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THE ECONOMIC TIMES

Thu, 06 May 2021

India, UK to step up defence cooperation, fighter jet engine and LCA on agenda

By Manu Pubby & Dipanjan Roy Chaudhury

Synopsis

PM Modi & Johnson at their summit have also agreed on new cooperation on Maritime Domain Awareness, which includes new agreements on maritime information sharing, an invitation to the UK to join India's Information Fusion Centre in Gurgaon and an ambitious exercise programme which includes joint tri-lateral exercises, according to officials.

India and the UK have decided to scale up bilateral defence cooperation with a multipronged approach that includes an increase in military exercises, collaboration on the indigenous Light Combat Aircraft and significantly, plans to work on the future fighter jet engine requirement of the air force.

The 2030 document also envisages establishing a portfolio of UK-India collaborative projects to support the development of new technologies and capabilities,

PM Modi & Johnson at their summit have also agreed on new cooperation on Maritime Domain Awareness, which includes new agreements on maritime information sharing, an invitation to the UK to join India's Information Fusion Centre in Gurgaon and an ambitious exercise programme which includes joint tri-lateral exercises, according to officials.

The two countries are also working to conclude a Logistics Memorandum of Understanding that will enhance joint ability to tackle shared challenges, it has been learnt. In addition to commitments on the Indo-Pacific, the two PMs agreed to build on existing government-to-government collaboration on India's future combat air engine requirement. As part of a '2030 Roadmap', the leaders agreed to work closely together in support of India's indigenous development of the Light Combat Aircraft Mark 2, officials said The combat air engine requirement is among the top priorities for India that is seeking to go independent for future requirements of fighters.

The mission to develop a new engine for the future Advanced Multi Role Combat Aircraft has been accorded special priority by the PMO that ha been overseeing the project. Both France and the UK have promised technology and studies are currently underway to ascertain which partnership can prove to be more beneficial for the program.

The India-UK 2030 roadmap announced at the Summit envisages expanding cooperation under the Defence and International Security Partnership (DISP) agreed in 2015 It aims to promote freedom of navigation and open access, and improve maritime cooperation through a partnership in the Western Indian Ocean, with a new Maritime Dialogue, Grey and Dark Shipping information sharing and mechanisms for operational co-ordination all in place.

The document also envisages conducting Joint Service exercises and demonstrate greater complexity in military exchanges. Under the Defence Consultative Group, the two sides will embark on a new, ambitious Strategic Collaborative Partnership on research, innovation, technology and industry to develop transformational defence and security capabilities to tackle common threats and the operational challenges of the future, building on the current collaboration under the UK-India Defence Technology and Industrial Capability Cooperation (DTICC) MoU.

The 2030 document also envisages establishing a portfolio of UK-India collaborative projects to support the development of new technologies and capabilities, including government-to-government and business-to business arrangements and projects. UK Minister for Defence Procurement, Jeremy Quin has said: "The UK and India enjoy a strong defence and security relationship. We remain committed to close collaboration with India as we both adapt to meet future threats and look to innovate our defence equipment programmes and systems." Expressing similar sentiments British High Commissioner to India, Alex Ellis, said: "The UK and India are natural partners in defence and security.

Today's announcements underline our shared ambition for that partnership, enhancing cooperation, building joint expertise and accelerating industrial cooperation, building up to the arrival of our new aircraft carrier and its accompanying ships to India this autumn." Tuesday's announcements follow the news that the UK's Carrier Strike Group 2021, led by HMS Queen Elizabeth, will sail to India in the autumn on its maiden operational deployment. The UK Integrated Review - a landmark review of foreign, defence, development and security policy, announced in March- committed the UK to becoming the European country with the broadest, most integrated presence in the Indo-Pacific in support of trade, shared security and values, according to a UK government statement.

https://economictimes.indiatimes.com/news/defence/india-uk-to-step-up-defence-cooperation-fighter-jet-engine-and-lca-on-agenda/articleshow/82413207.cms

COVID 19: DRDO's Contribution

INDIA TODAY

Thu, 06 May 2021

DRDO installs 2 oxygen plants in Delhi, each can generate 1,000 litre O2 every min

The DRDO has installed two oxygen plants in Delhi and will be installing three more by the end of this week. Each plant can generate 1,000 litre of oxygen every minute

By Aishwarya Paliwal

New Delhi: A plant generating 1,000 litres of oxygen every minute, this is the feat that the Defence Research and Development Organisation (DRDO) has achieved with its newly installed oxygen plant at AIIMS, New Delhi.

The DRDO will be installing five such plants in Delhi to help hospitals meet their demands for medical oxygen.

By the end of this week, Delhi is likely to have five such oxygen plants.

For the last three weeks, oxygen has arguably been the most sought-after commodity in Delhi. With Covid-19 cases exploding in the city, hospitals have run out beds and medical oxygen to treat patients.

Several patients have died gasping for breath and hospitals have had to run to courts to request emergency supply of medical oxygen. The supply comes, but often it is too little and too late.

The situation is such that the Delhi government has requested the Centre to deploy the Indian Army to handle the situation.

However, the armed forces have already started helping the civil administration in Covid management by setting up dedicated hospitals in the city.

The oxygen plant installed by the DRDO at AIIMS New Delhi.

On its part, the DRDO is setting up oxygen plants at hospitals across the country to make them self-reliant for medical oxygen. The target is to install 500 plants in the next three months.

The oxygen plants installed at AIIMS and Safdarjung Hospital in New Delhi will produce 1,000 litres of oxygen every minute and support 195 patients every day. This plant can refill 195 cylinders can be filled 150 times per day.

The medical oxygen plant works on a technology that is based on the on-board oxygen generation for light combat Tejas aircraft developed by DRDO.

Speaking to India Today TV, Devender Sharma, a Scientist at DRDO, said, "The idea is to reduce dependence of hospital on oxygen suppliers. With the help of these plants, hospitals can now make their own oxygen. The plant uses air from the atmosphere and converts it into oxygen 24x7. This will help in reducing the burden on hospitals and save lives."

Dr G Satheesh Reddy, Chairman, DRDO said Prime Minister Narendra Modi has set the target of installing 500 plants across the country, and DRDO "firmly believes" in achieving it.

"We are confident that we will be able to install 500 such plants in hospitals across the country in the next three months," he said.

Dr Reddy explained that once hospitals get these plants up and running, they will be able to treat Covid-19 patients much better. "We are innovating technology to help as many patients as possible. At the end of the day, all this is being done for the citizens."

On Tuesday, the defence ministry said the oxygen plants will be installed at AIIMS Trauma Centre, Dr Ram Manohar Lohia Hospital (RML), Safdarjung Hospital, Lady Hardinge Medical College and one at AIIMS, Jhajjar, Haryana.

On April 28, the DRDO had announced that it will set up 500 medical oxygen plants within the next three months from the allocation made by the PM-Cares Fund. The DRDO said it had transferred its medical oxygen plant (MOP) technology -- developed for on-board oxygen generation in Tejas fighter jet -- to Trident as well as Bengaluru-based Tata Advanced Systems Limited so that these two companies can set up a total 380 out of 500 plants.

Trident and Tata will install 48 and 332 plants, respectively, it had said.

Remaining 120 plants will be set up by industries working with the Indian Institute of Petroleum, Dehradun.

https://www.indiatoday.in/coronavirus-outbreak/story/drdo-installs-oxygen-plants-aiims-safdarjung-hospital-delhi-1799290-2021-05-05

Thu, 06 May 2021

AIIMS और RML अस्पताल में DRDO ने लगाया प्लांट, कल से शुरू होगा ऑक्सीजन का उत्पादन

डीआरडीओ ने एम्स और आरएमएल अस्पताल में प्लांट लगाया है जहां कल से ऑक्सीजन का उत्पादन होगा

देश में चिकित्सकीय ऑक्सीजन की कमी के चलते कई अस्पतालों ने खुद इसका उत्पादन करने का निर्णय लिया है। इसी के तहत राजधानी दिल्ली के एम्स (AIIMS) और आरएमएल (RML) अस्पताल में मेडिकल ऑक्सीजन प्लांट लगने का काम तेजी से शुरू है जहां कल यानी 6 मई से दोनों प्लांट में ऑक्सीजन का उत्पादन शुरू जायेगा।

डीआरडीओ ने ये प्लांट लगाया है। डीआरडीओ ने इस प्लांट को कोयम्बटूर की ट्राईटेंड नाम की कंपनी के साथ मिलकर लगाया है। इस पूरे प्लांट पीएम-केयर फंड से पैसा दिया जा रहा है।

एबीपी न्यूज की खबर के अनुसार एलसीए तेजस की तकनीक पर आधारित इन ऑक्सीजन प्लांट्स से ऑक्सीजन की सप्लाई सीधे मरीजों को की जाएगी। डीआरडीओ के एडिशनल डायरेक्टर, देवेंद्र शर्मा के मुताबिक ये प्लांट 24x7 काम करता है क्योंकि ये प्लांट वायुमंडल में मौजूद वायु से ऑक्सीजन का उत्पादन करते हैं।

ये प्लांट एक मिनट में एक हजार लीटर ऑक्सीजन का प्रोडक्शन करता है। इससे एक दिन में करीब 190 मरीजों को 5 लीटर ऑक्सीजन दिया जा सकता है। डीआरडीओ के मुताबिक इससे एक दिन में 195 सिलिडर्स को रिफिल किया जा सकता है। इन प्लांट्स में प्रेशर स्विंग एडसोर्पशन तकनीक और मोल्कयूलर सीइव (जियोलाइट) टेक्नोलॉजी का उपयोग करके हवा से ही ऑक्सीजन बनाई जाती है।

डीआरडीओ के चेयरमैन के अनुसार एलसीए तेजस लड़ाकू विमान के लिए डीआरडीओ ने मेडिकल ऑक्सीजन प्लांट टेक्नोलॉजी की खोज की थी। जिसमें आसमान में उड़ान भरते वक्त पायलट को ऑक्सीजन उपलब्ध कराई जाती है। डीआरडीओ ने लेह और उत्तर-पूर्व के राज्यों में इसी तकनीक के आधार पर तैयार किए गए प्लांट्स को स्थापित किया है।

देश में कोविड महामारी के दौरान ऑक्सीजन की किल्लत के कारण डीआरडीओ इस तकनीक को प्राइवेट इंडस्ट्री और सीआईएसआर को सौंप रही हैं जो कि इसके पहले केवल सैन्य मामलों में उपयोग की जाती थी।

https://hindi.moneycontrol.com/news/country/drdo-set-up-plant-at-aiims-and-rml-hospital-production-of-oxygen-will-start-tomorrow_264587.html

INDIA TV

Thu, 06 May 2021

COVID-dedicated DRDO hospital with 500 beds opens in Lucknow

DRDO director Narendra Kumar Arya said, "The makeshift hospital at Awadh Shilpgram in Lucknow will be operational from Wednesday noon. The hospital has the capacity of 500 beds, including 150 ICU and 350 general beds which are also equipped with oxygen."

