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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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## Vaccine, therapeutic drug development for COVID-19 going on: DRDO Chairman

*The DRDO is making special N-99 masks, besides personal protective gear for chemical, biological, radiation and nuclear-related activities*

NOIDA: The Defence Research and Development Organisation (DRDO) is working on a vaccine and therapeutic drugs, while also making sanitiser, special masks and protective gear to combat COVID-19, its chairman G Satheesh Reddy said.

Reddy said the DRDO, a government agency charged with the military's research and development, has made and distributed over five lakh bottles of sanitizer so far and was producing 30,000 masks daily and the capacity would go up to 60,000 soon.

The DRDO is making special N-99 masks, besides personal protective gear for chemical, biological, radiation and nuclear-related activities, and working on software, including one that will track people under quarantine.

He shared the various initiatives and activities being conducted by the DRDO to tackle the spread of COVID-19 during a video conference with a private university here on Thursday.

"Lot of efforts are going on to make therapeutic medications. The entire nation is contributing and DRDO plunged into activities right from day one taking up the cause," Reddy, also the Secretary to the Department of Defence Research and Development, said.

"We started by preparing sanitiser at our labs in Gwalior and Delhi with our own formulations and we are working with industries also. More than five lakh sanitizer bottles have been distributed across the country. Labs across the country have been given the formulations who are further producing them locally," he said during the webinar organised by the Amity University, Noida.

The distinguished scientist said many instruments and machines used for sanitization are also being prepared and distributed, while special innovations have been done for baggage screening at airports.

"We have also developed a mask called N-99 with better levels of filtration and are also producing 30,000 masks every day. We also developed multiple fabrics for PPE and in the last one month, we have developed three types of PPE. We have also created a complete face shield at DRDO. We are also making a large number of ventilators, including a mechanism where one ventilator can be used for multiple patients," Reddy was quoted as saying in a statement.

"We are also working on creating much software, including one that is tracking people in quarantine. We have also created secure video-conferencing software. Vaccine development and therapeutic drug development is also going on," he shared.

Reddy was joined by Ashok K Chauhan, the founder president of the Amity Group, Amita Chauhan, the chairperson of Amity Schools, and William Selvamurthy, a former DRDO scientist currently working with the city-based university.

<https://www.newindianexpress.com/nation/2020/may/08/vaccine-therapeutic-drug-development-for-covid-19-going-on-drdo-chairman-2140879.html>



DRDO Chairman Satheesh Reddy (File Photo | EPS)



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<https://timesofindia.indiatimes.com/india/vaccine-therapeutic-drug-development-for-covid-19-going-on-drdo-chairman/articleshow/75630444.cms>

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<https://www.ndtv.com/india-news/coronavirus-india-working-on-vaccine-drugs-to-fight-covid-19-drdo-chairman-g-satheesh-reddy-2225714>





Sat, 09 May 2020

## कोविड-19 को लेकर टीके और दवा के विकास पर चल रहा है काम-DRDO

- डीआरडीओ का कहना है कि कोरोना वायरस के टीके और दवाई को लेकर काम चल रहा है।
- देश में कोरोना संक्रमितों की संख्या 55 हजार के पार हो गई है।

नोएडा: रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) कोविड-19 महामारी को लेकर टीके और दवा के विकास पर काम कर रहा है। इसके साथ ही संगठन सैनिटाइजर, विशेष मास्क और सुरक्षात्मक उपकरण बनाने के काम में भी लगा है। डीआरडीओ के अध्यक्ष जी सतीश रेड्डी ने यह बात कही।

उन्होंने कहा कि डीआरडीओ अब तक सैनिटाइजर की पांच लाख बोतलें तैयार और वितरित कर चुका है। साथ ही हर रोज लगभग 30 हजार मास्क बना रहा है और यह क्षमता जल्द ही 60 हजार तक पहुंच जाएगी।

