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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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Fri, 28 May 2021

Israel's ATHOS gun system or Atmanirbhar ATAGS? Defence negative list to finalise next week

The towed gun system is part of Army's Field Artillery Rationalisation Plan that was drawn up in 1999. An Israeli firm has been in the race for over two years now

By Snehesh Alex Philip

New Delhi: Nearly 14 years ago, the Ministry of Defence cleared the proposal for a towed artillery gun system under the 'Buy and Make' category that was meant to be the backbone of India's fire assault. A final decision on this is still awaited.

All eyes are now on the second defence negative import list, which is expected to be out soon, to see if the 155mm x 52 caliber towed artillery gun is on it.

Sources in the defence establishment told ThePrint that the list has been submitted but a physical meeting has not taken place due to the second wave of the Covid-19 pandemic.

The meeting to review and clear the decision is now expected next week.

While the artillery gun was there in the first negative list released on 9 August 2020, the item was subsequently removed.

The reason was that while the indigenous Advanced Towed Artillery Gun System (ATAGS) is being built, a separate process is also on to get similar guns from the global market and making them in the country under the 'Make in India' initiative.

This race was primarily between Israel's Elbit Systems and France's Nexter, and Elbit's Autonomous Towed Howitzer Ordnance System (ATHOS) emerged the winner.

The process for acquiring towed guns began in 2001 as part of the Army's Field Artillery Rationalisation Plan, which had been drawn up in 1999. Multiple requests for proposal (RFPs) were issued. In the last RFP, which was issued under the UPA government, only the two companies mentioned above participated, sources said.

Nearly 14 years ago, the Ministry of Defence cleared the proposal for a towed artillery gun system under the 'Buy and Make' category that was meant to be the backbone of India's fire assault.

Elbit emerged cheaper than Nexter

In March 2019, following what was meant to be an exhaustive 'Field Trial Cum Evaluation Process' spread over several years, which saw several ups and downs, Elbit Systems was declared the lowest bidder (L1).



[Elbit's Autonomous Towed Howitzer Ordnance System \(ATHOS\).](#) | Photo courtesy: Elbit Systems

The deal was for the supply of 400 guns and indigenous production of the remainder 1,180 guns by Ordnance Factory Board (OFB), under a full Transfer of Technology (TOT) process.

Sources in the defence establishment said the price of Elbit Systems' ATHOS was lower by 40 per cent compared to the price of its competitor — Nexter's Trajan gun.

Sources in know of the bidding process said the cost per gun, which weighs less than 15 tonnes and has a fully automatic loading system, put forward by Elbit was less than Rs 11 crore per piece. This is also significantly lower than the estimated cost of the ATAGS, which is said to be anywhere between Rs 16-18 crore.

However, since the bid opened in March 2019 and the completion of the cost negotiation process in July that year, a final decision is pending.

In December last year, the Israeli government also wrote a letter to Defence Minister Rajnath Singh to push for this deal.

However, the Defence Research and Development Organisation (DRDO) has gone on record to oppose any import plans, saying that its ATAGS was better than ATHOS and is the gun of the future.

Elbit's offer

Earlier last year, the Israeli firm also wrote to the Indian defence authorities, stating that in case they prefer to acquire only the first 400 towed guns, the related cost corresponding to TOT can be deducted from the total contract price.

This was due to a line of thinking in the defence establishment that 400 of these guns (for 20 regiments) can be procured from Elbit to "overcome operational voids in the medium artillery in HAA (High Altitude Area) along the northern borders".

However, sources said the figures in the RFP cannot be changed in the middle of the process.

In the letter, Elbit Systems had offered the TOT for the future 1,180 guns as an option for India, at the same cost as mentioned in the commercial offer made.

Elbit also said it has finalised the approach and strategy to achieve 70 per cent indigenisation within the contract of the first 400 towed guns, starting from the first guns.

The company's argument was that the ATHOS is tailored to the special requirements of the Indian Army and it has invested tens of millions of dollars in the design and development of the gun in accordance with Army requirements and in the field trials.

The sources said Elbit also promised to supply the guns much earlier than the contract delivery schedule — the first six guns within 10 months from contract signing, and an additional six guns within 14 months.

According to the Israeli firm, all the remaining guns will be delivered according to an accelerated delivery schedule, which will ensure finalisation of the deliveries not later than 54 months from contract signing, instead of the 72 months stipulated in the draft contract.

In its communications with the Indian defence establishment, Elbit said the ATHOS will end up being an indigenous gun — mass produced, assembled and integrated in India.

Highlighting that it has a joint venture (JV) with Indian firm Bharat Forge, the Israeli company said the technology and design will be fully transferred to the JV and OFB, enabling the ATHOS to be mass-produced in India.

Incidentally, Bharat Forge is also involved with the ATGS development along with the Tata Group.

<https://theprint.in/defence/israels-athos-gun-system-or-atmanirbhar-atags-defence-negative-list-to-finalise-next-week/666695/>

COVID 19: DRDO's Contribution

THE TIMES OF INDIA

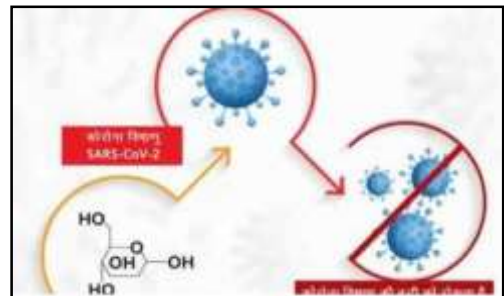
Fri, 28 May 2021

10,000 sachets of anti-Covid drug 2-DG to be available in market from Thursday, Says Rajnath Singh

New Delhi: Union defence minister Rajnath Singh informed that 10,000 sachets of anti-Covid drug 2-DG will be available in the market from Thursday.

The anti-Covid drug has been developed by the Defence Research and Development Organisation (DRDO).

Launching the 'Services e-Health Assistance and Tele-consultation (SeHAT)' OPD Portal via video conferencing, Singh lauded the armed forces, stating that it is a key step taken at a very critical time for the health of service personnel as it will reduce the load of the hospitals.



Chief of Defence Staff Gen Bipin Rawat, Army Chief Gen M M Naravane, and Navy Chief Admiral Karambir Singh were among those who attended the event.

Referring to the second wave of the Covid-19, the Defence Minister said, "This wave of Covid is unprecedented and more dangerous than earlier. But the Defence Ministry has rendered its services in the second wave too. DRDO has set up Covid hospitals and oxygen generation plants in Delhi, Lucknow, Varanasi, and many other parts of the country."

He further said that with help of Hyderabad-based Dr Reddy's Lab, DRDO has produced an essential anti-Covid drug 2-DG.

"It is yielding positive results. I have been receiving information from many states that they want 2-DG. I am delighted to say that 10,000 sachets are coming to market today," he added.

The first batch of the anti-Covid drug was released by defence minister Singh and Union health minister Sr Harsh Vardhan on May 17.

DRDO Chairperson Dr G Satheesh Reddy had informed that the first batch of 2-DG would only be available only to AIIMS, Armed Forces Hospitals, DRDO hospitals, and other places in need. It will be made available to other hospitals in June.

Reddy had also informed that the new anti-Covid drug 2-DG should work against various strains of the Covid-19 virus.

<https://timesofindia.indiatimes.com/india/10000-sachets-of-anti-covid-drug-2-dg-to-be-available-in-market-from-thursday-says-rajnath-singh/articleshow/83002487.cms>



Fri, 28 May 2021

10,000 Sachets of DRDO-Developed Anti-COVID Drug 2-DG are now available in the market

By Bobins Abraham

Highlights

- *The first batch of the anti-COVID drug was released by Defence Minister Singh and Union Health Minister Sr Harsh Vardhan on May 17.*
- *Other than the drug, DRDO has also developed an antibody test kit for the early screening of COVID.*

Union Defence Minister Rajnath Singh informed that 10,000 sachets of anti-COVID drug 2-DG will be available in the market from Thursday.

The anti-COVID drug has been developed by the Defence Research and Development Organisation (DRDO) and Hyderabad-based Dr Reddy's Lab.

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'Should work against various COVID strains'

Reddy had also informed that the new anti-COVID drug 2-DG should work against various strains of the COVID-19 virus.

Last week, the Union Health Ministry had said that 2-DG, reduces a patient's average recovery time by two and a half days and oxygen demand by upto 40 per cent.

"The drug has the potential to become a game-changer in our response against the COVID pandemic as it reduces dependence on oxygen and has the potential to get absorbed differentially," the health minister said.

"In the COVID infected cells, it inhibits virus synthesis and energy production for the process," he added.