New Delhi: The crisis of hospital facilities in Lucknow will ease to an extent on Wednesday when the 500-bed makeshift Covid hospital set up by the Defence Research and Development Organisation (DRDO) at Awadh Shilpgram on Shaheed Path becomes operational. The hospital will start functioning almost a fortnight after DRDO stepped in to set up the facility at the instance of Lucknow MP and Defence Minister Rajnath Singh. With the addition of 500 beds, the city will now have 7,000 beds for Covid patients, though most of them are occupied.

DRDO director Narendra Kumar Arya said, "The makeshift hospital at Awadh Shilpgram in Lucknow will be operational from Wednesday noon. The hospital has the capacity of 500 beds, including 150 ICU and 350 general beds which are also equipped with oxygen."

COVID-dedicated DRDO hospital with 500 beds opens in Lucknow. Image Source : PTI/REPRESENTATIVE

He said that the patients will be admitted through the Integrated Covid Command Centre (ICCC).

"We have given the DRDO hospital a login and a password for the ICCC portal where they will upload the status of bed availability. People will be able to view bed occupancy but admission requests will be centrally controlled," said Lucknow's Covid in charge, Roshan Jacob.

District magistrate Abhishek Prakash visited the facility on Tuesday and said the hospital would have an unlimited 24-hour oxygen supply. He said there would be a separate electricity feeder for the hospital and special sanitization and cleanliness facilities would be provided to the hospital.

The DRDO has already set up similar hospitals in Delhi and Ahmedabad in April this year.

While DRDO will not formally inaugurate the facility given the crisis situation, sources said chief minister Yogi Adityanath will visit the facility on Wednesday.

"Patients will not be charged for treatment at the hospital. Arrangements for the stay of patients' relatives will also be made in the premises. Medicines and food will be free," said the DRDO director.

While the hospital has been set up with the expertise and supervision of DRDO, the medical aspect of the facility will be taken care of by the doctors, nurses and support staff of the Armed Forces Medical Services.

It has an oxygen plant on base and central air-conditioning as per WHO protocols of air circulation for Covid patients.

https://www.indiatvnews.com/news/india/lucknow-drdo-hospital-covid19-coronavirus-hospitals-details-702603

THE TIMES OF INDIA

Thu, 06 May 2021

CM opens DRDO Covid hospital, says putting things on track

Lucknow: The temporary Covid-19 hospital with 250 beds set up by DRDO at Awadh Shilpgram on Shaheed Path became functional on Wednesday.Chief Minister Yogi Adityanath, who inaugurated the facility named after former PM Atal Bihari Vajpayee, said that 150 beds are equipped with ventilators, while the remaining 100 had oxygen facility.

The makeshift Covid facility will be gradually expanded into a 500-bed hospital.

"During a pandemic, infrastructure and facilities may feel inadequate, but we are trying our best to ensure that things are brought back on track," the CM said. The CM said: "During a pandemic, infrastructure and facilities may feel inadequate, but we are trying our best to ensure that things are brought back on track."

Chief Minister Yogi Adityanath aid that 150 beds are equipped with ventilators, while the remaining 100 had oxygen facility. (File Photo)

He added that an officer has been appointed to interact with patients' families at least once a day. The hospital will have 24-hour oxygen backup and if there is any technical glitch, oxygen will be given through concentrators.

The hospital was set up at the behest of Lucknow MP and defence minister Rajnath Singh. A spokesperson for DRDO said that it is equipped with a 20 KL oxygen tank, a dedicated power backup and bio-medical and other waste management system. The facility and treatment, including food for patients, will be free.

"The hospital is being run by a team from the armed forces comprising doctors of many specialities along with nurses and paramedic staff. The medical staff has been flown in from all across the country. Intensive training, quality checks of installed equipment and Covid procedures and protocols have been completed prior to commissioning of the hospital," the spokesperson said.

Admission to the hospital will be done through the Integrated Control Centre at Lucknow as there is no walk-in facility for patients. Information on admitted patients will be available at mobile numbers 9519109239 and 9519109240.

Rajnath thanks CM for help in hosp: Diwakar Tripathi, representative of defence minister and Lucknow MP Rajnath Singh, on Wednesday hailed the DRDO and the state government for having setup the makeshift hospital in a fortnight's time. Tripathi in a press statement said Rajnath Singh had thanked chief minister Yogi Aditynath for extending all help and support in establishing the 500- bed hospital at Awadh Shilpgram. "The defence minister also hopes that with the hospital now functional, critical patients of Covid-19 will get adequate medical help and best treatment possible," Tripathi read.

https://timesofindia.indiatimes.com/city/lucknow/cm-opens-drdo-covid-hospital-says-putting-things-on-track/articleshow/82418665.cms

जागरण

Thu, 06 May 2021

लखनऊ में DRDO का अस्थाई कोविड अस्पताल शुरू, CM योगी आदित्यनाथ ने किया लोकार्पण

उत्तर प्रदेश की राजधानी लखनऊ में 505 बेड के डीआरडीओ का अवध शिल्प ग्राम में अटल विहारी वाजपेयी कोविड अस्पताल तैयार हो गया है। बुधवार को मुख्यमंत्री योगी आदित्यनाथ ने इस अस्पताल का शुभारंभ किया। इस अस्पताल के शुरू होने से कोरोना मरीजों को राहत की उम्मीद है।

By Umesh Tiwari

लखनऊ: उत्तर प्रदेश की राजधानी लखनऊ में 505 बेड के डीआरडीओ का अवध शिल्प ग्राम में अटल विहारी वाजपेयी कोविड अस्पताल तैयार हो गया है। बुधवार को मुख्यमंत्री योगी आदित्यनाथ ने इस अस्पताल का शुभारंभ किया। लखनऊ में कोरोना से संक्रमित लोगों के लिए डीआरडीओ ने इस अस्थाई हॉस्पिटल को बनाया है। इस अवसर पर सीएम योगी ने कहा कि प्रदेश में कोरोना को लेकर कुछ जगह कम संसाधन की बात सामने आ रही है। सरकार लगातार कोरोना से निपटने के लिए अपनी क्षमता को बढ़ा रही गई। रक्षा मंत्री राजनाथ सिंह के सहयोग से लखनऊ में डीआरडीओ का यह अस्पताल लखनऊ और प्रदेश वासियों को राहत देगा।

मुख्यमंत्री योगी आदित्यनाथ ने बुधवार को अवध शिल्प ग्राम में डीआरडीओ के तैयार अटल विहारी वाजपेयी कोविड अस्पताल के लोकार्पण अवसर पर कहा कि राज्य सरकार ने आज से गावों में विशेष अभियान की शुरुआत की है। पंचायत चुनाव खत्म हो गया है। गावों में कोरोना न बढ़े इसके लिए हर ग्राम पंचायत में निगरानी समिति बनाई गई है। सभी को थर्मामीटर, ऑक्सिमिटर और जरूरी उपकरण दिए गए हैं। लक्षण आते एंटीजन टेस्ट समिति कराएगी। जरूरत पड़ने पर आरटीपीसीआर और कम्युनिटी सेंटर बनाने व होम आइसोलेशन वाले मरीजो को मेडिकल किट दी जाएगी।

मुख्यमंत्री योगी आदित्यनाथ ने कहा कि इस अस्पताल को 250 बेड के साथ शुरू किया जा रहा है, जिनमें 150 आइसीयू और 100 बेड आइसोलेशन वार्ड के होंगे। अगले तीन दिनों में यहां मौजूदा सभी बेड का इस्तेमाल शुरू हो जाएगा। केंद्र और राज्य सरकार के साथ बना यह अस्पताल लोगों के उपचार में काफी सफल होगा। नैना ने अपना मैन पावर लगाया है, जबकि डीआरडीओ ने आधारभूत ढांचा खड़ा किया है। स्थानीय प्रशासन यहां हाउस कीपिंग स्टाफ के लिए सहयोग करेगा।

मुख्यमंत्री योगी आदित्यनाथ ने कहा कि डीआरडीओ अस्पताल मरीजों के लिए समर्पित होगा। इस अस्पताल में मरीजों ले साथ उनके तीमारदारों की भी व्यवस्था होगी। समय समय पर दिन में एक बार भर्ती मरीज की जानकारी तीमारदार को दी जाएगी। सात दिन के बाद उनकी कोरोना जांच की भी व्यवस्था की गई है। सरकार ने तीन दिन पहले ट्रायल के लिए यहां ऑक्सीजन उपलब्ध कराया था। यहां 24 घंटे ऑक्सीजन का बैकअप रहे इसके लिए राज्य सरकार यहां ऑक्सीजन की आपूर्ति बनाए रखेगी। डीआरडीओ यहां ऑक्सीजन कन्संट्रेटर की सुविधा उपलब्ध करायेगा।

मुख्यमंत्री योगी आदित्यनाथ ने कहा कि डीआरडीओ अस्पताल में फायर सेफ्टी के समुचित प्रबंध के साथ विधुत की आपूर्ति निर्बाध होगी। जिस विश्वास के साथ रक्षा मंत्रालय ने प्रदेश वासियों के लिए यह अस्पताल उपलब्ध कराया है। इसे आगे बढ़ाया जाएगा। इस अस्पताल में सभी व्यवस्थाएं बनी रहे इसकी जिम्मेदारी जिलाधिकारी की होगी। कोई भी आवश्कयता राज्य सरकार खड़ी गई। साथ ही यहां एक मजिस्ट्रेट भी हर समय उपलब्ध रहेगा।

मुख्यमंत्री योगी आदित्यनाथ ने कहा कि प्रदेश में अप्रैल से 3.09 लाख तक सक्रिय केस पहुंच गए थे, जो अब 2.62 लाख तक आ गया है। कोरोना वारियर्स, समाजसेवी संगठन मिलकर काम करेंगे, अच्छे परिणाम आएंगे। केंद्र सरकार कई और प्लांट से ऑक्सीजन उपलब्ध करा रही है। कल तक प्रदेश को 783 मीट्रिक टन आपूर्ति हुई है। वायुसेना और रेलवे के माध्यम से हम ऑक्सीजन ला रहे है। ऑक्सीजन की आपूर्ति के साथ कि वह व्यर्थ न हो। सरकार ने ऑक्सीजन ऑडिट की व्यवस्था बनाई है। आइआइटी कानपुर, आइआइएम लखनऊ सहित सात संस्था अलग अलग जिलों में ऑडिट कर रही हैं। वहां कितने बेड है मौजूदा संसाधन की उपलब्धता का ऑडिट हो रहा है। सबको धैर्य व संवेदना साथ लगना पड़ेगा।

डीआरडीओ अस्पताल एक नजर में...