डीआरडीओ रासायनिक, जैविक, विकिरण और परमाणु संबंधित गतिविधियों को लेकर सुरक्षात्मक उपकरण बनाने के साथ ही एन-99 मास्क भी बना रहा है। इसके अलावा यह सॉफ्टवेयर पर भी काम कर रहा है जिसकी मदद से क्वॉरंटाइन में रह रहे लोगों पर नजर रखी जाएगी।

उन्होंने गुरुवार को यहां एक निजी यूनिवर्सिटी के साथ वीडियो कॉन्फ्रेंस के दौरान कोरोना वायरस की रोकथाम के लिए डीआरडीओ की ओर से चलाई जा रही विभिन्न पहलों और गतिविधियों की जानकारी दी।

रेड्डी रक्षा अनुसंधान एवं विकास विभाग के सचिव भी हैं। उन्होंने कहा, “उपचार संबंधी दवा के विकास के लिए अनेक प्रयत्न किए जा रहे हैं। पूरा देश योगदान दे रहा है और डीआरडीओ संबंधित उद्देश्य के लिए शुरुआती दिन से ही काम में लगा है।”

<https://www.abplive.com/news/india/drdo-says-that-work-is-going-on-for-the-coronavirus-vaccine-and-medicine-1391932>

ज्ञान पसार एवम् विस्तार  
इंडिया के 50 वर्ष

Sat, 09 May 2020

## कोचीन हवाई अड्डे पर डीआरडीओ के यूवी आधारित लगेज डिसइन्फेक्टर सिस्टम से सामान को किया जा रहा डिसइन्फेक्ट

केरल में डीआरडीओ की एनपीओएल प्रयोगशाला ने रिकार्ड समय में कोचीन अंतर्राष्ट्रीय

हवाई अड्डे पर एक यूवी आधारित लगेज डिसइन्फेक्टर सिस्टम तैयार किया है।

इस सिस्टम से सामान को सेनेटाइज किया जाता है।

राजीव रंजन

नई दिल्ली: केरल में डीआरडीओ की एनपीओएल प्रयोगशाला ने रिकार्ड समय में कोचीन अंतर्राष्ट्रीय हवाई अड्डे पर एक यूवी आधारित लगेज डिसइन्फेक्टर सिस्टम तैयार किया है। इस सिस्टम से सामान को सेनेटाइज किया जाता है। वंदे भारत मिशन के तहत विदेशों में फंसे जो भारतीय कोचीन उतर रहे हैं उनके सामान को डिसइन्फेक्ट किया जा



रहा है। कोचीन हवाई अड्डे पर यह कीटाणुनाशक प्रणाली पूरी तरह से ऑटोमेटिक है। इसमें दो स्टेज में डिसइन्फेक्शन होता है। पहले चरण में सोडियम हाइपोक्लोरेट और दूसरे चरण में यूवी किरणों से सामान को गुजरना होता है। इसे डीआरडीओ ने कोचीन हवाई अड्डे और भारतीय नौसेना के लिए तब डिजाइन किया था जब कोरोना महामारी शुरू हुई थी। ऐसे सिस्टम केरल के बाकी तीनों हवाई अड्डे कुन्नूर, कोझीकोडे और तिरुवनंतपुरम में लगाने को कहा गया है।

एनपीओएल के निदेशक विजयन पिल्लई ने कहा कि कोचीन अंतर्राष्ट्रीय हवाई में सिस्टम स्थापित किया गया है वह एक यूवी बैगेज स्कैनर का विस्तार है जिसे भारतीय नौसेना के लिए और हमारे स्वयं के उपयोग के लिए भी विकसित किया जा रहा है।



डीआरडीओ ने एक यूवी आधारित लगेज डिसइन्फेक्टर सिस्टम तैयार किया है।

बता दें कि कोरोनावायरस की वजह से देश में जारी लॉकडाउन के कारण विदेश में फंसे भारतीयों को वापस लाने