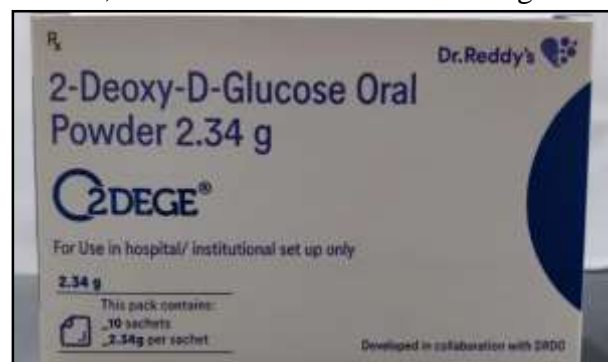
NITI Aayog member (health) Dr VK Paul said Drugs Controller General of India (DCGI) had granted permission for the emergency of 2-DG and the government will consider including it in the national COVID-19 treatment protocol after examining the data of the medicine.

DRDO also developed antibody test kit

Other than the drug, DRDO has also developed an antibody test kit for the early screening of COVID.

DIPCOVAN, the DIPAS-VDx COVID 19 IgG Antibody Microwell ELISA for sero-surveillance has been developed by the Defence Institute of Physiology and Allied Sciences (DIPAS) in association with Delhi-based firm Vanguard Diagnostics Pvt Ltd.

According to DRDO, the kit can detect spike as well as nucleocapsid (S and N) proteins of SARS-CoV-2 virus with a high sensitivity of 97 per cent and specificity of 99 per cent. It was



developed indigenously by scientists, followed by extensive validation on over 1000 patient samples at various COVID hospitals in Delhi.

DRDO said three batches of the product were validated for the last one year. The antibody detection kit is approved by the Indian Council of Medical Research (ICMR) in April 2021.

In May 2021, the product received regulatory approval from the Drugs Controller General of India (DCGI) and Central Drugs Standard Control Organisation (CDSCO), Ministry of Health and Family Welfare to manufacture for sale and distribution.

According to DRDO, DIPCOVAN is intended for the qualitative detection of IgG antibodies in human serum or plasma, targeting SARS-CoV-2 related antigens. It offers a significantly faster turn-around time as it requires only 75 minutes to conduct the test without any cross-reactivity with other diseases. The kit has a shelf life of 18 months.

Vanguard Diagnostics Pvt. Ltd is expected to launch the product commercially by the first week of June 2021. Readily available stock at the time of launch will be 100 kits (approximately 10,000 tests) with a production capacity of 500 kits/month after the launch. It is expected to be available at about Rs 75 per test.

<https://www.indiatimes.com/news/india/10000-sachets-of-drdo-developed-anti-covid-drug-2-dg-are-now-available-in-the-market-541380.html>

THE TIMES OF INDIA

Fri, 28 May 2021

Ahmedabad: Dhanvantari Hospital to now house post-Covid care centre

Ahmedabad: The state government on Thursday announced the commencement of a post-Covid care centre at Dhanvantari Hospital run by the Defence Research and Development Organisation (DRDO) at the Gujarat University Convention Centre. The centre has been set up with a view to provide treatment, primarily for respiratory complications that are seen in patients following recovery from Covid.

A 200-bed facility, including the intensive care unit, has been set up at the Dhanvantari Hospital, where both OPD and indoor patients will be treated for post-Covid complications.

State principal secretary Anju Sharma who is supervising the operations here said, "A number of patients develop serious complications even after they have recovered from Covid. This facility is aimed at providing free treatment for such patients. Each bed is equipped with an oxygen cylinder. Separate HDU-level facilities have also been made available at the centre."



A 200-bed facility, including the intensive care unit, has been set up at the Dhanvantari Hospital

<https://timesofindia.indiatimes.com/city/ahmedabad/dhanvantari-hospital-to-now-house-post-covid-care-centre/articleshow/83018227.cms>

Fri, 28 May 2021

Meet CHETAN, the robot in the frontlines of war against Covid-19

The Covid Hospital Electronic Angel robot or CHETAN can be operated by anyone with basic knowledge of using an Android phone
By Anish Kumar

Aiming to reduce the work pressure on healthcare staff, the Defence Research and Development Organisation has designed and developed an electronic robot to assist Covid-19 patients inside the ICU or viral-loaded environment in Covid-19 hospitals or facilities.

The Covid Hospital Electronic Angel robot or CHETAN can be operated by anyone with basic knowledge of using an Android phone.

Currently, it is being used in a DRDO-run Covid facility in Delhi.

"For the purpose, an android app and a browser-based application to ensure usage with a wider range of devices, including desktops, has also been developed," a DRDO official said.

Equipped with a camera for the operators to navigate and monitor the patients, the robot has three trays and can move on flat surfaces.

Out of three trays, the first one carries tablets while the second tray is used to bring food and other medicines. Patients with reduced movement capability can also take these items from the tray and help themselves. The third tray is for water storage.

"The robot is also fitted with an alarm system, is modular and all materials used are easily available and scalable to meet further requirements," the official said.

The attendants can watch their ward activities through the camera. In emergencies, medical consultation can also be sought.

Since Covid wards are out of bounds for non-essential personnel and work like transporting food and medicines to the patients is being done by medical staff, the robot helps in reducing their load.

In the past, relatives of patients complained about the lack of communication, especially when the patient was on oxygen support. Those complaints have now stopped since this robot helps provide real-time information.

DRDO's Directorate of Information Technology and Cyber Security jointly developed CHETAN with assistance from start-ups like Combat Robotics India, Dadhichi Mitigation Solutions, Zeus Numerix, Pune and SR Engineering Solutions Hyderabad.

<https://newsable.asianetnews.com/coronavirus/meet-chetan-the-robot-in-the-frontlines-of-war-against-covid-vpn-qtr4bq>



कोरोना वायरस की दूसरी लहर में डीआरडीओ ने यूं की देश की मदद

CNN News18 Exclusive: डॉक्टर जी. सतीश रेड्डी ने कहा कि कम समय में ज्यादा से ज्यादा ऑक्सीजन उत्पादन के लिए डीआरडीओ को पीएम नरेंद्र मोदी से लगातार सहयोग मिला।

नई दिल्ली: कोरोना संकट के समय देश के जिन संगठनों ने संक्रमण को काबू करने और आम जनता की भलाई के लिए दिन रात एक कर दिया, उनमें रक्षा अनुसंधान और विकास संगठन (डीआरडीओ) का नाम सबसे ऊपर है। डीआरडीओ चेयरपर्सन डॉक्टर जी. सतीश रेड्डी ने सीएनएन न्यूज18 के आनंद नरसिम्हन से एकसकलूसिव बातचीत में कहा कि संकट के समय कम समय में ज्यादा से ज्यादा ऑक्सीजन उत्पादन के लिए प्रधानमंत्री नरेंद्र मोदी से लगातार सहयोग मिला। ये वैज्ञानिकों का कर्तव्य है कि वे सशस्त्र बलों को उच्च गुणवत्ता के साजो सामान उपलब्ध कराएं।



कोविड की 2-डीजी मेडिसिन पर रेड्डी ने कहा कि ये दवा कोरोना संक्रमित कोशिकाओं का टारगेट करती है. फाइल फोटो

डॉक्टर रेड्डी ने कहा कि डीआरडीओ के मेडिकल इंफ्रा को काफी बढ़ावा मिला है। संगठन ने कोरोना की एंटी बॉडी का पता लगाने वाली डिप्लोमैटिक किट बनाई और 2डीजी मेडिसिन को भी विकसित किया, जिसके जरिए कोरोना मरीजों का इलाज किया सकता है। उन्होंने बताया कि डीआरडीओ ने 5 पीएसए ऑक्सीजन प्लांट विकसित किए हैं और आने वाले समय में 150 से 175 प्लांट और लगाए जाएंगे। मौजूदा वक्त में डीआरडीओ बहुत सारे अस्पतालों को ऑक्सीजन सिलिंडर उपलब्ध करा रहा है और कई राज्यों में कोविड अस्पताल का निर्माण कर रहा है।

कोविड की 2-डीजी मेडिसिन पर रेड्डी ने कहा कि ये दवा कोरोना संक्रमित कोशिकाओं को टारगेट करती है। वायरस के विकास को रोकती है और वायरल सिंथेसिस को रोकने का काम करती है। उन्होंने कहा कि दवा के इस्तेमाल से अस्पताल में भर्ती मरीजों को जल्दी ठीक होने में मदद मिलती है और सप्लीमेंटल ऑक्सीजन पर उनकी निर्भरता भी कम होती है।

कोरोना संक्रमण को काबू करने के लिए आर्मी के प्रयासों पर डीआरडीओ चेयरपर्सन ने कहा कि मानव संसाधन की कमी को रोकने के लिए 800 डॉक्टर तैनात किए गए थे। 110 मेडिकल कैडेट्स को मेडिकल ऑफिसर के रूप में रिमोट इलाकों में तैनात किया गया था। साथ ही बेस अस्पताल में सुविधाओं को बढ़ाया गया और इलाज के लिए ऑक्सीजन लॉजिस्टिक्स को भी विस्तार दिया गया। साथ ही सेना के इंजीनियरों और वैज्ञानिकों ने शोध और विकास में खुद को झोंक दिया।