- 505 बेड का यह अस्पताल
- 85 बेड आइसीयू एक में
- 65 बेड आइसीयू दो
- 143 बेड जनरल आक्सीजन वार्ड एक में
- 212 बेड आक्सीजन साथ जर्मन एसी हैंगर
- 120 सेना के तीनों अंगों के डाक्टर
- 180 एमएनएस अधिकारी और पैरामेडिकल स्टाफ
- 17 अप्रैल को लखनऊ आई थी डीआरडीओ की टीम
- 100 विशेषज्ञों की टीम ने तैयार किया अस्पताल
- 30 अप्रैल को मरीजों के लिए शुरू करने का था लक्ष्य
- 40 हजार लीटर के हैं यहां दो आक्सीजन टैंक

https://www.jagran.com/uttar-pradesh/lucknow-city-cm-yogi-adityanath-inaugurates-505-bed-drdo-covid-hospital-in-lucknow-up-21617008.html

नवभारत टाइम्स

Thu, 06 May 2021

लखनऊ में बने डीआरडीओ अस्पताल में सीधे नहीं भर्ती होंगे कोरोना मरीज, ये है प्रोसेस

लखनऊ में डीआरडीओ के बनाए गए अस्थाई कोविड अस्पताल में मरीजों को सीधे भर्ती नहीं किया जाएगा। यहां पर भर्ती होने के लिए कोरोना मरीजों को पहले लखनऊ के इंटीग्रेटेड कमांड सेंटर से रेफरल लेना होगा।

By Shreyansh Tripathi

लखनऊ: उत्तर प्रदेश की राजधानी लखनऊ में स्थानीय सांसद राजनाथ सिंह की पहल पर बना डीआरडीओ का कोविड अस्पताल शुरू करा दिया गया है। बुधवार को इस अस्पताल का उद्घाटन कराया गया, जिसके बाद अब इसमें मरीजों को भर्ती करने का काम शुरू कर दिया गया है।

अवध शिल्प ग्राम में डीआरडीओ के अस्थायी कोविड कोविड अस्पताल में संक्रमितों को सीधे भर्ती नहीं किया जाएगा। इंटीग्रेटेड कोविड कंट्रोल रूम (0522-4523000) से बेड अलॉट होने पर भी यहां मरीजों को भर्ती किया जाएगा। इसके साथ यहां हेल्प डेस्क भी बनाई गई है। कोविड अस्पताल में भर्ती संक्रमितों के परिवारीजन इन नंबरों पर कॉल कर उनके सेहत की अपडेट ले सकेंगे।

अवध शिल्प ग्राम में बना है अस्पताल

सशस्त्र बलों की टीम करेगी संचालन

रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) ने अवध शिल्प ग्राम में रेकॉर्ड समय में कोविड हॉस्पिटल तैयार किया है। सेना के मध्य कमान के प्रवक्ता द्वारिका ने बताया कि अस्पताल में 20 किलो लीटर ऑक्सिजन टैंक की सुविधा है। अस्पताल का संचालन सशस्त्र बलों की एक टीम करेगी, जिसमें नर्स और अर्द्धसैनिक कर्मचारियों के साथ कई विशिष्ट डॉक्टर भी शामिल हैं।

https://navbharattimes.indiatimes.com/metro/lucknow/administration/drdo-hospital-wont-admit-covid-patients-by-their-own-in-lucknow/articleshow/82423762.cms

जागरण

Thu, 06 May 2021

BHU में DRDO के 750 बेड के अस्थाई कोविड अस्पताल के लिए डाक्टर-स्टाफ की भर्ती प्रक्रिया शुरू

बीएचयू में डीआरडीओ की ओर से बनाए जा रहे अस्थायी कोविड अस्पताल में चिकित्सा के लिए डाक्टर पैरामेडिकल स्टाफ व टेक्नीशियन की भारी-भरकम फौज होगी। इसकी व्यवस्था सैनिक अस्पतालों से तो होगी ही स्थानीय स्तर पर भी इनकी तैनाती की प्रक्रिया शुरू कर दी गई है।

By Abhishek Sharma

वाराणसी: बीएचयू में डीआरडीओ की ओर से बनाए जा रहे अस्थायी कोविड अस्पताल में चिकित्सा के लिए डाक्टर, पैरामेडिकल स्टाफ व टेक्नीशियन की भारी-भरकम फौज होगी। इसकी व्यवस्था सैनिक अस्पतालों से तो होगी ही स्थानीय स्तर पर भी इनकी तैनाती की प्रक्रिया शुरू कर दी गई है। इसके लिए बुधवार को सीएमओ दफ्तर में 100 डाक्टर, 350 नर्स व 62 टेक्नीशियन के लिए साक्षात्कार लिया गया। टेक्नीशियन में आठ लैब, 24 ईसीजी व 30 एक्सरे के लिए होंगी।

वहीं बीएचयू के इस अस्थाई अस्पताल में बुधवार को अधिकारियों ने जायजा लिया। जागरण को बताया कि तैयारी लगभग पूरी है। अधिकारियों का कहना है कि बहुत जल्द प्रथम चरण में 250 आईसीयू के बेड पर काम शुरू हो जाएगा। इसके बाद मरीजों को भर्ती करने का क्रम शुरू हो जाएगा।

इसके अलावा सीटी स्केन समेत उच्च स्तरीय जांच के लिए तीन डायग्नोस्टिक केंद्रों व दो पैथालाजी केंद्रों से अनुबंध की बात हो चुकी है। इन केंद्रों ने शासकीय दर पर जांच की सहमति जताई है। एसीएमओ डा. संजय राय ने बताया कि लंका स्थित प्रकाश डायग्नोस्टिक व नोवल स्टार और भेलूपुर के सुविधा डायग्नोस्टिक केंद्र के साथ ही लंका स्थित प्रकाश पैथालाजी व पारुल पैथलैब हर स्तर पर मदद को तैयार हैंं। अन्य सेंटरों से भी बात की जा रही है। तैयारियों पर डीआरडीओ मुख्यालय नजर रखे है। इस संबंध में स्थानीय अफसरों के साथ सोमवार को बैठक कर तेजी का खाका खींचा गया।

लग गए बेड, कस गईं मशीनें

अस्थायी कोविड अस्पताल के लिए दिल्ली से आए बेड व वेंटिलेटर मंगलवार को लगा दिए गए। इस 750 बेड के हास्पिटल में 500 बेड पर आक्सीजन सुविधा वाले तो 250 वेंटिलेटर युक्त होंगे। जिलाधिकारी कौशल राज शर्मा ने बताया कि अस्पताल छह-सात मई से काम करने लगेगा।

https://www.jagran.com/uttar-pradesh/varanasi-city-staff-for-750-bed-hospital-in-bhu-by-drdo-21617229.html

THE TIMES OF INDIA

Thu, 06 May 2021

'NHAI & DRDO installing plants in Hry hospitals'

By JK Singh

Ambala: After Karnal and Panipat, oxygen plant at Ambala civil hospital is set to become operational. Haryana health minister Anil Vij on Wednesday afternoon inspected installation of the plant and asked it to be made operational by the night.

Vij said that the state government was working to make the government hospitals 'atma nirbhar' (self-reliant) so that "we do not need to procure oxygen from anywhere". "Initially, six oxygen plants were approved for Haryana, of which, ones at Karnal and Panipat have become operational. The one at civil hospital, Ambala City would also start supplying oxygen from today. The plants at Panchkula, Faridabad and Hisar would also be made operational in two-three days," claimed Vij.

An oxygen plant is set to become operational at Ambala civil hospital

"The central government has approved 60 more oxygen plants for Haryana, which would be installed at 30-, 50-, 100- and 200-bedded government hospitals in the state. For the same, the responsibility of completing the civil work within seven days has been given to NHAI. DRDO has been given the task of oxygen plant installation. All the concerned agencies have been instructed to start the work without any delay. Every government hospital in Haryana would be made 'atamnirbhar' with regards to oxygen," the minister said.

About the private hospitals, Vij said, "After making changes in the rules, the private hospitals have been asked to install oxygen production plants according to their requirements. This work should be done at the earliest. Some hospitals are large, they will work to set up plants as per their scheduled time so that people do not have to face lack of oxygen in any area. If a private hospital will not set up an oxygen plant, strict action will be taken."

"Although we are airlifting the oxygen, but there is a problem in getting the tankers to bring the oxygen from Odisha. Due to shortage of tankers, we are facing a problem in lifting the entire quota. We have held meetings with concerned officials and it has been decided that oxygen tankers should be imported from wherever possible so that a chain can be made to lift the oxygen quota from Odisha," he explained.

