआरबी) जैसे अन्य ऊर्जावान विस्फोटों के साथ उनके संभावित जुड़ाव का पता लगाया जा सकता है।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1734400>



चित्र 2: एसएन 2020एएनके (लाल रंग में) के रेस्ट-फ्रेम जी-बैंड लाइट कर्व की तुलना अच्छी तरह से अध्ययन किए गए अन्य एसएलएसएनई-1 (कुमार अमित एट अल (2021, एमएनआरएस, 502, 1678के) से ली गई) के साथ की गई है।

ISRO plans to launch geo imaging satellite on August 12

It's going to be only the second launch of the Bengaluru-headquartered space agency in the COVID-19-hit 2021

Bengaluru: The Indian Space Research Organisation (ISRO) is getting back into launch activity fully at Sriharikota spaceport with the planned orbiting of geo imaging satellite GISAT-1 on board GSLV-F10 rocket on August 12.

It's going to be only the second launch of the Bengaluru-headquartered space agency in the COVID-19-hit 2021.

ISRO successfully launched PSLV-C51 mission on February 28 with Brazil's earth observation satellite Amazonia-1 and 18 co-passengers, including some built by students, on board.

The 2,268-kg GISAT-1 was originally slated to be launched from Sriharikota in Andhra Pradesh's Nellore district, about 100 kms north of Chennai, on March 5 last year but was postponed a day before the blast-off due to technical reasons.

Thereafter the launch was delayed due to COVID-19- induced lockdown which affected normal work.

It was scheduled for March 28 this year but a "minor issue" with the satellite forced its postponement.

The launch was later expected in April and then in May but the campaign could not be taken up due to lockdown in parts of the country triggered by the second wave of the pandemic.

"We have tentatively planned the GSLV-F10 launch on August 12, at 05.43 am, subject to weather conditions", an ISRO official told PTI on Saturday.

According to ISRO, GISAT-1 will facilitate near real- time observation of the Indian sub-continent, under cloud-free conditions, at frequent intervals.

GISAT-1 will be placed in a Geosynchronous Transfer Orbit by GSLV-F10 and, subsequently, it will be positioned in the final geostationary orbit, about 36,000 km above earth's equator, using its on board propulsion system.

The earth observation satellite will provide the country near real-time images of its borders and also enable quick monitoring of natural disasters.

Experts said positioning the state-of-the-art agile earth observation satellite in geostationary orbit has key advantages.

"It's going to be a game-changer in some sense for India," a Department of Space official said.

"With onboard high resolution cameras, the satellite will allow the country to monitor the Indian land mass and the oceans, particularly its borders, continuously," the official said.

Listing the objectives of the mission, ISRO had earlier said the satellite would provide near real-time imaging of the large area region of interest at frequent intervals.

It would help in quick monitoring of natural disasters, episodic and any short-term events.

The third objective is to obtain spectral signatures of agriculture, forestry, mineralogy, disaster warning, cloud properties, snow and glacier and oceanography.

<https://www.thehindu.com/sci-tech/science/isro-plans-to-launch-geo-imaging-satellite-on-august-12/article35249440.ece>

इसरो: 12 अगस्त को श्रीहरिकोटा से जियो इमेजिंग सैटेलाइट जीआईसैट-1 लॉन्च करेगा

सार

- 12 अगस्त को इसका प्रक्षेपण होगा। 2021 में यह इसरो की ओर से दूसरी लॉन्चिंग है। इससे पहले 28 फरवरी को पीएसएलवी-सी51 मिशन का सफल प्रक्षेपण हुआ था।

विस्तार

बंगलूरु: कोरोना महामारी के कारण लंबे समय से शांत चल रहा भारतीय अंतरिक्ष अनुसंधान संगठन अगस्त से वापस सैटेलाइट लॉन्च करने में सक्रिय होगा। 12 अगस्त को मौसम अनुकूल रहने पर सुबह 5:43 मिनट पर श्रीहरिकोटा से जीएसएलवी-एफ10 रॉकेट की मदद से जियो इमेजिंग सैटेलाइट जीआईसैट-1 को अंतरिक्ष में रवाना करेगा।