का अभियान शुरू किया जा चुका है। सरकार ने इसे 'वंदे भारत मिशन' नाम दिया है। 'वंदे भारत मिशन' के तहत अबू धाबी और दुबई से 363 भारतीय आज वापस स्वदेश लाए गए। दोनों विशेष उड़ानें गुरुवार रात केरल में लैंड हुईं। भारतीय नागरिकों को लेकर एयर इंडिया एक्सप्रेस का पहला विमान गुरुवार को अबू धाबी से केरल के कोच्चि पहुंचा।

विमान ने अबू धाबी से कोच्चि के लिए शाम 5:07 बजे (स्थानीय समयानुसार) उड़ान भरी। वहीं, दूसरी फ्लाइट दुबई से शाम 5:46 बजे (स्थानीय समय) कोझिकोड के लिए रवाना हुई थी। एयर इंडिया एक्सप्रेस के प्रवक्ता ने बताया कि चार नवजात शिशुओं और 177 यात्रियों को लेकर पहला विमान रात 10 बजकर नौ मिनट पर कोच्चि के अंतरराष्ट्रीय हवाई अड्डे पर उतरा। केरल सरकार के एक अधिकारी ने बताया कि वापस लौटे नागरिकों को उनके संबंधित जिलों में प्रशासन द्वारा तैयार क्वारंटाइन सेंटरों में रखा जाएगा।

<https://khabar.ndtv.com/news/india/disinfecting-of-goods-of-indians-returning-from-abroad-with-uv-based-luggage-disinfectant-system-of-drdo-at-cochin-airport-2225675>

SMBSTORY

Sat, 09 May 2020

## DRDO partners with Noida-based manufacturer to launch contactless hand sanitiser

*OakMist, the touchless hand sanitising dispenser can sanitise 1,000 hands at a time.*

*Rashtrapati Bhavan, PMO, SC and MHA have been equipped with the product*

*By Bhavya Kaushal*

Measures like social distancing, wearing masks and sanitising hands have become a part of our daily routine, thanks to COVID-19, and they will remain an important part of the 'new normal' even in the post pandemic era.

Indian defence manufacturing company Defence Research and Development Organisation (DRDO) in partnership with Noida-based company and its industry partner, Riot Labs, has come up with a contactless sanitiser dispenser called OakMist to tackle the issue of sanitation in the country.

Speaking to SMBStory, Shishir Gupta,



Touchless sanitizer dispenser

CEO and Co-founder of Riot Labz, said that the concept, technology and design of the product were developed by DRDO and Riot Labs was asked to develop the final product. OakMist was manufactured in the company's manufacturing unit in Noida in a span of three days.

Shishir says, "It was observed that many people were sanitising their hands but in the process, they were touching the dispenser too many times. To counter this situation, we came up with a contactless hand sanitising dispenser."

### **How it works?**

When employees enter a building, office complex, or a hospital, they are supposed to keep the hand below the dispenser which senses the hand and automatically sprays an alcohol-based hand rub solution.

The product is priced between Rs 7,940 and Rs 12,990 and has a capacity of five litres. Each time, the dispenser sprays, it lets out five millilitres of the solution. OakMist can sanitise around 1,000 hands at a time. Depending on the size of the organisation, one dispenser can last for minimum one day and maximum two weeks.

Oakmist was launched on May 1 but is yet to hit the retail stores, both online and offline. However, it will soon be listed on ecommerce platforms, Amazon and Flipkart as well. Currently, Rashtrapati Bhavan, Prime Minister's Office, Supreme Court and the Ministry of Home Affairs have been equipped with it.

Shishir says that he aims to make it available across the country in both government as well as private organisations. He, however, added that the product will not be open for exporting now and the company will focus on meeting the domestic demand first.