Meanwhile, Ambala civil surgeon Dr Kuldeep Singh said, "For storing liquid oxygen, two tankers of 1,000-litre capacity would be installed at civil hospitals of Ambala City and Ambala Cantonment and the work for the same is on."

https://timesofindia.indiatimes.com/city/chandigarh/nhai-drdo-installing-plants-in-hry-hospitals/articleshow/82421086.cms

जागरण

Thu, 06 May 2021

रक्षा मंत्रालय 10 दिन में बनाएगा आक्सीजन प्लांट

केंद्र सरकार की ओर से मंडी क्षेत्रीय अस्पताल को मिला आक्सीजन प्लांट

मंडी: केंद्र सरकार की ओर से मंडी क्षेत्रीय अस्पताल को मिला आक्सीजन प्लांट 1000 लीटर की क्षमता का होगा। रक्षा मंत्रालय का डीआरडीओ (रक्षा अनुसंधान एवं विकास संगठन) और एनएचएआइ (भारतीय राष्ट्रीय राजमार्ग प्राधिकरण) इसका निर्माण 10 दिन में करेंगे। बुधवार को इसके लिए जगह भी चयनित कर ली गई है।

कोरोना संक्रमण के लगातार बढ़ रहे मामलों के चलते मंडी क्षेत्रीय अस्पताल को मिले इस आक्सीजन प्लांट के निर्माण में दो करोड़ रुपये खर्च होंगे। इसके निर्माण के तहत एनएचएआइ प्लांट के लिए ढांचा तैयार करेगा जबकि डीआरडीओ मशीनरी लगाएगा। इसमें एक हजार लीटर प्रति मिनट की दर से आक्सीजन तैयार होगी। इसके स्थापित होने के बाद मातृ-शिशु अस्पताल मंडी 100 व क्षेत्रीय अस्पताल के 90 बिस्तर को आक्सीजन सप्लाई से जोड़ा जाएगा। बुधवार को एनएचएआइ के प्रोजेक्ट डायरेक्टर नवीन मिश्रा और जोनल हास्पिटल के एमएस डा. डीएस वर्मा के साथ सीएमओ मंडी डा. देवेंद्र शर्मा ने संयुक्त रूप से मातृ-शिशु अस्पताल (एमसीएच) के पास जगह का चयन किया है। इसे बनाने के बाद डीआरडीओ इसे अस्पताल प्रबंधन के हवाले कर देगा। इसके चलाने के लिए कर्मचारियों को प्रशिक्षण भी दिया जाएगा। जिला मंडी में बनने वाला यह दूसरा आक्सीजन प्लांट है। इससे पहले 500 लीटर प्रति मिनट की दर से आक्सीजन उत्पादन करने वाला प्लांट पीएम केयर्स फंड से नेरचौक मेडिकल कॉलेज में स्थापित किया जा चुका है।

केंद्र से मंडी क्षेत्रीय अस्पताल को मिला आक्सीजन प्लांट 1000 लीटर की क्षमता का होगा। इसे 10 दिन में डीआरडीओ व एनएचएआइ तैयार करके अस्पताल के हवाले करेंगे। इससे आक्सीजन की समस्या काफी हद तक हल होगी। -डा. देवेंद्र शर्मा, सीएमओ मंडी।

https://www.jagran.com/himachal-pradesh/mandi-drdo-and-nhai-will-buid-oxygen-plant-in-zonal-hospital-mandi-21619009.html

ANI
South Asia's Leading Multimedia News Agency

Thu, 06 May 2021

DRDO starts construction of 500-bed COVID-19 hospital in J-K's Budgam

Budgam: Amid the shortage of ICU beds due to the rise in coronavirus infections in Kashmir valley, the Defence Research and Development Organisation (DRDO) has started construction of a 500-bed COVID-19 hospital in Budgam district to ramp up medical infrastructure.

DRDO starts construction of 500-bed COVID-19 hospital in J-K's Budgam (Photo/ANI)

For this joint initiative, the union territory administration handed over a land, which was already identified for a hospital, to the DRDO for construction of a temporary COVID-19 hospital.

This hospital will have 500 oxygen beds and is likely to be completed in about 35 days time, Ravinder Kumar, Additional Chief Engineer, DRDO said.

"There will be 125 fully-equipped ICU beds for Covid patients including a 50-double room accommodation facility for doctors and paramedics staff," he added.

The hospital will cover both Budgam and Srinagar and will become a lifeline for many COVID-19 patients who need ICU facilities.

Pandurang K Pole, Divisional Commissioner, Kashmir told ANI: "This government land had been allocated for a hospital but nothing had been made out of it. We are very glad that a hospital is being constructed in the most crucial hour. Neighboring districts can also benefit from this."

Locals appreciated this step of the government and said that the promise of a hospital will finally be fulfilled.

Eijaz Ahmad, a local resident said, "Since 2001 the government has been saying that they will build a hospital but they have just let the land remain empty like this. We are very grateful to the government that a COVID-19 hospital is going to be constructed. We have also been told that an oxygen plant will be constructed soon."

The country is currently witnessing a devastating wave of the COVID-19 pandemic. As many as 3,82,315 new COVID-19 cases were reported across the country, taking the total active cases to 34,87,229.

There are 37,302 active cases in Jammu and Kashmir. A total of 1,52,109 recoveries and 2,458 deaths have been reported from the union territory so far. (ANI)

https://www.aninews.in/news/national/general-news/drdo-starts-construction-of-500-bed-covid-19-hospital-in-j-ks-budgam20210506021402/

जागरण

Thu, 06 May 2021

बड़गाम में DRDO का 500 बेड का अस्पताल सिर्फ इतने दिनों में बनकर होगा तैयार

कश्मीर के बड़गाम जिला के रेशीपोरा गांव में डिफेंस रिसर्च डेवलपमेंट आर्गेनाइजेशन (डीआरडीओ) के 500 बेड का कोविड अस्पताल अगले 35 दिन में बनकर तैयार हो जाएगा। अस्पताल में 125 बेड इंटेंसिव केयर यूनिट के होंगे और अन्य बेड में ऑक्सीजन की सप्लाई की सुविधा होगी।

By Vikas Abrol

जम्मू: कश्मीर के बड़गाम जिला के रेशीपोरा गांव में डिफेंस रिसर्च डेवलपमेंट आर्गेनाइजेशन (डीआरडीओ) के 500 बेड का कोविड अस्पताल अगले 35 दिन में बनकर तैयार हो जाएगा। इस अस्पताल में 125 बेड इंटेंसिव केयर यूनिट के होंगे और अन्य बेड में ऑक्सीजन की सप्लाई की सुविधा होगी।

कश्मीर के डिविजनल कमिश्नर पीके पोले ने रेशीपोरा गांव का दौरा कर डीआरडीओ के 500 बेड के कोविड अस्पताल के निर्माण कार्यों का जायजा लिया। डिविजनल कमिश्नर ने बड़गाम के डिप्टी कमिश्नर शाहबाज मिर्जा के अलावा विभिन्न विभागों के वरिष्ठ अधिकारियों,डीआरडीओ के वैज्ञानिक रविंद्र कुमार के साथ अस्पताल के निर्माण कार्यों का जायजा लिया। डिविजनल कमिश्नर ने कहा कि इस प्रोजेक्ट पर कार्य 35 दिन में पूरा हो जाएगा। इस प्रोजेक्ट में 50 डबल रूम की सुविधा होगी जो डॉक्टरों और पैरामेडिकल स्टाफ के लिए होंगे। यह निर्माण कार्य 72 कनाल भूमि पर हो रहा है और संपर्क सड़क का कार्य भी पूरा कर लिया गया है।

डिविजनल कमिश्नर ने अधिकारियों को युद्ध स्तर पर बिजली और पानी की सुविधा उपलब्ध करवाने के निर्देश दिए। उन्होंने जोर देकर कहा कि सोमवार से पहले पहले वृक्षों का जड़ों से उखाड़ कर जगह को समतल किया जाए। पोले ने स्वास्थ्य विभाग के अधिकारियों को निर्देश दिए कि अस्पताल को सुचारू रूप से चलाने के लिए डॉक्टरों और पैरामेडिकल स्टाफ की तैनाती की जाए अधिकारियों ने डिविजनल कमिश्नर को बताया की अस्पताल थर्मल इंसुलेटेड मैटेरियल इंजीनियरिंग से बनाया जा रहा है जिसकी लाइफ 25 साल से भी अधिक है।

डीआरडीओ की टीम ने कहा इंटीरियर का कार्य सोमवार से शुरू हो जाएगा और समय पर पर्याप्त ऑक्सीजन स्टोर बना दिया जाएगा। डिवीजनल कमिश्नर ने कहा जब कोरोना समाप्त हो जाएगा तो तो इसे पूरे अस्पताल के तौर पर विकसित किया जाएगा। उन्होंने कहा कि अस्पतालों में ऑक्सीजन की सप्लाई पर्याप्त है और इसको लेकर आडिट किया जा रहा है।

https://www.jagran.com/jammu-and-kashmir/jammu-drdos-500-bedded-hospital-in-reshipora-of-budgam-will-be-ready-in-just-days-21617274.html

Thu, 06 May 2021

अब घरों में इस्तेमाल के लिए 1 लाख 50 हजार छोटे ऑक्सीजन सिलेंडर तैयार करेगा DRDO

By Arvind Kumar

नई दिल्ली। देश के विभिन्न हिस्सों में ऑक्सीजन की आवश्यकता को तत्काल पूरा करने के लिए, रक्षा अनुसंधान और विकास संगठन (DRDO) विभिन्न अस्पतालों की आवश्यकताओं को पूरा करने के लिए बड़े स्तर पर ऑक्सीजन सिलेंडर की व्यवस्था करने जा रहा है। एक ओर जहां, डीआरडीओ ने पीएम केयर्स फंड के तहत प्रति माह 125 संयंत्र के निर्माण का भी लक्ष्य रखा है तो वहीं अब घरों में इस्तेमाल के लिए एक लाख 50 हजार छोटे ऑक्सीजन सिलेंडर तैयार किए जाने का जिम्मा लिया है।

इस दिशा में रक्षा अनुसंधान और विकास संगठन मजबूत चिकित्सा ढांचे और उपकरण के निर्माण कार्य में जुट गया है। रक्षा अनुसंधान और विकास संगठन के अध्यक्ष डॉक्टर जी. सतीश रेड्डी के मुताबिक संगठन देश के विभिन्न भागों में कई कोविड विशेष अस्पताल बना रहा है ताकि मरीजों को बेहतर स्वास्थ्य सुविधाएं मिल सकें।