इसरो अध्यक्ष के सिवन - फोटो : PTI

जीआईसैट-1 सैटेलाइट को पिछले साल 5 मार्च को रवाना किया जाना था मगर प्रक्षेपण से पूर्व हुए धमाके के कारण इसे टाल दिया गया। इसके बाद इसे 28 मार्च 2021 को रवाना करने का तय हुआ मगर कुछ तकनीकी कारणों से इसे 8 अप्रैल तक के लिए टाल दिया गया।

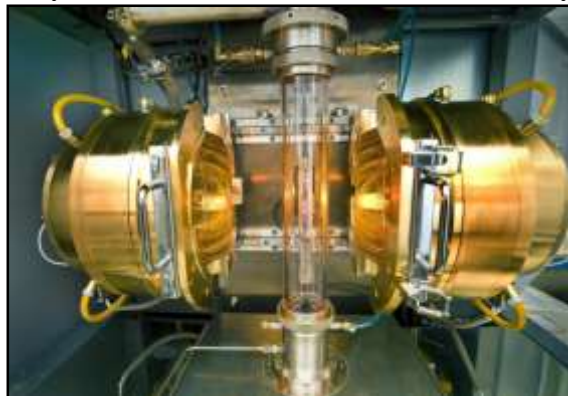
मगर कोरोना के बढ़ते मामलों के बीच लॉकडाउन के कारण इसे पहले मई और फिर अगस्त तक के लिए टाला गया। अब 12 अगस्त को इसका प्रक्षेपण होगा। 2021 में यह इसरो की ओर से दूसरी लॉन्चिंग है। इससे पहले 28 फरवरी को पीएसएलवी-सी51 मिशन का सफल प्रक्षेपण हुआ था। इसमें ब्राजील की सैटेलाइट एमेजोनिया-1 और 18 अन्य छोटे सैटेलाइट अंतरिक्ष में रवाना हुए थे।

<https://www.amarujala.com/india-news/isro-to-launch-imaging-satellite-gisat-1-on-august-12-in-sriharikota>

A new theory of superconductivity

A scientist from the Division of Quantum Condensed Matter Physics at the University of Tsukuba has formulated a new theory of superconductivity. Based on the calculation of the 'Berry connection', this model helps explain new experimental results better than the current theory. The work may allow future electrical grids to send energy without losses.

Superconductors are fascinating materials that may look unremarkable at ambient conditions, but when cooled to very low temperatures, allow electrical current to flow with zero resistance. There are several obvious applications of superconductivity, such as lossless energy transmission, but the physics underlying this process is still not clearly understood. The established way of



Credit: CC0 Public Domain

thinking about the transition from normal to superconducting is called the Bardeen-Cooper-Schrieffer (BCS) theory. In this model, as long as thermal excitations are kept small enough, particles can form "Cooper pairs" which travel together and resist scattering. However, the BCS model does not adequately explain all types of superconductors, which limits our ability to create more robust superconducting materials that work at room temperature.

Now, a scientist from the University of Tsukuba has come up with a new model for superconductivity that better reveals the physical principles. Instead of focusing on the pairing of charged particles, this new theory uses the mathematical tool called the 'Berry connection'. This value computes a twisting of space where electrons travel. "In the standard BCS theory, the origin of superconductivity is electron pairing. In this theory, the supercurrent is identified as the dissipationless flow of the paired electrons, while single electrons still experience resistance," Author Professor Hiroyasu Koizumi says.

As an illustration, Josephson junctions are formed when two superconductor layers are separated by a thin barrier made of normal metal or an insulator. Although widely used in high-precision magnetic field detectors and quantum computers, Josephson junctions also do not fit neatly the inside BCS theory. "In the new theory, the role of the electron pairing is to stabilize the Berry connection, as opposed to being the cause of superconductivity by itself, and the supercurrent is the flow of single and paired electrons generated due to the twisting of the space where electrons travel caused by the Berry connection," Professor Koizumi says. Thus, this research may lead to advancements in quantum computing as well as energy conservation.

More information: Hiroyasu Koizumi, Superconductivity by Berry Connection from Many-body Wave Functions: Revisit to Andreev–Saint-James Reflection and Josephson Effect, *Journal of Superconductivity and Novel Magnetism* (2021). DOI: [10.1007/s10948-021-05905-y](https://doi.org/10.1007/s10948-021-05905-y)
<https://phys.org/news/2021-07-theory-superconductivity.html>

New method to measure loss of signal in far-infrared instruments

After carefully observing dim objects in the night sky, you don't want to waste any precious signal on its way from the telescope dish to the detector. But in the case of far-infrared astronomy, it's not as easy as it sounds to transport the signal efficiently. In fact, it's even an endeavor to measure the exact amount of signal that gets lost. Scientists from SRON and TU Delft have now found a new, easier way to determine the signal loss. In the process they designed a signal-carrying microstrip for the DESHIMA-2 instrument that loses only 1 in 4,900 photons. The results are published in *Physical Review Applied*.