डीआरडीओ चेयरपर्सन ने कहा कि ऑक्सीजन सप्लाई को गति देने के लिए नौसेना ने ऑपरेशन समुद्र सेतु 2 शुरू किया। मरीजों के इलाज के लिए स्पेशल हेल्थ सेंटर बनाए गए और 200 बैटलफील्ड नर्सिंग असिस्टेंट को तैनात किया गया। इसके साथ ही भारतीय वायुसेना ने ऑक्सीजन को ट्रांसपोर्ट करने के लिए 990 उड़ानें भरीं और विदेशों से आई राहत सामग्री को देश के विभिन्न हिस्सों में वितरित करने में अग्रणी भूमिका निभाई।

<https://hindi.news18.com/news/nation/drdo-chairperson-dr-g-satheesh-reddy-on-coronavirus-and-armed-forces-covid-response-3602074.html>

सारण में 1000 एलपीएम की क्षमता का ऑक्सीजन प्लांट लगायेगा डीआरडीओ

- 150 बेड की क्षमता का होगा संयंत्र
- सांसद रूडी ने भारत सरकार के स्वास्थ्य सचिव को लिखा था पत्र
- बिहार के दस जिला मुख्यालयों में से एक होगा

छपरा: छपरा में चिकित्सकीय उपयोग के लिए ऑक्सीजन संयंत्र की स्थापना होगी। संयंत्र की स्थापना वाले राज्य के दस जिला मुख्यालयों में सारण का भी स्थान है। इस आक्सीजन प्लांट की स्थापना के लिए स्थानीय सांसद राजीव प्रताप रूडी प्रयासरत थे। सारण में 1000 एलपीएम की क्षमता का ऑक्सीजन प्लांट डिफेंस रिसर्च एंड डेवलपमेंट आर्गेनाइजेशन (डीआरडीओ) द्वारा लगाया जायेगा। सांसद रूडी ने बताया कि जानकारी मिली है कि अति शीघ्र शुरू होने वाले संयंत्र की स्थापना के लिए आक्सीजन प्लांट के कल पुर्जे शीघ्र छपरा पहुंच जायेंगे। बिहार सरकार द्वारा भूमि के चिन्हांकन के पश्चात डीआरडीओ द्वारा इस संयंत्र की स्थापना की जायेगी। इसके साथ ही प्लांट का सिविल कार्य भारतीय राष्ट्रीय राजमार्ग प्राधिकरण द्वारा किया जायेगा।

वास्थ्य सचिव को प्रेषित अपने पत्र में सांसद रूडी ने जिला मुख्यालयों में ऑक्सिजन प्लांट न लगाये जाने पर सवाल उठाया था। उन्होंने अपने पत्र में स्पष्ट रूप से लिखा था कि जीवन रक्षक ऑक्सीजन के संयंत्र जिला मुख्यालयों को न देकर अनुमंडल में लगाया जा रहा है, इसका क्या औचित्य है ? उन्होंने मांग की थी कि जिला मुख्यालयों में संयंत्र की स्थापना के लिए त्वरित कार्रवाई की जाय। इस संदर्भ में सांसद ने बिहार सरकार में स्वास्थ्य विभाग के प्रधान सचिव प्रत्यय अमृत और भारत सरकार के स्वास्थ्य सचिव राजेश भूषण से बात भी की थी। बिहार के दस जिला मुख्यालयों में ऑक्सीजन प्लांट लगाया जायेगा जिसमें एक प्लांट सारण सांसद रूडी के प्रयास से छपरा सदर अस्पताल के परिसर में लगाया जा रहा है। 150 बेड की क्षमता के साथ इस ऑक्सीजन प्लांट से इस अस्पताल के रोगियों के अलावा जिले के अन्य अस्पतालों में जरूरत के हिसाब से ऑक्सीजन की सप्लाई हो सकेगी।

<https://www.livehindustan.com/bihar/chapra/story-drdo-to-set-up-1000-lpm-oxygen-plant-at-saran-4067345.html>

जम्मू के भगवती नगर में डीआरडीओ का अस्पताल बनकर तैयार, उपराज्यपाल मनोज सिन्हा करेंगे निरीक्षण

आरडीओ की ओर से जम्मू के भगवती नगर में बनाया जा रहा 500 बिस्तरों की क्षमता वाला कोविड अस्पताल लगभग बनकर तैयार है। उपराज्यपाल मनोज सिन्हा शुक्रवार को इस अस्पताल का निरीक्षण करेंगे। शनिवार से अस्पताल में मरीजों को भर्ती करना शुरू किया जा सकता है।

By Vikas Abrol

जम्मू: आरडीओ की ओर से जम्मू के भगवती नगर में बनाया जा रहा 500 बिस्तरों की क्षमता वाला कोविड अस्पताल लगभग बनकर तैयार है। उपराज्यपाल मनोज सिन्हा शुक्रवार को इस अस्पताल का निरीक्षण करेंगे।

शनिवार से अस्पताल में मरीजों को भर्ती करना शुरू किया जा सकता है। अंतिम फैसला शुक्रवार को ही उपराज्यपाल के निरीक्षण के बाद किया जाएगा। भगवती नगर में अपनी तरह का यह जम्मू संभाग में पहला अस्थायी कोविड अस्पताल बना है। इसमें 125 बिस्तर आइसीयू के हैं जबकि 375 बिस्तर आक्सीजन की सुविधा वाले होंगे। अस्पताल में अभी वेंटीलेटर लगाने का काम अंतिम चरण में चल रहा है।



अस्पताल प्रशासन ने उम्मीद जताई है कि शुक्रवार तक काम लगभग पूरा कर दिया जाएगा। स्टाफ सदस्यों की नियुक्ति भी कर दी गई है। कुछ विशेषज्ञ डाक्टरों और चिकित्सा अधिकारियों को स्वास्थ्य विभाग से इस अस्पताल में एक साल के लिए नियुक्त किया गया है जबकि कुछ को कांट्रैक्ट पर नियुक्त किया गया है। पैरामेडिकल और नर्सिंग स्टाफ की नियुक्ति भी इसी तर्ज पर की गई है। नियुक्त स्टाफ को इन दिनों राजकीय मेडिकल कालेज में विशेष प्रशिक्षण दिया जा रहा है।

आक्सीजन की सुविधा भी अस्पताल में तैयार की जा रही है। पहले इस अस्पताल को 26 मई से शुरू किया जाना था लेकिन स्टाफ की नियुक्ति और अस्पताल निर्माण कार्यों में देरी के चलते इसे शुरू नहीं किया जा सका है। अब शुक्रवार को उपराज्यपाल मनोज सिन्हा अस्पताल का निरीक्षण कर इसका उदघाटन भी करेंगे। लेकिन अभी मरीजों को भर्ती नहीं किया जाएगा। मरीजों को शनिवार या फिर रविवार से भर्ती किया जा सकता है।

<https://www.jagran.com/jammu-and-kashmir/jammu-drdo-hospital-in-bhagwati-nagar-of-jammu-ready-lg-manoj-sinha-will-inspect-21683352.html>

NHAI to build 13 oxygen plants in Kerala

The NHAI is in charge of civil and electrical works while the DRDO will install the plants

The National Highway Authority of India or NHAI will build oxygen plants in Kerala. According to reports, the NHAI will set up 13 plants in Kerala. The first oxygen generation plant is likely to come up in the Government Medical College Kollam, Paripally. The plant will have a generation capacity of 1000 litres per minute. The project is part of the 300 plus Medical Oxygen plants being set up by the Union Ministry of Health and Family Welfare under the Government of India by using funds from the PM Cares Fund. In the first phase 72 plants will be set up across the county. Among this, two other hospitals too will get the plants - the Government women and children hospital in Alappuzha and the Government hospital in Pala, Kottayam.



Three more hospitals in Kerala will get the facilities in the second phase. They are: General Hospital, Muvattupuzha (Ernakulam district), General Hospital, Thrissur and Malappuram District Hospital in Tirur. In this phase a total of 52 plants will be set up.

Seven plants will be installed in government hospitals across Kerala i.e General Hospital, Alappuzha, INHS Sanjivani, Kochi, Kasaragod District Hospital, Kanhangad, General Hospital, Changanacherry, Government Medical College Hospital, Manjeri, Malappuram District Hospital at Perinthalmanna and General Hospital, Neyyatinkara, at a later stage.

While the National Highways Authority of India or NHAI is in charge of the civil and electrical works of the project, the plants are installed by the Defence Research and Development Organisation (DRDO).

Each plant is likely to cost around Rs 9 to 10 lakh.

Meanwhile the state government has to ensure land, power supply, power backup, oxygen pipeline system etc to set up the plants. Further two technical persons from the hospital will be appointed to manage these plants along with a nodal officer in charge of the plant.

<https://www.thenewsminute.com/article/nhai-build-13-oxygen-plants-kerala-149595>

Patients of moderate symptoms to be admitted in IDPL centre: AIIMS (R)

Dehradun: The All India Institute of Medical Sciences (AIIMS) Rishikesh has clarified that only the patients having moderate symptoms of Covid-19 would be admitted to the Covid Care Centre (CCC) prepared by Defence Research and Development Organisation (DRDO) at IDPL Rishikesh. The 500 bed centre named after Rifleman Jaswant Singh Rawat was inaugurated by chief minister (CM) Tirath Singh Rawat on Wednesday.