ज्ञात हो, हाल ही में रक्षा मंत्री राजनाथ सिंह ने सशस्त्र बलों व रक्षा संगठनों के साथ बैठक कर वर्तमान कोविड महामारी से निपटने के लिए अपना प्रयास तेज करने को कहा था। इसी का परिणाम है कि डीआरडीओ भी इस कड़ी में तेजी से कार्य कर रहा है।

गौरतलब है कि कोरोना के मामलों में हुई बढ़ोतरी के बाद देश में ऑक्सीन की भारी किल्लत हो गई है। इससे निपटने के लिए भारतीय की तीनों सेनाओं के साथ डीआरडीओ युद्ध स्तर पर कार्य कर रहा है। इसी का नतीजा है कि अगले कुछ दिनों में दिल्ली में कई ऑक्सीजन प्लांट स्थापित हो जाएंगे।

https://www.ptcnews.tv/drdo-will-prepare-1-lakh-50-thousand-small-oxygen-cylinders-hn/

Defence News

Defence Strategic: National/International

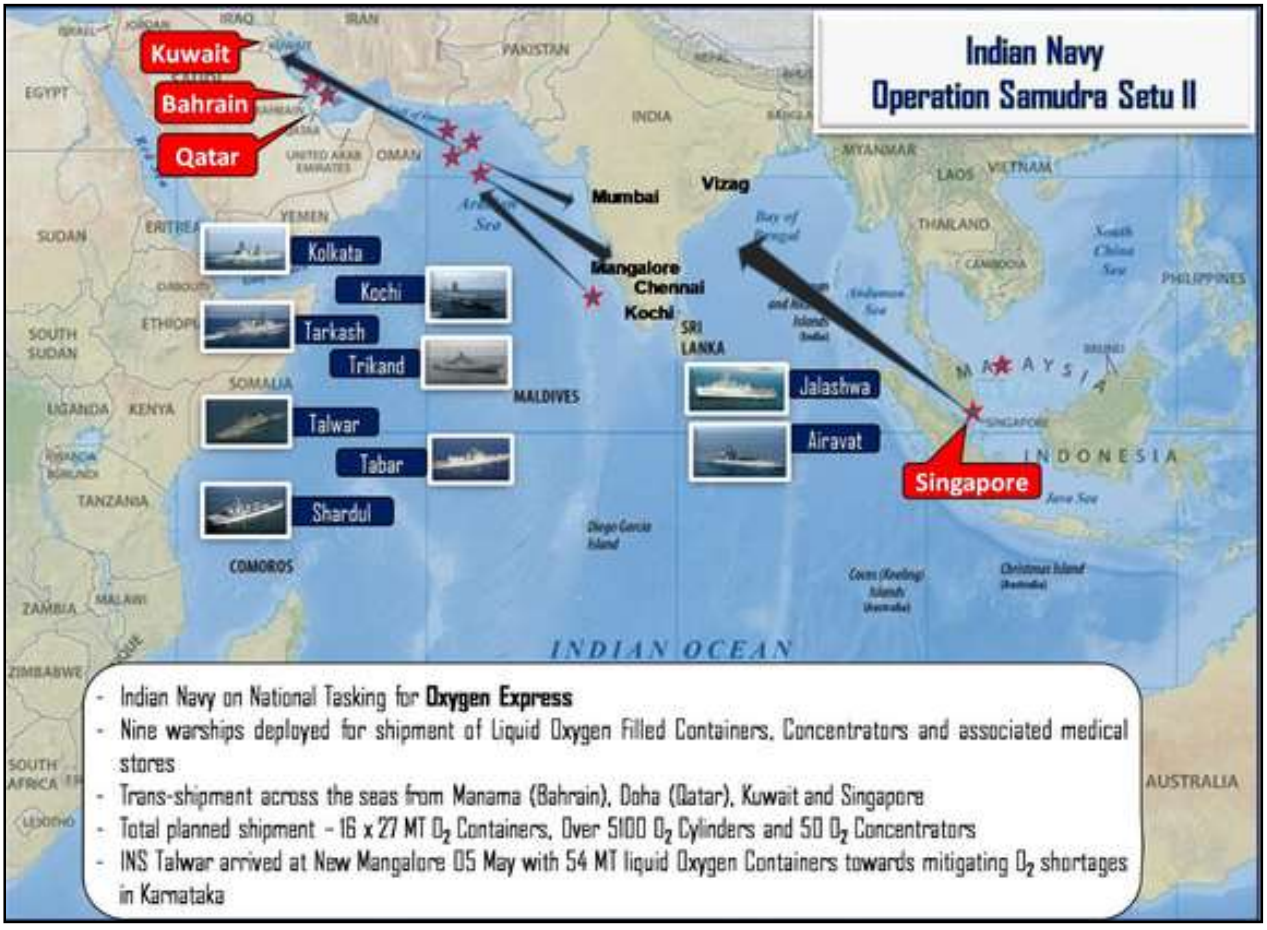
Press Information Bureau
Government of India

Ministry of Defence

Wed, 05 May 2021 6:57PM

Indian Navy steps up COVID relief operations: Nine Warships transporting oxygen, medical Equipment from Abroad

The Indian Navy has stepped up its COVID relief Operation Samudra Setu II with ships from all three Naval Commands in Mumbai, Visakhapatnam and Kochi, deployed for shipment of Liquid Medical Oxygen and associated medical equipment from friendly foreign countries in Persian Gulf and South East Asia.



On the Western seaboard, Indian Naval Ship Talwar entered the port of New Mangalore in Karnataka on 5th May, ferrying two 27 tons liquid oxygen tanks from Bahrain. INS Kolkata, deployed in Persian Gulf, also departed Kuwait on 5th May after embarking two 27 ton oxygen tanks, 400 Oxygen cylinders and 47 concentrators. In addition, four warships are also enroute to

Qatar and Kuwait, to embark around nine 27-ton Oxygen tanks and more than 1500 oxygen cylinders from these countries.

On the Eastern Seaboard, Indian Naval Ship Airavat, departed Singapore today with more than 3600 oxygen cylinders, eight 27 ton (216 tons) oxygen tanks, 10000 Rapid Antigen Detection Test Kits & 7 concentrators while INS Jalashwa remains deployed in the region, standing by to embark medical stores at short notice.

INS Shardul, the Landing Ship Tank of the Southern Naval Command at Kochi, is also on its way to Persian Gulf to bring three liquid Oxygen filled cryogenic containers. It may be recalled that INS Jalashwa and INS Shardul, had also participated in Operation Samudra Setu last year to repatriate stranded Indian citizens from abroad.

The deployment of nine warships as part of 'Operation Samudra Setu II' forms a part of the multiple lines of effort, by the GoI and the Indian Navy to supplement the oxygen requirement in the country.

https://www.pib.gov.in/PressReleasePage.aspx?PRID=1716318

पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Wed, 05 May 2021 6:57PM

भारतीय नौसेना ने कोविड राहत अभियान शुरू किया, नौ युद्धपोत ऑक्सीजन और चिकित्सा उपकरणों को विदेश से भारत पंहुचा रहे हैं

भारतीय नौसेना ने मुंबई, विशाखापट्टनम और कोच्चि में तीनों नौसेना कमांडों के जलपोतों के साथ अपने कोविड राहत अभियान समुद्र सेतु II को आगे बढ़ाया है। इन पोतों को फारस की खाड़ी और दक्षिण पूर्व एशिया में मैत्री राष्ट्रों से तरल चिकित्सा ऑक्सीजन तथा संबंधित चिकित्सा उपकरणों की शिपमेंट के लिए तैनात किया गया है।

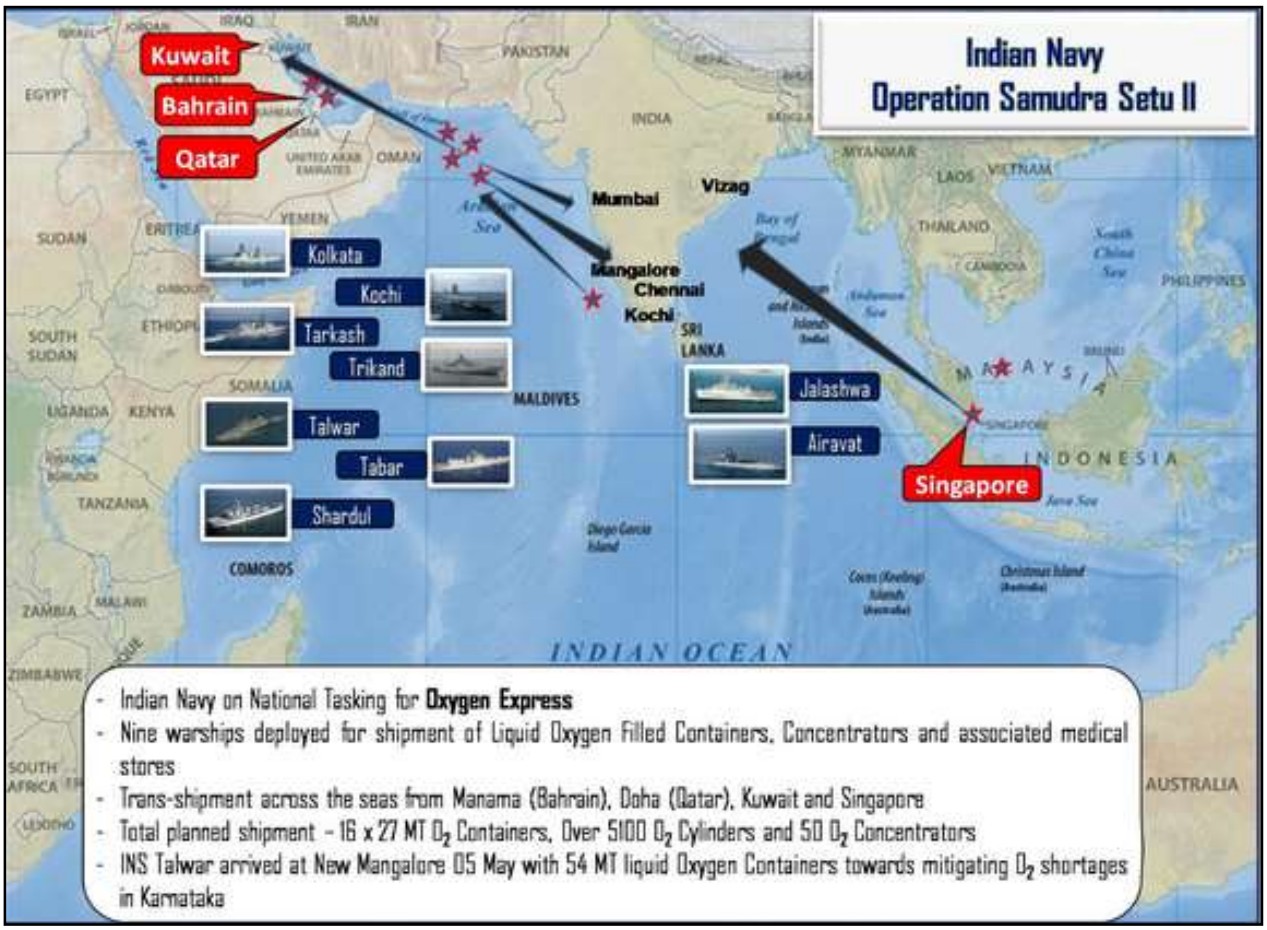
भारतीय नौसेना का जहाज तलवार 5 मई को पश्चिमी समुद्री तट पर, कर्नाटक के न्यू मैंगलोर बंदरगाह पंहुचा, जो बहरीन से दो 27 टन तरल ऑक्सीजन टैंक को लेकर आया है। फ़ारस की खाड़ी में तैनात आईएनएस कोलकाता भी 5 मई को कुवैत से रवाना हुआ, जो अपने साथ 27 टन के दो ऑक्सीजन टैंक, 400 ऑक्सीजन सिलेंडर और 47 कॉन्सेंट्रेटर लेकर आ रहा है। इसके अलावा भी, चार युद्धपोत कतर और कुवैत में हैं, जो इन देशों से लगभग 27 टन क्षमता वाले नौ ऑक्सीजन टैंक तथा 1500 से अधिक ऑक्सीजन सिलेंडर लेकर स्वदेश पहुंचेंगे।