ASTE telescope in Chile, including DESHIMA and in the future DESHIMA-2. Credit: Denys

The Earth's atmosphere blocks out most radiation coming from space, so astronomers like to use satellites for an undisturbed view of the universe. However this comes at a high price, because space instruments need to be extremely reliable and as small as possible. Far-infrared radiation consists of some of the few wavelengths that our atmosphere allows to pass through. So if you're interested in objects emitting far-infrared, such as planetary systems or galaxies far, far away from a long time ago, you could also build a ground based telescope. This was exactly what scientists thought when they designed the Atacama Submillimeter Telescope Experiment (ASTE) in Chile. Researchers from SRON and TU Delft have invented a far-infrared instrument for ASTE, called DESHIMA, and are now developing its successor DESHIMA-2 together with collaborators in The Netherlands and Japan.

Because early galaxies are so far away and planetary systems are so dim, we have to be careful with the sparse light we collect with our telescopes, even if they carry dishes many meters wide. So the DESHIMA hardware team, led by Jochem Baselmans (SRON/TU Delft), tries to reduce the loss of signal. The incoming signal bounces back and forth hundreds of times before having traveled the required distance to the detector, amplifying the loss at each bounce. So if you reduce the loss at each bounce, the total loss goes down dramatically.

For DESHIMA-2, the team aims to reach a loss of only 0.02% per bounce. "To study early galaxies in more detail, we need a spectral resolution of 500," says Baselmans. "In that case even if you lose 0.2% per bounce, you have lost half the signal when it reaches the detector. We need to get the loss down to 1 in 5,000, so 0.02% to preserve most of the collected radiation from space."

Currently the team is almost there, with a so-called microstrip that transports the signal at a loss of only 1 in 4,900. Perhaps the most difficult part wasn't even reaching this level, but rather precisely measuring that the microstrip is actually at that level. Sebastian Hähnle, who led this effort, describes his new measurement method in *Physical Review Applied*, enabling instrument scientists worldwide for the first time to actually know the capabilities of the microstrip they are working on. In the future, instruments will only become more complex, making this new method even more necessary.

To define a microstrip, scientists want to know the so-called internal loss. But when you simply subtract the outgoing signal from the incoming signal in a laboratory, you get a combination of the internal loss and the coupling loss, which happens when the signal bounces. So you need to distinguish between them. Now, Hähnle has found a new, easier way to do this. "With other

methods you need to know how large the incoming calibrated signal is," he says. "That requires expensive and complex experiments. My method does not need that." He created a chip with four microstrips of varying lengths. The longer the microstrip, the less the signal needs to bounce to travel the required distance, so the coupling loss becomes less while the internal loss stays the same. Now if you compare the total loss of all four microstrips, you can deduce the internal loss of each of them.

More information: S. Hähnle et al, Superconducting Microstrip Losses at Microwave and Submillimeter Wavelengths, *Physical Review Applied* (2021). DOI: [10.1103/PhysRevApplied.16.014019](https://doi.org/10.1103/PhysRevApplied.16.014019)
<https://phys.org/news/2021-07-method-loss-far-infrared-instruments.html>

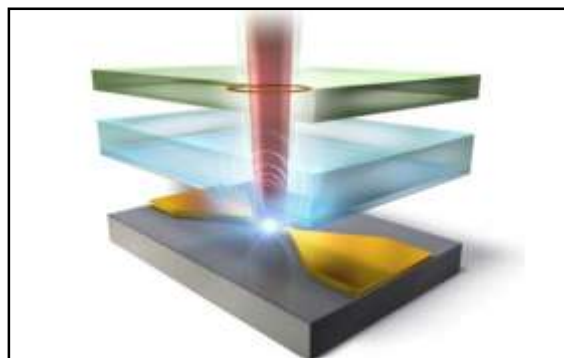


Sat, 10 July 2021

Seeing with radio waves

Scientists from the Division of Physics at the University of Tsukuba used the quantum effect called 'spin-locking' to significantly enhance the resolution when performing radio-frequency imaging of nitrogen-vacancy defects in diamond. This work may lead to faster and more accurate material analysis, as well as a path towards practical quantum computers.