Trauma surgeon, AIIMS and in-charge of 'Rifleman Jaswant Singh Rawat' of IDPL centre, Dr Madhur Uniyal informed that the centre has four wards of 100 oxygen beds each and a centralized oxygen supply is available in these wards. He informed that Covid patients with moderate symptoms would be treated at the centre while 100 ICU beds are available in the AIIMS Rishikesh for proper treatment of critical patients of Covid-19. "Ambulances have been kept ready to transport critical patients from IDPL to AIIMS. The centre also has a facility for admission of children and Mucar patients," he said.

A 'Raibaar Desk' has been set up in the centre by which the information about the health of admitted Covid-19 patients can be gathered. 'Raibaar' is a word of Garhwali language which means conveying the message.

<https://www.dailypioneer.com/2021/state-editions/patients-of-moderate-symptoms-to-be-admitted-in-idpl-centre--aiims--r-.html>

नवभारत टाइम्स

DRDO के हॉस्पिटल में आधे से ज्यादा ICU बेड्स हुए खाली

सूत्रों से मिली जानकारी के अनुसार, बुधवार को डीआरडीओ के इस अस्पताल में 115 आईसीयू बेड्स ऑपरेशनल रखे गए थे, लेकिन उनमें से केवल 50 बेड्स पर ही मरीज भर्ती थे, जबकि 65 बेड्स खाली पड़े हुए थे। इसी तरह 317 नॉन आईसीयू बेड्स में से केवल 192 बेड्स पर ही मरीज भर्ती थे और सवा सौ बेड्स खाली थे।

By saroj Singh

नई दिल्ली: दिल्ली कैंट इलाके में कोरोना के गंभीर हालत वाले मरीजों के इलाज के लिए डीआरडीओ ने एक विशेष अस्पताल तैयार किया था। इस अस्पताल में ज्यादातर वेंटिलेटर की सुविधा वाले आईसीयू बेड्स लगाए गए थे, क्योंकि उस वक्त दिल्ली में आईसीयू बेड्स की भारी कमी चल रही थी। यही वजह थी कि 19 अप्रैल को जब इस अस्पताल में मरीजों का एडमिशन शुरू हुआ, तो पहले ही दिन सारे बेड फुल हो गए। उसके बाद कई दिनों तक रोज इस अस्पताल के बाहर एंबुलेंसों की लंबी कतारें लगी नजर आईं, जिनमें अपने परिजनों को एडमिट कराने के लिए लोग उन्हें यहां लेकर आए थे, लेकिन चूंकि बेड्स फुल थे, इसलिए नए मरीजों को मुश्किल से ही एडमिशन मिल पाता था। ज्यादातर लोगों को यहां से मायूस ही लौटना पड़ता था। गंभीर हालत वाले मरीजों को यहां लाए जाने के कारण ही इस बार इस अस्पताल में भर्ती मरीजों की मौत का आंकड़ा भी बहुत ज्यादा रहा, लेकिन अब इस अस्पताल से काफी राहत भरी खबर आई है।

दिल्ली में पिछले दो हफ्तों के दौरान कोरोना के नए केसेज में जो कमी आई है, उसकी बदौलत अब इस अस्पताल में मरीजों की तादाद भी तेजी से घट रही है। स्थिति यह है कि यहां आधे से ज्यादा आईसीयू बेड्स खाली पड़े हैं और जितने मरीज आईसीयू में भर्ती हैं, उससे ज्यादा मरीज नॉन आईसीयू वाले बेड्स पर हैं, जो अपने आप में काफी राहत की बात है, क्योंकि इसका अर्थ यही है कि अब गंभीर हालत वाले मरीज काफी कम आ रहे हैं।

सूत्रों से मिली जानकारी के अनुसार, बुधवार को डीआरडीओ के इस अस्पताल में 115 आईसीयू बेड्स ऑपरेशनल रखे गए थे, लेकिन उनमें से केवल 50 बेड्स पर ही मरीज भर्ती थे, जबकि 65 बेड्स खाली पड़े हुए थे। इसी तरह 317 नॉन आईसीयू बेड्स में से केवल 192 बेड्स पर ही मरीज भर्ती थे और सवा सौ बेड्स खाली थे। इस तरह 432 बेड्स में से कुल 190 बेड्स बुधवार को यहां खाली पड़े हुए थे।

सूत्रों का कहना है कि इस अस्पताल में अब मरीजों का डेथ रेट भी तेजी से कम हो रहा है, जबकि एक वक्त ऐसा था कि जब यहां आने वाले हर तीसरे चौथे मरीज को बचा पाना नामुमकिन साबित हो रहा था और रोज बड़ी संख्या में मौतें हो रहीं थीं। हालांकि, डीआरडीओ ने अभी तक यह खुलासा नहीं किया है कि 19 अप्रैल से अब तक यहां कुल कितने मरीज भर्ती हुए, उनमें से कितने ठीक होकर घर लौटे और कितनों की मौत हो गई, लेकिन बताया जा रहा है कि अब हालात पहले से काफी बेहतर हैं और नए मरीजों की आवक भी काफी कम रह गई है। इसीलिए यहां तैनात डॉक्टर्स भी अब थोड़ी राहत की सांस ले पा रहे हैं।



<https://navbharattimes.indiatimes.com/metro/delhi/other-news/more-than-half-beds-are-now-empty-in-drdo-hospital/articleshow/82998266.cms>



Press Information Bureau
Government of India

Ministry of Defence

Thu, 27 May 2021 2:43PM

Raksha Mantri Shri Rajnath Singh launches SeHAT OPD portal to provide tele-medicine services to Armed Forces personnel and veterans

Raksha Mantri Shri Rajnath Singh launched 'Services e-Health Assistance & Tele-consultation (SeHAT) OPD portal through video conferencing on May 27, 2021. The portal provides tele-medicine services to the serving Armed Forces personnel, veterans and their families. The services can be availed by registering on the website <https://sehatopd.in/>. This is the final version of the SeHAT OPD portal with advanced safety features. The trial version was made functional in August 2020. More than 6,500 medical consultations have already been carried on the beta version by service doctors.

Speaking on the occasion, Shri Rajnath Singh lauded Department of Military Affairs (DMA), Armed Forces Medical Services (AFMS), Integrated Defence Staff (IDS), Centre for Development of Artificial Computing (C-DAC) Mohali and other organisations involved in the development of the portal, saying that it reflects the Government's commitment to 'Digital India' and 'e-governance'. "It has always been our endeavor to provide better, faster and transparent facilities to our countrymen," he underlined. The Raksha Mantri described SeHAT OPD portal as a great example of innovation, especially at a time when the nation is fighting the COVID-19 pandemic. He said, the portal will help reduce the load on hospitals and patients will be able to get contactless consultations in an easy and effective manner.

The Raksha Mantri urged the AFMS to consider adding specialist doctors to this portal and incorporating the service of delivery of medicines to the homes of the Service personnel. This will provide additional services and ensure greater convenience to the Armed Forces personnel, he said. Shri Rajnath Singh suggested that regular feedback of beneficiaries should be obtained for improved delivery of services.

Shri Rajnath Singh commended the role being played by the Defence Research and Development Organisation (DRDO) and the Armed Forces in the fight against the second COVID-19 wave. He made special mention of the COVID hospitals and Oxygen Generation plants being set up by DRDO at many places across the country including Delhi, Lucknow, Gandhinagar & Varanasi as well as the development of 2-DG drug to fight the virus. He also appreciated AFMS for deploying additional medical professionals in COVID hospitals and effectively dealing with the surge in cases. Shri Rajnath Singh lauded Indian Air Force and Indian Navy for working tirelessly to transport oxygen and other critical medical equipment on time from within the country and abroad. He urged them not to let their guard down and continue their efforts with dedication until the war against COVID-19 is won.