पूर्वी समुद्री तट पर, भारतीय नौसेना के जहाज ऐरावत ने आज सिंगापुर से 3600 से अधिक ऑक्सीजन सिलेंडर, 27 टन (216 टन) के आठ ऑक्सीजन टैंक, 10000 रैपिड एंटीजन डिटेक्शन टेस्ट किट और 7 कॉन्सेंट्रेटर के साथ प्रस्थान किया। जबकि आईएनएस जलाश्व भी किसी भी सूचना पर तुरंत चिकित्सा केंद्र शुरू करने के लिए इस क्षेत्र में तैनात है।

आईएनएस शार्दुल, कोच्चि में दक्षिणी नौसेना कमान का लैंडिंग शिप टैंक, तीन तरल ऑक्सीजन भरे क्रायोजेनिक कंटेनर लाने के लिए फारस की खाड़ी के रास्ते पर है। यहां पर यह ध्यान देने वाली बात है कि

आईएनएस जलाश्व और आईएनएस शार्दुल ने विदेश में फंसे भारतीय नागरिकों को वापस लाने के लिए पिछले साल ऑपरेशन समुंद्र सेतु में भी भाग लिया था।

'ऑपरेशन ऑपरेशन समुद्र सेतु II' के हिस्से के रूप में नौ युद्धपोतों की तैनाती देश में ऑक्सीजन की आवश्यकता को पूरा करने के लिए भारत सरकार और भारतीय नौसेना द्वारा प्रयास की कई कड़ियों का एक हिस्सा है।



https://pib.gov.in/PressReleasePage.aspx?PRID=1716369

Hindustan Times

Thu, 06 May 2021

Three more Rafale fighter jets take off from France for IAF airbase

With three more fighters joining the IAF, the total numbers of Rafale fighter jets in Ambala will reach 20 with another four expected to join within a fortnight from France

By Shishir Gupta

New Delhi: Three more Rafale omnirole fighters are on their way to India from Merignac-Bordeaux airbase in France and are scheduled to land in Jamnagar airbase later on Wednesday evening. The three fighters will then fly to Ambala before they are repurposed to Hashimara airbase in north Bengal later.

French manufacturer Dassault is expected to deliver all the 36 Rafale fighter jets within this year (HT photo)

The aircraft will be refueled en-route by India's strategic ally United Arab Emirates using Airbus 330 multi-role transport tankers over middleeast skies.

With three more fighters joining the Indian Air Force (IAF), the total numbers of Rafale fighter jets in Ambala will reach 20 with another four expected to join within a fortnight from France. The process of induction of Rafale jets has become tedious during the coronavirus pandemic with the IAF pilots having to undergo complete quarantine in France before being cleared to fly back to India. The IAF is currently using seven Rafales to train the pilots in France.

While the Golden Arrows squadron in Ambala has 18 fighters with state of the art weapons and missiles, the remaining planes, perhaps six, will form the second squadron in Hashimara airbase. Sitting on the mouth of Silliguri corridor, Hashimara airbase will add teeth to the entire eastern sector against the Chinese Air Force. The airbase is currently being overhauled to become the second home of Rafale fighters.

While French manufacturer Dassault will deliver all the 36 Rafales by latter half of the year, the IAF is in a state of preparedness as the disengagement and de-escalation plan with the People's Liberation Army (PLA) in eastern Ladakh is still not complete as the Chinese army is not willing to restore status quo ante in Gogra-Hot Springs sector along the Line of Actual Control in Ladakh.

This is a matter of serious military concern as the Indian Army continues to remain deployed in the area and is monitoring Chinese Army movements.

https://www.hindustantimes.com/india-news/three-more-rafale-fighter-jets-take-off-from-france-for-iaf-airbase-101620204182322.html

The Tribune

Thu, 06 May 2021

ISRO trials Garuda drones for veggies & med delivery in Sriharikota

Chennai: India's space agency Indian Space Research Organisation (ISRO) trialed drone-based delivery of medicines, vegetables and spraying of disinfectants at its staff quarters located in rocket launch town Sriharikota on Wednesday.

Pic credit IANS

"In a pilot project, based drones of Garuda Aerospace delivered vegetables and medicines at the ISRO staff quarters and also sanitised the buildings in Sriharikota. We also sanitised the buildings using unmanned vehicles," Agnishwar Jayaprakash, Managing Director of city-based Garuda Aerospace, told IANS.

The city based Garuda Aerospace is a drone-as-a-service company.

Confirming that a senior ISRO official told IANS that the trial delivery of vegetables, medicines and spraying of anti-coronavirus disinfectants were good and satisfactory.

Jayaprakash said ISRO may give the order following their internal procedures and many of the staff are working from their homes.

As many as 200-300 people in the ISRO staff quarters — employees and their family members — were affected by Covid-19.

An official in Satish Dhawan Space Centre (SDSC) in Sriharikota on the condition of anonymity had told IANS that there are about 3,000 employees with their family members and daily about 30 people are tested positive for coronavirus.

"ISRO wants to minimise the physical interaction of the staff with the outside world as a safety measure and looking at automation as a solution," Jayaprakash said.

The second wave of Covid-19 sweeping across the country has also affected the various space centres and not just the rocket launch centre in Sriharikota in Andhra Pradesh, K.Sivan, Secretary, Department of Space had told IANS recently.

Sivan who is also the Chairman, Indian Space Research Organisation (ISRO) told IANS: "Several employees in our various centres have been affected because of the coronavirus and not only the Satish Dhawan Space Centre in Sriharikota." He said the centres have been asked to work with 50 per cent staff capacity and the remaining people to work from home.

"Only employees manning critical functional areas have been asked to attend office. The ISRO centres have been asked to follow the local government's norms," Sivan said. IANS

https://www.tribuneindia.com/news/schools/isro-trials-garuda-drones-for-veggies-med-delivery-in-sriharikota-248537

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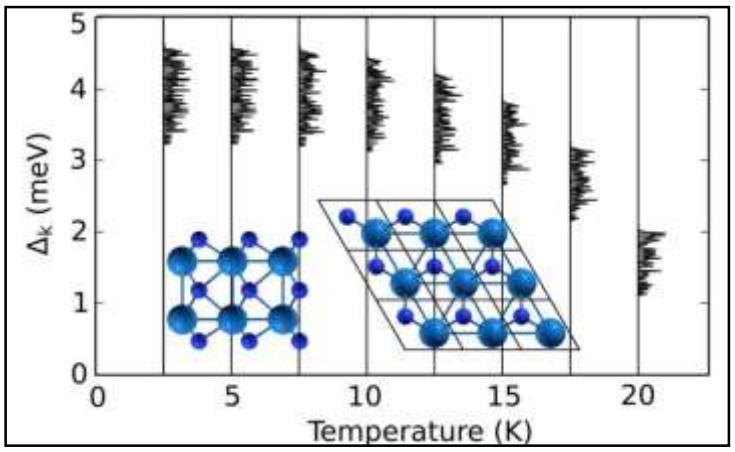
Thu, 06 May 2021

Superconductivity, high critical temperature found in 2D semimetal tungsten nitride

Superconductivity in two-dimensional (2D) systems has attracted much attention in recent years, both because of its relevance to our understanding of fundamental physics and because of potential technological applications in nanoscale devices such as quantum interferometers, superconducting transistors and superconducting qubits.

The critical temperature (Tc), or the temperature under which a material acts as a superconductor, is an essential concern. For most materials, it is between absolute zero and 10 Kelvin, that is, between -273 Celsius and -263 Celsius, too cold to be of any practical use. Focus has then been on finding materials with a higher Tc.