Nitrogen-vacancy (NV) centers have long been studied for their potential use in quantum computers. A NV center is a type of defect in the lattice of a diamond, in which two adjacent carbon atoms have been replaced with a nitrogen atom and a void. This leaves an unpaired electron, which can be detected using radio-frequency waves, because its probability of emitting a photon depends on its spin state. However, the spatial resolution of radio wave detection using conventional radio-frequency techniques has remained less than optimal.



Credit: University of Tsukuba

Now, researchers at the University of Tsukuba have pushed the resolution to its limit by employing a technique called 'spin-locking'. Microwave pulses are used to put the electron's spin in a quantum superposition of up and down simultaneously. Then, a driving electromagnetic field causes the direction of the spin to precess around, like a wobbling top. The end result is an electron spin that is shielded from random noise but strongly coupled to the detection equipment. "Spin-locking ensures high accuracy and sensitivity of the electromagnetic field imaging," first author Professor Shintaro Nomura explains. Due to the high density of NV centers in the diamond samples used, the collective signal they produced could be easily picked up with this method. This permitted the sensing of collections of NV centers at the micrometer scale. "The spatial resolution we obtained with RF imaging was much better than with similar existing methods," Professor Nomura continues, "and it was limited only by the resolution of the optical microscope we used."

The approach demonstrated in this project may be applied in a broad variety of application areas—for example, the characterizations of polar molecules, polymers, and proteins, as well as the characterization of materials. It might also be used in medical applications—for example, as a new way to perform magnetocardiography.

More information: Shintaro Nomura et al, Near-field radio-frequency imaging by spin-locking with a nitrogen-vacancy spin sensor, *Journal of Applied Physics* (2021). DOI: [10.1063/5.0052161](https://doi.org/10.1063/5.0052161)

Journal information: [Journal of Applied Physics](https://doi.org/10.1063/5.0052161)
<https://phys.org/news/2021-07-radio.html>

Business Standard

Sun, 11 July 2021

Research shows why second coronavirus vaccine dose is important

The study showed that the number of antibodies produced and protection offered by vaccination increased substantially after the second vaccine dose was given

New York: A new study of antibodies produced in saliva after Pfizer-BioNTech Covid-19 vaccine shows both importance of second vaccine dose and updating vaccines to combat new variants of concern.

The study showed that the number of antibodies produced and protection offered by vaccination increased substantially after the second vaccine dose was given, showing the importance of receiving the second dose.

The team, including Nicole Schneiderhan-Marra at the University of Tübingen, also examined whether it offered protection against Alpha and Beta variants.

They found that while there was no reduction in neutralising antibodies against the Alpha variant, there was a substantial reduction in neutralising antibodies against the Beta variant, indicated the study, presented at the European Congress of Clinical Microbiology & Infectious Diseases.

To see how the protection offered by the vaccine changed for different variants, the team firstly profiled the antibodies generated by vaccination and then examined their neutralising capacity.

In addition to antibodies circulating within the blood, they checked for the presence of antibodies in saliva as a "first line of defence".

To do this, they adapted a previously developed assay that measures the antibodies present against SARS-CoV-2 and other coronaviruses in the blood, to include targets from variants of concern and to look specifically at the neutralising antibodies.

They collected samples from 23 vaccinated individuals (age 26-58 years, 22 per cent female) who had been vaccinated with the Pfizer-BioNTech vaccine after the first and second doses.

For control groups, the team also collected samples from 35 infected blood donors, 27 infected saliva donors and 49 non-infected saliva donors and also control samples of blood and saliva sourced commercially from before the pandemic began from different age groups.

When looking at the saliva, they saw that vaccinated individuals had large amounts of antibodies present compared to infected individuals, suggesting that vaccination not only offers protection against becoming infected but should you become infected, it reduces the possibility of you transmitting it to others.

(Only the headline and picture of this report may have been reworked by the Business Standard staff; the rest of the content is auto-generated from a syndicated feed.)

https://www.business-standard.com/article/current-affairs/research-shows-why-second-coronavirus-vaccine-dose-is-important-121071000602_1.html