Chief of Defence Staff General Bipin Rawat, Chief of Naval Staff Admiral Karambir Singh, Chief of Army Staff General M M Naravane, Defence Secretary Dr Ajay Kumar, DG AFMS

Surgeon Vice Admiral Rajat Datta, Deputy Chief IDS (Medical) Lieutenant General Madhuri Kanitkar and other senior civil & military officials of Ministry of Defence attended the event virtually.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1722115>



पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Thu, 27 May 2021 2:43PM

रक्षा मंत्री श्री राजनाथ सिंह ने सशस्त्र बल कार्मिकों एवं पूर्व सैनिकों को टेली-मेडिसिन सेवाएं प्रदान करने के लिए सेहत ओपीडी पोर्टल का शुभारंभ किया

रक्षा मंत्री श्री राजनाथ सिंह ने दिनांक 27 मई, 2021 को वीडियो कॉन्फ्रेंसिंग के माध्यम से 'सर्विसेज़ ई-हेल्थ असिस्टेन्स एवं टेली-कंसल्टेशन (सेहत) ओपीडी पोर्टल शुरू किया। यह पोर्टल सेवारत सशस्त्र बलों कार्मिकों, पूर्व सैनिकों तथा उनके परिवारों को टेली-मेडिसिन सेवाएं प्रदान करता है। वेबसाइट <https://sehatopd.in/> पर रजिस्ट्रेशन कराकर इन सेवाओं का लाभ उठाया जा सकता है। यह उन्नत सुरक्षा सुविधाओं के साथ सेहत ओपीडी पोर्टल का अंतिम संस्करण है। इसका परीक्षण संस्करण अगस्त 2020 में शुरू किया गया था। सैन्य सेवा के डॉक्टरों द्वारा बीटा संस्करण पर 6500 से अधिक चिकित्सा परामर्श पहले ही दिए जा चुके हैं।

इस अवसर पर श्री राजनाथ सिंह ने सैन्य मामलों के विभाग (डीएमए), सशस्त्र बल चिकित्सा सेवाएं (एएफएमएस), एकीकृत रक्षा स्टाफ (आईडीएस), प्रगत संगणन विकास केन्द्र (सी-डैक) मोहाली और पोर्टल के विकास में शामिल अन्य संगठनों की सराहना करते हुए कहा कि यह डिजिटल इंडिया और ई-गवर्नेंस के प्रति सरकार की प्रतिबद्धता को दर्शाता है। उन्होंने रेखांकित किया, 'हमेशा से हमारा प्रयास रहा है कि हमारे देशवासियों को बेहतर, तेज और पारदर्शी सुविधाएं प्रदान की जाएं। रक्षा मंत्री ने सेहत ओपीडी पोर्टल को नवाचार का एक बड़ा उदाहरण बताया, खासकर ऐसे समय में जब राष्ट्र कोविड-19 महामारी से लड़ रहा है। उन्होंने बताया कि इस पोर्टल से अस्पतालों का भार कम करने में मदद मिलेगी और मरीज आसान और प्रभावी तरीके से संपर्क रहित परामर्श प्राप्त कर सकेंगे।

रक्षा मंत्री ने एएफएमएस से आग्रह किया कि वे इस पोर्टल पर विशेषज्ञ डॉक्टरों को जोड़ने पर विचार करें और सेवाकर्मियों के घरों में दवाओं के वितरण की सेवा को शामिल करें। उन्होंने कहा कि इससे अतिरिक्त सेवाएं उपलब्ध होंगी और सशस्त्र बलों के कर्मियों को अधिक सुविधा सुनिश्चित होगी। श्री राजनाथ सिंह ने सुझाव दिया कि सेवाओं के बेहतर वितरण के लिए लाभार्थियों का नियमित फीडबैक लिया जाना चाहिए।

श्री राजनाथ सिंह ने रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) और सशस्त्र बलों द्वारा दूसरी कोविड-19 लहर के खिलाफ लड़ाई में निभाई जा रही भूमिका की सराहना की। उन्होंने डीआरडीओ द्वारा दिल्ली, लखनऊ, गांधीनगर और वाराणसी सहित देश भर में कई स्थानों पर स्थापित किए जा रहे कोविड अस्पतालों और ऑक्सीजन उत्पादन संयंत्रों के साथ-साथ वायरस से लड़ने के लिए 2-डीजी दवा के विकास

का विशेष उल्लेख किया। उन्होंने कोविड अस्पतालों में अतिरिक्त चिकित्सा पेशेवरों की तैनाती और मामलों में वृद्धि से प्रभावी ढंग से निपटने के लिए एएफएमएस की भी सराहना की। श्री राजनाथ सिंह ने देश-विदेश के भीतर से समय पर ऑक्सीजन और अन्य महत्वपूर्ण चिकित्सा उपकरणों के परिवहन के लिए अथक परिश्रम करने के लिए भारतीय वायु सेना और भारतीय नौसेना की सराहना की। उन्होंने उनसे आग्रह किया कि वे अपनी मुहिम में ढिलाई न लाएं और कोविड-19 के खिलाफ युद्ध जीतने तक समर्पण के साथ अपने प्रयास जारी रखें।

इस अवसर पर रक्षा प्रमुख जनरल बिपिन रावत, नौसेना प्रमुख एडमिरल करमबीर सिंह, सेनाध्यक्ष जनरल एम एम नरवणे, रक्षा सचिव डॉ. अजय कुमार, डीजी एएफएमएस सर्जन वाइस एडमिरल रजत दत्ता, डिप्टी चीफ आईडीएस (मेडिकल) लेफ्टिनेंट जनरल माधुरी कानितकर और रक्षा मंत्रालय के अन्य वरिष्ठ सिविल तथा सैन्य अधिकारी मौजूद रहे।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1722152>

THE TIMES OF INDIA

Fri, 28 May 2021

Army Vice Chief reviews India's military preparedness in eastern Ladakh

New Delhi: Vice Chief of Army Staff Lt Gen C P Mohanty on Thursday carried out a comprehensive review of India's military preparedness in eastern Ladakh on the first day of his three-day visit to the region where Indian and Chinese troops have been locked in a bitter standoff for over a year.

Both sides are currently engaged in talks to take forward a disengagement process in areas such as Hot Springs, Gogra and Depsang, after completing the withdrawal of troops and weapons from the North and South banks of Pangong Lake in February.

The Army said Lt Gen PGK Menon, the commander of the Leh-based Fire and Fury Corps, briefed the Vice Chief of Army on the overall security scenario in the strategically sensitive sector.

Lt Gen Menon has been leading the Indian Army delegation at the last several rounds of talks with the Chinese military.

"Lieutenant General C P Mohanty #VCOAS arrived at #Leh today on a three day visit to Fire & Fury Corps. He was briefed by GOC Fire & Fury Corps on the operational situation & preparedness in the Corps Zone," the army tweeted.

The 14 Corps, popularly known as Fire and Fury Corps, is responsible for guarding the Line of Actual Control (LAC) with China in the Ladakh region.

Last month, Army Chief Gen MM Naravane had visited several high-altitude forward areas in eastern Ladakh.

India and China are locked in a military standoff at multiple friction points in eastern Ladakh since early May last year. They have completed the withdrawal of troops and weapons from the North and South banks of Pangong Lake in February following a series of military and diplomatic talks.

There was no visible forward movement in disengagement of troops in the remaining friction points as the Chinese side did not show flexibility in their approach on it at the 11th round of military talks with the Indian Army on April 9.



Following the talks, the Indian Army said both sides held a detailed deliberation on disengagement in remaining areas and agreed to jointly maintain stability on the ground, avoid any new incidents and resolve the outstanding issues in an "expeditious manner".

Earlier this month, external affairs minister S Jaishankar said the relationship between India and China is at a crossroads and its direction depends on whether the neighbouring country adheres to various agreements on maintaining peace and tranquillity along the border.

Lt Gen Mohanty also presented oxygen concentrators gifted by Army Wives Welfare Association to the Fire and Fury Corps.

<https://timesofindia.indiatimes.com/india/army-vice-chief-reviews-indias-military-preparedness-in-eastern-ladakh/articleshow/83008495.cms>



Fri, 28 May 2021

3 more Rafale jets land in India from France

It is expected that the full deliveries of 36 Rafale aircraft will be completed well before April 2022 as announced by Union defence minister Rajnath Singh in Parliament

By Shishir Gupta

Another batch of three Rafale fighter jets landed at the Ambala airbase on Thursday, taking the total number of Rafales in the Indian Air Force (IAF) inventory to 23.

According to people aware of the development in Dassault, four aircraft were supposed to take off from Merignac-Bordeaux airbase in France on May 20, but only three could because of the unavailability of more mid-air refuellers in the UAE.

Although four Rafale Omni role fighters were supposed to leave on May 20, the flights were rescheduled due to maintenance issues with the mid air refuellers. The fighters could only take off today due to long weekend holidays in France, the people cited above said.



India ordered 36 warplanes from France in 2016.(File photo)

The IAF is all set to resurrect the 101 "Falcons of Chamb" squadron at Hashimara in West Bengal. It is expected that the full deliveries of 36 Rafale aircraft will be completed well before April 2022 as announced by Union defence minister Rajnath Singh in Parliament

With India likely to buy more front-line fighters to complete the stalled requirement of 126 medium multi-role combat aircraft (MMRCA), the French have not only offered hot engine technology to India but are also willing to jointly develop extended range and capability Hammer air-to-ground missile under the Atmanirbhar Bharat route. French engine manufacturer Safran has already conveyed the offer for jointly developing aircraft engines upto 100 Kilo Newton thrust as well as share the hot engine technology which Indian allies in the west are reluctant to share.

France has also offered to share and jointly develop technology for longer range and heavier Highly Agile and Manoeuvrable Munition Extended Range (Hammer) missile which is currently part of the weapons package on the Indian Rafale. With a range of over 70 kilometres, the Hammer weapon can be guided on to the target using GPS, Inertial Navigation and Infra-red seeker with the capability to adjust to target location mid-air using maps for course correction. The latest version of this weapon has a 1,000 kilogram bomb and with laser guidance technology.