The model predicts a remarkably high superconducting critical temperature of 21 K in the easily exfoliable, topologically nontrivial 2D semimetal W2N3. Credit: Davide Campi @EPFL

While researchers have discovered materials that act as conventional superconductors at temperatures as high as 250 K under extreme pressure, the reported record until now among 2D materials stands at between 7 and 12K in MoS_2 according to experimental evidence and up to 20 K in some doped 2D materials and in intrinsic 2D metals according to theoretical modeling. Theoretical predictions have put a superconducting transition at a temperature above liquid hydrogen for some recently realized 2D boron allotropes but these materials cannot be obtained by exfoliation from van der Waals-bonded 3-D parents and must be grown directly on a metal substrate. This results in relatively strong interactions that are predicted to suppress the superconducting critical temperature down to just 2 K in a supported sample.

In parallel to this search for higher Tc, researchers have been looking for materials that combine nontrivial topological properties with superconductivity. This search is driven both by a quest for exotic states of matter as well as for deeper understanding of the interactions between topological edge states and the superconducting phase.

In the paper "Prediction of phonon-mediated superconductivity with high critical temperature in the two-dimensional topological semimetal W_2N_3" authors Nicola Marzari, head of the Laboratory of Theory and Simulation of Materials at EPFL, scientist Davide Campi and Ph.D. student Simran Kumari use first-principles calculations to identify intrinsic superconductivity in monolayer W_2N_3, a material that has recently been identified as being easily exfoliable from a layered hexagonal-W_2N_3 bulk by calculations, a theory also supported by experimental evidence. They find a critical temperature of 21 K, that is, just above liquid hydrogen and a record-high transition temperature for a conventional phonon-mediated 2D superconductor.

They also examine the effects of biaxial strain on the electron-phonon couplings and predict strong dependence of the electron-phonon coupling constant, making 2D W_2N_3 a very promising platform for studying different interaction regimes and testing the limits of current theories of superconductivity. Finally, they argue that the material could be doped such that currently unoccupied helical edge states 0.5 eV above the Fermi level become filled, even while superconductivity persists—albeit with a much lower transition temperature—making W_2N_3 a

viable candidate for studying and exploiting the possible coexistence and interactions of the superconducting state with topologically protected edge states.

More information: Davide Campi et al, Prediction of Phonon-Mediated Superconductivity with High Critical Temperature in the Two-Dimensional Topological Semimetal W2N3, *Nano Letters* (2021). DOI: 10.1021/acs.nanolett.0c05125

Journal information: *Nano Letters*

https://phys.org/news/2021-05-superconductivity-high-critical-temperature-2d.html

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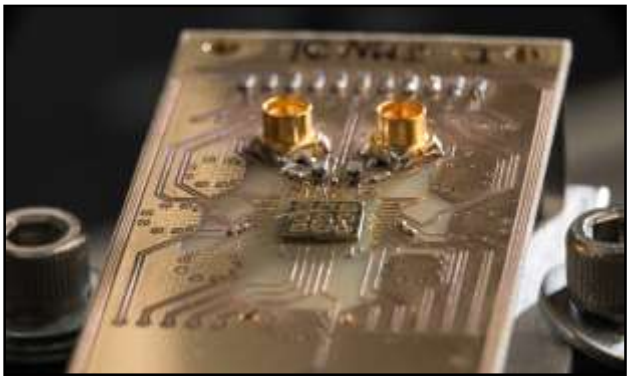
Thu, 06 May 2021

Researchers confront major hurdle in quantum computing

In a series of papers, Rochester researchers report major strides in improving the transfer of information in quantum systems.

Quantum science has the potential to revolutionize modern technology with more efficient computers, communication, and sensing devices. But challenges remain in achieving these technological goals, especially when it comes to effectively transferring information in quantum systems.



A quantum processor semiconductor chip is shown connected to a circuit board. Credit: University of Rochester photo / J. Adam Fenster

A regular computer consists of billions of transistors, called bits. Quantum computers, on the other hand, are based on quantum bits, also known as qubits, which can be made from a single electron.

Unlike ordinary transistors, which can be either "0" (off) or "1" (on), qubits can be both "0" and "1" at the same time. The ability of individual qubits to occupy these so-called superposition states, where they are in multiple states simultaneously, underlies the great potential of quantum computers. Just like ordinary computers, however, quantum computers need a way to transfer quantum information between distant qubits—and that presents a major experimental challenge.

In a series of papers published in *Nature Communications*, researchers at the University of Rochester, including John Nichol, an assistant professor of physics and astronomy, and graduate students Yadav Kandel and Haifeng Qiao, the lead authors of the papers, report major strides in enhancing quantum computing by improving the transfer of information between electrons in quantum systems.

In one paper, the researchers demonstrated a route of transferring information between qubits, called adiabatic quantum state transfer (AQT), for the first time with electron-spin qubits. Unlike most methods of transferring information between qubits, which rely on carefully tuned electric or magnetic-field pulses, AQT isn't as affected by pulse errors and noise.

To envision how AQT works, imagine you are driving your car and want to park it. If you don't hit your brakes at the proper time, the car won't be where you want it, with potential negative consequences. In this sense, the control pulses—the gas and brake pedals—to the car must be tuned carefully. AQT is different in that it doesn't really matter how long you press the pedals or how hard you press them: the car will always end up in the right spot. As a result, AQT has the potential

to improve the transfer of information between qubits, which is essential for quantum networking and error correction.

The researchers demonstrated AQT's effectiveness by exploiting entanglement—one of the basic concepts of quantum physics in which the properties of one particle affect the properties of another, even when the particles are separated by a large distance. The researchers were able to use AQT to transfer one electron's quantum spin state across a chain of four electrons in semiconductor quantum dots—tiny, nanoscale semiconductors with remarkable properties. This is the longest chain over which a spin state has ever been transferred, tying the record set by the researchers in a previous *Nature* paper.

"Because AQT is robust against pulse errors and noise, and because of its major potential applications in quantum computing, this demonstration is a key milestone for quantum computing with spin qubits," Nichol says.

Exploiting a strange state of matter

In a second paper, the researchers demonstrated another technique of transferring information between qubits, using an exotic state of matter called time crystals. A time crystal is a strange state of matter in which interactions between the particles that make up the crystal can stabilize oscillations of the system in time indefinitely. Imagine a clock that keeps ticking forever; the pendulum of the clock oscillates in time, much like the oscillating time crystal.

By implementing a series of electric-field pulses on electrons, the researchers were able to create a state similar to a time crystal. They found that they could then exploit this state to improve the transfer of an electron's spin state in a chain of semiconductor quantum dots.

"Our work takes the first steps toward showing how strange and exotic states of matter, like time crystals, can potentially by used for quantum information processing applications, such as transferring information between qubits," Nichol says. "We also theoretically show how this scenario can implement other single- and multi-qubit operations that could be used to improve the performance of quantum computers."

Both AQT and time crystals, while different, could be used simultaneously with quantum computing systems to improve performance.

"These two results illustrate the strange and interesting ways that quantum physics allows for information to be sent from one place to another, which is one of the main challenges in constructing viable quantum computers and networks," Nichol says.

More information: Haifeng Qiao et al. Floquet-enhanced spin swaps, *Nature Communications* (2021). DOI: 10.1038/s41467-021-22415-6

Yadav P. Kandel et al. Adiabatic quantum state transfer in a semiconductor quantum-dot spin chain, *Nature Communications* (2021). DOI: 10.1038/s41467-021-22416-5

Yadav P. Kandel et al. Coherent spin-state transfer via Heisenberg exchange, *Nature* (2019). DOI: 10.1038/s41586-019-1566-8

Journal information: *Nature Communications* , *Nature*

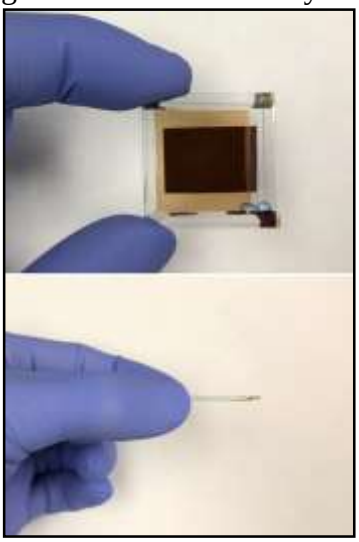
https://phys.org/news/2021-05-major-hurdle-quantum.html

PHYS.ORG

Thu, 06 May 2021

Thin, large-area device converts infrared light into images

Seeing through smog and fog. Mapping out a person's blood vessels while monitoring heart rate at the same time—without touching the person's skin. Seeing through silicon wafers to inspect the quality and composition of electronic boards. These are just some of the capabilities of a new infrared imager developed by a team of researchers led by electrical engineers at the University of California San Diego.



The new infrared imager is thin and compact with a large-area display. Credit: Ning Li

The imager detects a part of the infrared spectrum called shortwave infrared light (wavelengths from 1000 to 1400 nanometers), which is right outside of the visible spectrum (400 to 700 nanometers). Shortwave infrared imaging is not to be confused with thermal imaging, which detects much longer infrared wavelengths given off by the body.

The imager works by shining shortwave infrared light on an object or area of interest, and then converting the low energy infrared light that's reflected back to the device into shorter, higher-energy wavelengths that the human eye can see.

"It makes invisible light visible," said Tina Ng, a professor of electrical and computer engineering at the UC San Diego Jacobs School of Engineering.

While infrared imaging technology has been around for decades, most systems are expensive, bulky and complex, often requiring a separate camera and display. They are also typically made using inorganic semiconductors, which are costly, rigid and consist of toxic elements such as arsenic and lead.

The infrared imager that Ng's team developed overcomes these issues. It combines the sensors and the display into one thin device, making it compact and simple. It is built using organic semiconductors, so it is low cost, flexible and safe to use in biomedical applications. It also provides better image resolution than some of its inorganic counterparts.

The new imager, published recently in *Advanced Functional Materials*, offers additional advantages. It sees more of the shortwave infrared spectrum, from 1000 to 1400 nanometers—existing similar systems often only see below 1200 nanometers. It also has one of the largest display sizes of infrared imagers to date: 2 square centimeters in area. And because the imager is fabricated using thin film processes, it is easy and inexpensive to scale up to make even larger displays.

Energizing infrared photons to visible photons

The imager is made up of multiple semiconducting layers, each hundreds of nanometers thin, stacked on top of one another. Three of these layers, each made of a different organic polymer, are the imager's key players: a photodetector layer, an organic light-emitting diode (OLED) display layer, and an electron-blocking layer in between.