India ordered 36 warplanes from France (equivalent of two squadrons) in 2016 for ₹59,000 crore under a government-to-government deal.

<https://www.hindustantimes.com/india-news/3-more-rafale-jets-land-in-india-from-france-101622136641072.html>

India must more cleverly do to China what Pakistan did to us. But don't turn LAC into LoC

Jaishankar, Naravane, Rawat's recent statements show they are anchoring India's defence strategy on 'hope'. That's not how China works

By Lt Gen H S Panag (Retd), Edited by Neera Majumdar

This week, *The Hindu* broke a story about a minor face-off in the first week of May between Indian and Chinese patrols in the three-kilometre-wide buffer zone created in the Galwan Valley. The buffer zone was created post the 15/16 June 2020 brutal, medieval clash without arms that left 20 Indian and unspecified number—officially four—of People's Liberation Army soldiers dead. Apparently, after the 30 days moratorium on patrolling, both sides occasionally patrolled up to their respective claim lines at different timings. This time, it seems that the rival patrols came face to face, but the situation was diffused according to traditional protocol.

In my view, this was a minor issue. However, it was the denial by the Army along with an alleged insinuation against unidentified “sources trying to derail the ongoing process for early resolution of issues in Eastern Ladakh” that reflects poorly on the Indian political and military strategy adopted to counter China's aggression across the Line of Actual Control (LAC).

Last week, the Chief Of Army Staff (COAS), Chief of Defence Staff (CDS) and the foreign minister held forth on the likely approach being adopted by India.

The top brass speaks

On 19 May, in an interview with CNN News18, COAS General M.M. Naravane said that “both sides are observing the disengagement in letter and spirit. There has been no transgression of any kind and the process of talks is continuing.” When specifically asked by the anchor about an alleged confrontation between rival patrols in Galwan Valley on 2 May, he categorically denied the same. He also said that the disengagement process has been “cordial so far” and he hoped that the trust that has been built over the past three months will help India and China make “forward movement in other areas where issues are still to be resolved.”

When asked about the number of troops deployed along the LAC, he said that the number remains the same as during the height of the standoff last year — 50-60,000 in both Eastern Ladakh and the northeast.

“The disengagement has happened, but there has been no de-escalation. That's why the troop presence in the whole front, right from Ladakh up to Arunachal Pradesh, continues. We have to be ready to be deployed in the long run too,” Naravane said.

In another interview with CNN News18, Chief of Defence Staff General Bipin Rawat said, “The Indian armed forces have been given the task to ensure [that] the sanctity of our borders are maintained and no part of our territory is lost without a fight. The Service Chiefs and I have said that we need to be prepared, and any misadventure from our adversaries will be dealt with firmly.”

During an Indian Express-Financial Times event, Foreign Minister S. Jaishankar said, “I think the relationship is at a crossroads. And which direction we go, depends on whether the Chinese side would adhere to the consensus, whether it would follow through on the agreements, which we



File photo of Indian and Chinese troops and tanks disengaging from the banks of the Pangong lake area in Eastern Ladakh, February 2021 |ANI

both have done for so many decades. Because what is very clear in the last year is that border tensions cannot continue with, you know, cooperation in other areas.”

Contours of Indian strategy

Based on the statements of the top brass, it seems that our strategy is anchored on ‘hope’. Jaishankar says that with tension on the border it can not be “business as usual” with China. But China continues to be our largest trading partner. Our sanctions on Chinese apps and excluding its firms from 5G bidding have no more than a cosmetic impact. Even if like with Pakistan, we stop doing business, it will have a negligible effect on China’s GDP, but our economy will suffer. So, the foreign minister’s public statements are contingent on China compromising its strategy, which it has no intention to do.

The COAS “hopes” that the trust built in the last three months after the standalone agreement to disengage from north/south bank of Pangong Tso will enable “forward movement” to resolve the “issues” in other areas, implying that China will restore status quo ante April 2020 with or without buffer zones. However, China has no intention to do so.

The CDS kept it simple — India must defend our territory against any misadventure by our adversary. He should have qualified his statement by adding “any further misadventure by the adversary”, as 600-800 sq km of Depsang Plains, 35-40 km of 4 km-wide Kugrang River Valley and Charding-Ninglung Nala, south of Demchok, continue to remain under Chinese control since May 2020.

In a nutshell, our strategy is defensive and reactive to China’s future actions. We have no intention to militarily restore status quo ante April 2020. Diplomacy has been relegated to military-to-military talks at the Corps Commander level and Working Mechanism for Consultation & Coordination on India-China Border Affairs (WMCC) at the Joint Secretary level.

Until China obliges by unilaterally restoring status quo ante April 2020, our enhanced deployment of “50-60,000 troops” troops will continue. Mercifully, the LAC is not planned to be and, I dare to say, can not be, manned like the Line of Control (LoC). The terrain along the LAC is not defensible and will subsume all our mountain divisions.

In my view, we have no clarity on China’s political and military aims and our strategy is flawed and reflects intellectual bankruptcy.

China’s strategy

China considers itself to be a superior power and will not allow India to be an equal competitor unless India is able to increase its Comprehensive National Power (CNP) to a level of what Beijing has vis-a-vis the US today. Since India was perceived by China to be punching above its weight without the economic and military oomph, it decided to cut India down to size. This, in simplest terms, along with the immediate provocation of India developing border infrastructure in sensitive areas, was the reason for its preemptive offensive manoeuvre in Eastern Ladakh.

To achieve its political aim of cutting India down to size, it restricted its military aim to preemptively secure un-held strategic areas up to its 1959 Claim Line, except in the Indus Valley. These intrusions make large areas militarily untenable for India in a war, and thus would prevent development of infrastructure that threatens China. It did not want to start a war and securing territory was not its aim because, in April-May 2020, China could have easily seized the Daulat Beg Oldi (DBO) Sector, the entire area northeast of Pangong Tso and the Indus Valley up to the Ladakh Range. Hence, it put the onus of escalation on India and had enough reserves to inflict retribution in case we raised the ante.

India from the word go had the option of quid pro quo action in similar un-held areas like Kailash Range (both in Chushul and Indus Valley sectors), across Ane La pass and Chumar. This would have threatened Rudok and Nagari, and put the onus on China to escalate. However, political/military dithering and fear of a setback restricted our actions to defensive and dissuasive concentration of troops. Thus, an opportunity was lost. More so, when nuclear weapon-armed States cannot fight a decisive conventional war. Our later action of securing the Kailash Range only in Chushul sector restricted to the LAC allowed the PLA to climb up and contest the

Kailash Range ridge. Our marginal tactical gain did not neutralise the looming strategic threat to the untenable DBO and Gogra- Kugrang-Hot Springs Sectors. Hence, the standalone agreement with respect to north/south of Pangong Tso in February 2021.

It is pertinent to point out that at no place did the PLA attack any of our Indo-Tibetan Border Police (ITBP) or Army posts. Since we have an ITBP post at Demchok, China steered clear of the Indus Valley where the 1959 Claim Line is 30 km to the west at Fukche and along the eastern shoulder of the Koyul Valley. Even when we provoked it by securing the Kailash Range, it did not resort to force. Moreover, as a superior power, China is more apprehensive of even a minor setback. And now, the threat of quid pro quo action by India is forcing China to develop military bases in the vicinity of the LAC to reduce its 1,000 km extended line of communication from Xinjiang.

Recommended strategy

Nuclear weapons safeguard us from a decisive defeat at the hands of China. We must more cleverly do to China what Pakistan has done to us.

Rely upon diplomacy to neutralise the Chinese threat. Not confront China until our CNP, particularly the economic and military components, are at the same level where China is today. Restore economic relations without compromising our stand on the border dispute. Strike a balance between our strategic partnership with the US and Chinese sensitivities.

Accept the 1959 Claim Line as the LAC in all areas except the Indus Valley. In any case, it is a fait accompli. Try and salvage buffer zones in Depsang Plains and Kugrang River-Gogra-Hot Springs during further negotiations.

Do not convert LAC into LoC through large-scale deployment. In turn, dot the LAC with ITBP posts. All patrolling points must be converted to ITBP posts. Place the ITBP under the Army's operational control.

Make our surveillance fail-safe to prevent being surprised.

Do not disproportionately increase the number of troops in defensive tasks.

Our current deployment is adequate to stalemate the Chinese and give them a bloody nose at our main defences. To cater for the vast areas ahead of the main defences up to the LAC, ensure tailor-made Integrated Battle Groups as an agile and mobile reserve to preempt the PLA on and across the LAC.

Carry out holistic national security and military reforms to bridge the differential with China, particularly in the realm of military technology.

In my view, hyper-nationalism and imagined pretensions of being a strong power are preventing the Narendra Modi government from adopting a pragmatic strategy against China. It would be prudent to explain the reality to the public and set a goal of 2050 to be the year for redemption of national glory to cock a snook at China. That would be the beginning of our century!

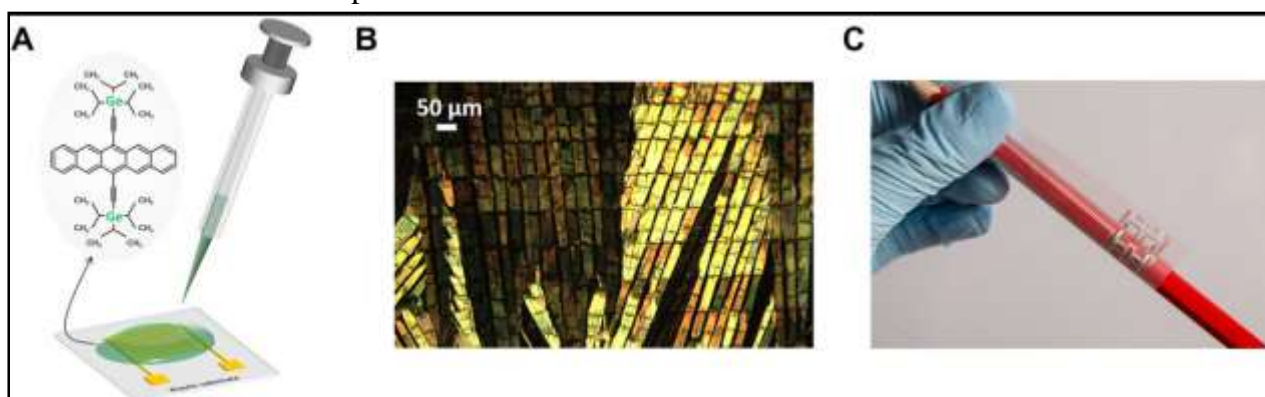
(Lt Gen H S Panag PVSM, AVSM (R) served in the Indian Army for 40 years. He was GOC in C Northern Command and Central Command. Post retirement, he was Member of Armed Forces Tribunal. Views are personal.)

<https://theprint.in/opinion/india-must-do-to-china-what-pakistan-did-to-us-but-dont-turn-lac-into-loc/665770/>

Detecting 5-MeV protons using a flexible organic thin-film device

By Bob Yirka

A team of researchers affiliated with several institutions in Italy and one in the U.S. has developed an organic thin-film device that can be used to measure doses of proton radiation. In their paper published in the journal *Science Advances*, the group describes their semiconductor-based thin film device and possible uses for it.



Organic thin film–based device: Architecture and morphology. (A) Coplanar structure composed of two interdigitated electrodes (Au) deposited onto a plastic substrate (125 μm thick) by thermal evaporation. The organic semiconducting thin film is deposited on the top by drop casting, and it is composed of TIPGe-Pn. (B) Optical image of the well-aligned microcrystalline structures forming the thin-film semiconducting layer. (C) Flexibility of the here presented TIPGe-Pn–based detectors. Photo credit: Ilaria Fratelli, Department of Physics and Astronomy, University of Bologna, Italy. Credit: *Science Advances* (2021). DOI: 10.1126/sciadv.abf4462

As the researchers note, the development of proton-detecting devices has been a goal of physicists for many years because of their use in fundamental research efforts. More recently, such devices have become desirable for proton therapy, in which protons rather than traditional X-rays are fired at cancerous tumors because they can be directed more precisely. In this new effort, the researchers have developed an organic proton detection device. They note that it has advantages over other non-organic devices because its density is very nearly the same as human tissue meaning no recalibration is needed when using it for medical applications.

The detecting device was created by depositing an organic thin film of microcrystalline TIPGe-Pn onto a plastic substrate. As part of the process, the thin film was directed to cover a pair of interdigitated gold electrodes. The researchers note that depositing the thin film was done from a solution, making it a very inexpensive approach to creating a proton detector—they also note that it makes the technique very scalable. And they further note that because the process can be done at low temperatures it can be used to make flexible and possibly portable devices.

The researchers tested their device using a real-time scenario and also in integration mode—protons in a 5 MeV beam were fired at the device using the 3 MV Tandatron accelerator at the LABEC laboratory, in Florence. In so doing the team found the device capable of detecting in the range of 5.15 ± 0.13 pC/Gy with the sensors demonstrating a stable response in ranges from 3.5×10^9 and 8.7×10^{11} protons/cm².

The researchers conclude by suggesting their detector could be used to monitor healthy tissue during proton therapy sessions. They also note that it could also be used by astronauts to measure the amount of radiation they are absorbing during long missions in space.

More information: Ilaria Fratelli et al, Direct detection of 5-MeV protons by flexible organic thin-film devices, *Science Advances* (2021). DOI: [10.1126/sciadv.abf4462](https://doi.org/10.1126/sciadv.abf4462)

Journal information: *Science Advances*
<https://phys.org/news/2021-05-mev-protons-flexible-thin-film-device.html>

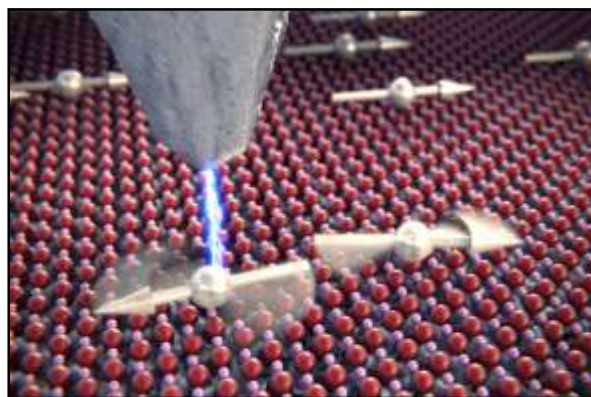


Fri, 28 May 2021

Scientists overhear two atoms chatting

How materials behave depends on the interactions between countless atoms. You could see this as a giant group chat in which atoms are continuously exchanging quantum information. Researchers from Delft University of Technology in collaboration with RWTH Aachen University and the Research Center Jülich have now been able to intercept a chat between two atoms. They present their findings in *Science* on 28 May.

Atoms, of course, don't really talk. But they can react to each other. This is particularly the case for magnetic atoms. "Each atom carries a small magnetic moment called spin. These spins influence each other, like compass needles do when you bring them close together. If you give one of them a push, they will start moving together in a very specific way," explains Sander Otte, leader of the team that performed the research. "But according to the laws of quantum mechanics, each spin can be simultaneously point in various directions, forming a superposition. This means that actual transfer of quantum information takes place between the atoms, like some sort of conversation."



Artist's impression of the experiment, where an electric pulse is applied to a titanium atom. As a result, its magnetic moment suddenly flips around. A neighbouring titanium atom (right) reacts to this motion, but can't keep pace with the fast movement. As such, an exchange of magnetic quantum information between the atoms is initiated. Credit: TU Delft/Scixel

Sharp needle

On a large scale, this kind of exchange of information between atoms can lead to fascinating phenomena. A classic example is superconductivity: the effect where some materials lose all electrical resistivity below a critical temperature. While well understood for the simplest cases, nobody knows exactly how this effect comes about in many complex materials. But it's certain that magnetic quantum interactions play a key role. For the purpose of trying to explaining phenomena like this, scientists are very interested in being able to intercept these exchanges; to overhear the conversations between atoms.

In Otte's team they go about this rather directly: they literally put two atoms next to each other to see what happens. This is possible by virtue of a scanning tunneling microscope: a device in which a sharp needle can probe atoms one-by-one and can even rearrange them. The researchers used this device to place two titanium atoms at a distance of just over one nanometer—one millionth of a millimeter—apart. At that distance, the atoms are just able to detect each other's spin. If you would now twist one of the two spins, the conversation would start by itself.

Usually, this twist is performed by sending very precise radio signals to the atoms. This so-called spin resonance technique—which is quite reminiscent of the working principle of an MRI scanner found in hospitals—is used successfully in research on quantum bits. This tool is also

available to the Delft team, but it has a disadvantage. "It is simply too slow," says Ph.D. student Lukas Veldman, lead author on the *Science* publication. "You have barely started twisting the one spin before the other starts to rotate along. This way you can never investigate what happens upon placing the two spins in opposite directions."

Unorthodox approach

So the researchers tried something unorthodox: they rapidly inverted the spin of one of the two atoms with a sudden burst of electric current. To their surprise, this drastic approach resulted in a beautiful quantum interaction, exactly by the book. During the pulse, electrons collide with the atom, causing its spin to rotate. Otte: "But we always assumed that during this process, the delicate quantum information—the so-called coherence—was lost. After all, the electrons are incoherent: the history of each electron prior to the collision is slightly different and this chaos is transferred to the atom's spin, destroying any coherence."

The fact that this now seems not to be true was cause for some debate. Apparently, each random electron, regardless of its past, can initiate a coherent superposition: a specific combination of elementary quantum states which is fully known and which forms the basis for almost any form of quantum technology.