The photodetector layer absorbs shortwave infrared light (low energy photons) and then generates an electric current. This current flows to the OLED display layer, where it gets converted into a visible image (high energy photons). An intermediate layer, called the electron-blocking layer, keeps the OLED display layer from losing any current. This is what enables the device to produce a clearer image.

This process of converting low energy photons to higher energy photos is known as upconversion. What's special here is that the upconversion process is electronic. "The advantage of this is it allows direct infrared-to-visible conversion in one thin and compact system," said first author Ning Li, a postdoctoral researcher in Ng's lab. "In a typical IR imaging system where upconversion is not electronic, you need a detector array to collect data, a computer to process that data, and a separate screen to display that data. This is why most existing systems are bulky and expensive."

Another special feature is that the imager is efficient at providing both optical and electronic readouts. "This makes it multifunctional," said Li. For example, when the researchers shined infrared light on the back of a subject's hand, the imager provided a picture of the subject's blood vessels while recording the subject's heart rate.

The researchers also used their infrared imager to see through smog and a silicon wafer. In one demonstration, they placed a photomask patterned with "EXIT" in a small chamber filled with smog. In another, they placed a photomask patterned with "UCSD" behind a silicon wafer. Infrared light penetrates through both smog and silicon, making it possible for the imager to see the letters in these demonstrations. This would be useful for applications such as helping autonomous cars see in bad weather and inspecting silicon chips for defects.

The researchers are now working on improving the imager's efficiency.

More information: Ning Li et al, Organic Upconversion Imager with Dual Electronic and Optical Readouts for Shortwave Infrared Light Detection, *Advanced Functional Materials* (2021). DOI: 10.1002/adfm.202100565

Journal information: *Advanced Functional Materials*

https://phys.org/news/2021-05-thin-large-area-device-infrared-images.html

Forbes

Thu, 06 May 2021

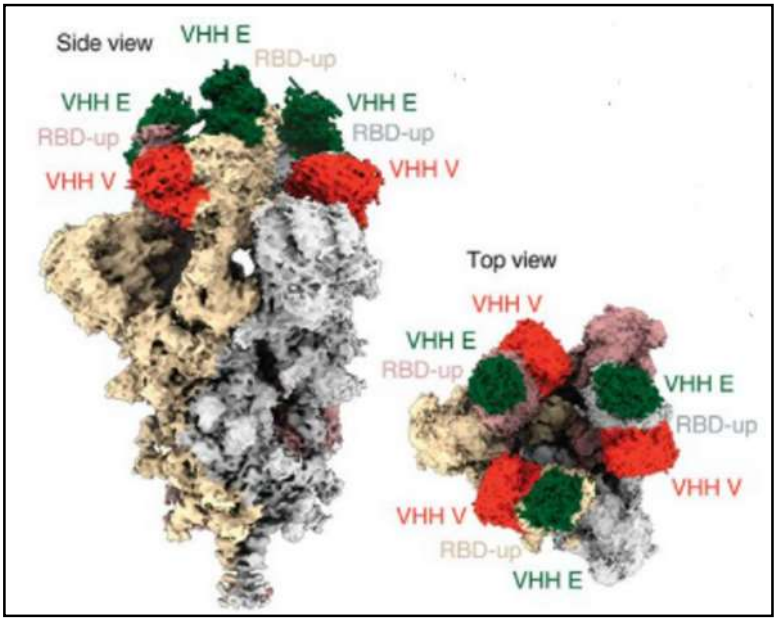
A new approach to treat and prevent Covid-19

By William A. Haseltine

As SARS-CoV-2 variants grow in type and frequency, Covid-19 researchers are on the hunt for parts of the virus that remain consistent across variants in order to create Covid-19 treatments that work for multiple strains of the virus. This is the third in a series discussing these potential Achilles' heels for Covid-19. Read more from this series in part one and part two.

Alpaca Wallpaper Access

Antibodies have been at the forefront in the search for drugs to prevent and treat Covid-19. Combination antibodies effectively reduce infection length if given early enough and prevent infection for those exposed. However, there are some inherent difficulties with antibodies as drugs. They are relatively large molecules that are expensive to produce. Additionally, SARS-CoV-2 mutates to resist single and, in some cases, to double-antibody cocktails. Here we describe a new approach to the same end using antibodies derived from camelids, a biological family which includes mammals such as camels, llamas, and alpacas.



Nanobodies V and E binding to the spike protein. Koenig et al

Camelid-derived antibodies lack a light chain and are composed of two identical heavy chains. These unique heavy-chain antibodies are also known as nanobodies. Camelid nanobodies are less than a quarter of the size of human antibodies. They are more stable, more simply modified, and less expensive than traditional monoclonal antibody drugs. These unique qualities have prompted researchers to develop camelid-derived nanobody drugs for Covid-19.

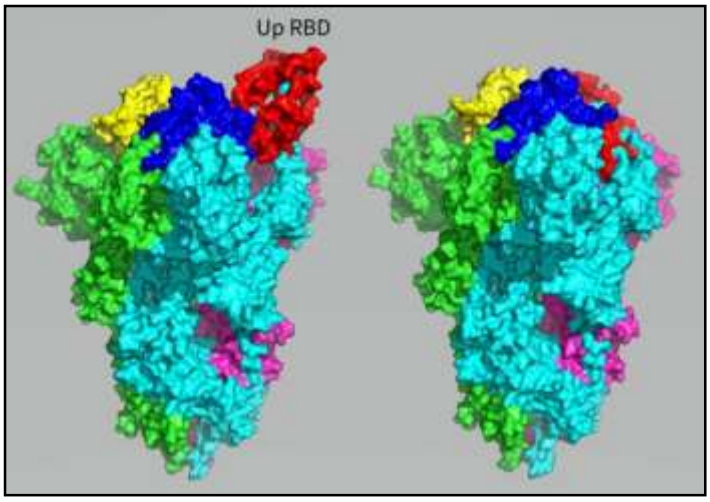
In a study by Koenig *et al.*, a llama and an alpaca were immunized with a SARS-CoV-2 spike protein from an inactivated virus. They then identified four nanobodies that resulted from immunization that potently neutralized SARS-CoV-2: E, U, V, and W. Three of these—U, V, and W—bind to the Covid-19 spike protein as indicated in the figure below. In contrast, E is bound to an extended loop overlapping the receptor-binding domain.

Each of the four nanobodies effectively neutralized SARS-CoV-2 by roughly 50% in a plaque-reduction assay on their own. To improve the activity, combinations of two individual nanobodies were joined by a flexible linker to create drug candidates that might be more effective by binding to two different sites simultaneously.

The receptor-binding domain that binds to ACE2 resembles a spring-loaded "up-down" device. When the receptor-binding domain is in the "down" position, it is not primed to bind to ACE2. However, when in the "up" position, the receptor-binding domain is open to ACE2 binding.

A series of experiments were done to link the nanobodies in sets of two or three to determine which combinations were the most potent neutralizers. The ones which were selected were V and E.

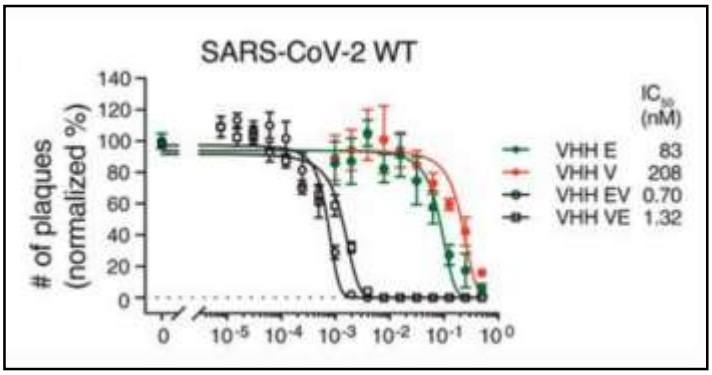
lV+E neutralized at a dilution 62 times greater and had an affinity at least 22 times greater than singular nanobodies, indicating a highly neutralizing combination nanobody. The E nanobody seems to bind to the "up" position in the stead of ACE2, releasing the fusion activity of the trimeric protein prematurely and inactivating the structure. On the other hand, the V nanobody improves the ability of V+E to bind by stabilizing the receptor-binding domain in the two-up position, allowing the E nanobody a better opportunity to bind and prematurely activate the trimer.



Receptor binding domain in up and down positions. Stanford University

The researchers also aimed to find a multivalent nanobody that neutralizes rapidly spreading variants found to resist neutralizing antibodies from convalescent sera and vaccines. The V nanobody avoids the high-escape amino acids of 417, 484, and 501, suggesting it could potentially neutralize variants like B.1.1.7 and B.1.351, which contain mutations at those positions. However, the E nanobody contains binding at both 484 and 501, indicating it would be less tolerant of changes at these positions. Therefore, the V+E combination nanobody may not have the neutralizing prowess against variants as it does against the wild type.

The other nanobodies—U and W—were overcome by spike mutations at positions 371 and 378. While mutations at these positions are less common than mutations at positions 417, 484, and 501, they still denote a shortcoming in these nanobodies. While they may be potently neutralizing, it seems they may not overcome rapidly spreading variants of concern.



The V+E combination nanobody is a potent neutralizer and could be used as a new approach to prophylaxis, therapeutics, and improving upon existing antibodies. However, this is not a universal solution, as mutations in the spike protein decrease the binding of individual camelid-derived nanobodies. This can be partially overcome by combining nanobodies, but not entirely because mutations may arise in both domains, which reduce potency.

It may be possible to use the camelid approach to find conserved epitopes which do not affect antibody neutralization, such as those described by Starr *et al.* in part two of this series. Combination nanobodies could potentially target these conserved regions, in addition to the binding regions, to produce a highly potent and versatile neutralizing bispecific nanobody. With further research, combination nanobodies to prevent and treat highly infectious and immune-evasive SARS-CoV-2 variants may well be on their way.

https://www.forbes.com/sites/williamhaseltine/2021/05/05/a-new-approach-to-treat-and-prevent-covid-19/?sh=548b159622db