Perfect superposition

"The crux is that it depends on the question you ask," argues Markus Ternes, co-author from the RWTH Aachen University and the Research Center Jülich. "The electron inverts the spin of one atom causing it to point, say, to the left. You could view this as a measurement, erasing all quantum memory. But from the point of view of the combined system comprising both atoms, the resulting situation is not so mundane at all. For the two atoms together, the new state constitutes a perfect superposition, enabling the exchange of information between them. Crucially for this to happen is that both spins become entangled: a peculiar quantum state in which they share more information about each other than classically possible."

The discovery can be of importance to research on quantum bits. Perhaps also in that research you could get away with being slightly less careful when initializing quantum states. But for Otte and his team it is mostly the starting point of even more beautiful experiments. Veldman: "here we used two atoms, but what happens when you use three? Or ten, or a thousand? Nobody can predict that, as computing power falls short for such numbers. Perhaps one day we will be able to listen to quantum conversations that nobody could ever hear before."

More information: "Free coherent evolution of a coupled atomic spin system initialized by electron scattering" *Science* (2021). [science.sciencemag.org/cgi/doi ... 1126/science.abg8223](https://science.sciencemag.org/cgi/doi/10.1126/science.abg8223)

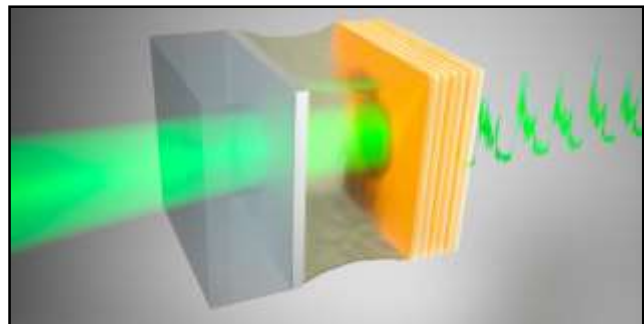
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<https://phys.org/news/2021-05-scientists-atoms-chatting.html>

Scientists unravel noise-assisted signal amplification in systems with memory

Signals can be amplified by an optimum amount of noise, but stochastic resonance is a fragile phenomenon. Researchers at AMOLF were the first to investigate the role of memory for this phenomenon in an oil-filled optical microcavity. The effects of slow non-linearity (i.e. memory) on stochastic resonance were never considered before, but these experiments suggest that stochastic resonance becomes robust to variations in the signal frequency when systems have memory. This has implications in many fields of physics and energy technology. In particular, the scientists numerically show that introducing slow nonlinearity in a mechanical oscillator harvesting energy from noise can increase its efficiency tenfold. They have published their findings in *Physical Review Letters* on May 27th.

It is not easy to concentrate on a difficult task when two people are having a loud discussion right next to you. However, complete silence is often not the best alternative. Whether it is some soft music, remote traffic noise or the hum of people chatting in the distance, for many people, an optimum amount of noise enables them to concentrate better. "This is the human equivalent of stochastic resonance," says AMOLF group leader Said Rodriguez. "In our scientific labs, stochastic resonance happens in nonlinear systems that are bistable. This means that, for a given input, the output can switch between two possible values. When the input is a periodic signal, the response of a non-linear system can be amplified by an optimum amount of noise using the stochastic resonance condition."



Two mirrors with a drop of oil in between form a non-linear optical cavity, in which stochastic resonance was observed. By modulating the position on one of the mirrors, the laser light (approaching from the left) is turned into a signal (right). An optimum amount of noise amplifies this signal when the conditions of stochastic resonance have been met. Credit: Henk-Jan Boluijt (AMOLF)

Ice ages

In the 1980s, stochastic resonance was proposed as an explanation for the recurrence of ice ages. Since then, it has been observed in many natural and technological systems, but this widespread observation poses a puzzle to scientists, Rodriguez says. "Theory suggests that stochastic resonance can only occur at a very specific signal frequency. However, many noise-embracing systems exist in environments where signal frequencies fluctuate. For example, it has been shown that certain fish prey on plankton by detecting a signal they emit, and that an optimum amount of noise enhances the fish's ability to detect that signal through the phenomenon of stochastic resonance. But how can this effect survive fluctuations in the signal frequency occurring in such complex environments?"

Memory effects

Rodriguez and his Ph.D. student Kevin Peters, the first author of the paper, were the first to demonstrate that memory effects must be taken into account to solve this puzzle. "The theory of stochastic resonance assumes that nonlinear systems respond instantaneously to an input signal. However, in reality, most systems respond to their environment with a certain delay and their response depends on all that happened before," he says. Such memory effects are difficult to describe theoretically and to control experimentally, but the Interacting Photons group at AMOLF has now managed both.

Rodriguez says, "We have added a controlled amount of noise to a beam of laser light and have shined it on a tiny cavity filled with oil, which is a non-linear system. The light causes the temperature of the oil to rise, and its optical properties to change, but not immediately. It takes about 10 microseconds; thus, the system is non-instantaneous, as well. In our experiments, we have shown for the first time that stochastic resonance can occur over a broad range of signal frequencies when memory effects are present."

Energy harvesting

Having thus shown that the widespread occurrence of stochastic resonance may be due to yet unnoticed memory dynamics, the researchers hope that their results will inspire colleagues in several other fields of science to search for memory effects in their own systems. To extend the impact of their findings, Rodriguez and his team have theoretically investigated the effects of non-instantaneous response on mechanical systems for energy harvesting. "Small piezo-electric devices that harvest energy from vibrations are useful when battery replacement is difficult, for example in pacemakers or other biomedical devices," he explains. "We have found a tenfold increase in the amount of energy that could be harvested from environmental vibrations, if memory effects would have been incorporated."

The obvious next step for the group is to expand their system with several connected oil-filled cavities and investigate collective behavior emerging from noise. Rodriguez does not fear stepping outside his scientific comfort zone. He says: "It would be great if we could team up with researchers that have expertise in mechanical oscillators. If we can implement our memory effects in those systems, the impact on energy technology will be enormous."

More information: K. J. H. Peters, Z. Geng, K. Malmir, J. M. Smith and S. R. K. Rodriguez, Extremely Broadband Stochastic Resonance of Light and Enhanced Energy Harvesting Enabled by Memory Effects in the Nonlinear Response, *Physical Review Letters*, 126, 213901 (2021). [dx.doi.org/10.1103/PhysRevLett.126.213901](https://doi.org/10.1103/PhysRevLett.126.213901)

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IIT Mandi researchers reveal structure of key protein in COVID-19 virus

According to the team, current COVID-19 treatments simply manage symptoms while the body fights off the infection with its immune defence system

New Delhi: Researchers at the Indian Institute of Technology, Mandi (IIT Mandi) in Himachal Pradesh have revealed the part of structure of a key protein in COVID-19 virus, which helps in understanding its mode of action, its role in the spread and severity of the disease and development of antiviral therapeutics.

The findings have been published in the journal, 'Current Research in Virological Science'.

According to the team, current COVID-19 treatments simply manage symptoms while the body fights off the infection with its immune defence system.

There are, as yet, no confirmed antiviral drugs that can stop the virus from replicating.

"One route to neutralising any virus is to attack its proteins. Such an approach holds true for the COVID-19 virus as well, and scientists across the globe are involved in studies to elucidate the structure and functions of these proteins to understand the viral disease and develop drugs that are effective against the virus," said Rajanish Giri, Assistant Professor of Biotechnology, IIT Mandi.

This virus has 16 non-structural proteins (NSP1-NSP16), of which the NSP1 plays a vital role in the pathogenicity (ability to cause disease) of the virus.

"The NSP1 disrupts the proteins of the host cell and suppresses its immune functions. Its importance can be understood by the fact that it is also called the 'host shutoff factor'. Earlier in 2020, we have shown through bioinformatics studies that NSP1 C-terminal region has intrinsic disorder propensity between 0.4 to 0.5 scales -- very close to borderline of intrinsic disorder prediction."

"However, without experimental studies we were not sure that this 131-180 amino acid region is actually an intrinsically disordered protein region. Generally, these regions are unfolded in solution but are folded into particular conformations when binding with specific molecules or partners inside the host cells," said Giri, explaining the recent developments to his previous research.

The IIT Mandi team has experimentally studied the structural conformations of SARS-CoV-2 NSP1 under various conditions -- in an organic solvent, membrane mimetic environment and inside liposomes. Using analytical techniques such as circular dichroism spectroscopy, fluorescence spectroscopy, and molecular dynamics simulations, the researchers have shown the dynamic changes in the conformation of the IDR of the NSP1, in response to its surroundings, due to hydrophobic and electrostatic interactions between the protein and the environment.

"Our finding provides valuable insight into disorder-order conformation of the NSP1 C-terminal region (residues 131-180) of the SARS-COV2 virus under various environments, which will help in understanding the broader aspect of NSP1 and its interactions with binding partners that are currently unknown," Giri said.

The other members of the team include IIT Mandi research scholars Amit Kumar, Ankur Kumar and Prateek Kumar, along with Neha Garg from the Banaras Hindu University.

<https://www.newindianexpress.com/nation/2021/may/27/iit-mandi-researchers-reveal-structure-of-key-protein-in-covid-19-virus-2308349.html>