[https://yourstory.com/smbstory/drdo-partners-noida-based-manufacturer-contactless-hand-sanitiser?utm\\_pageloadtype=scroll](https://yourstory.com/smbstory/drdo-partners-noida-based-manufacturer-contactless-hand-sanitiser?utm_pageloadtype=scroll)

**THE HINDU**

*Fri, 08 May 2020*

## **Govt. mulling mass production of medical items**

### ***Expert panel set up to link PSUs with technology providers***

Thiruvananthapuram: The government has constituted an expert committee to submit recommendations for the manufacture of medical devices and equipment by State-owned enterprises.

This follows an interaction by Industries Minister E.P. Jayarajan with experts representing various institutions that develop and manufacture medical equipment. The expert committee will look into the possibility of mass manufacture of items such as ventilators and baggage disinfection scanners for the present campaign against COVID-19 as well as in the long term.

Representatives of Vikram Sarabhai Space Centre (VSSC), Naval Physical and Oceanographic Laboratory (NPOL), HLL Lifecare and other institutions informed the government that they were ready to join hands with public sector units for the initiative. The meeting decided to equip the Kerala State Drugs and Pharmaceuticals for large scale manufacture of generic drugs.

CSIR-National Institute for Interdisciplinary Science and Technology Director A. Ajayaghosh, VSSC Director S. Somanath, Group Director of NPOL Sameer Abdul Azeez, Rajiv Gandhi Centre for Viotechnology scientist Iyep Joseph, Director of HLL Lifecare E.A. Subramanian, and managing directors of public sector KSDP, Keltron, Kerala Electricals and Allied Engineering Limited and Steel and Industrial Forgings participated in the meeting. Principal Secretary of Industries K. Elangovan and senior officials were present.

<https://www.thehindu.com/news/national/kerala/govt-mulling-mass-production-of-medical-items/article31528308.ece>



## Working for development of Vaccine for Corona

### కరోనా వ్యాక్సిన్ అభివృద్ధికి రాజ్‌లేని కృషి

#### » డీఆర్‌డీవో చైర్మన్ సతీశ్‌రెడ్డి

నోయిడా(యూపీ), మే 8: కరోనా వ్యాక్సిన్, ఔషధాల అభివృద్ధికి రాజ్‌లేని కృషి చేస్తున్నట్లు రక్షణ పరిశోధన అభివృద్ధి సంస్థ(డీఆర్‌డీవో) చైర్మన్ జి.సతీశ్‌రెడ్డి తెలిపారు. వీవీఈలు, శానిటైజర్లు, ఎన్-99 మాస్కుల రూపకల్పనపైనా దృష్టిసారించినట్లు వెల్లడించారు. ఇప్పటివరకు 5 లక్షలకుపైగా శానిటైజర్ బాటిళ్లను ఉత్పత్తి చేసి పంపిణీ చేశామన్నారు. ప్రస్తుతానికి రోజూ 30వేల మాస్కులు ఉత్పత్తి చేస్తున్నామని, త్వరలో ఆ సామర్థ్యాన్ని 60వేలకు పెంచాలని లక్ష్యంగా పెట్టుకున్నట్లు పేర్కొన్నారు. వైద్యులు, ఆరోగ్య సిబ్బందిని కరోనా ఇన్ఫెక్షన్ నుంచి కాపాడగల పూర్తిస్థాయి పేస్ షీల్డ్‌తో పాటు మూడురకాల వీవీఈలను అభివృద్ధిచేసినట్లు చెప్పారు. ప్రజల వ్యక్తిగత సమాచార గోప్యతకు అత్యంత ప్రాధాన్యమిచ్చే నరికొత్త వీడియో కాన్ఫరెన్సింగ్ సాఫ్ట్‌వేర్‌ను కూడా రూపొందించామన్నారు. క్వారంటైన్‌లో ఉన్న వారి కదలికలను ట్రాక్ చేయగల సాఫ్ట్‌వేర్ రూపకల్పనకు డీఆర్‌డీవో కనరత్తు చేస్తోందని వివరించారు. ఉత్తరప్రదేశ్ లోని నోయిడాలో ఉన్న ఓ ప్రైవేటు వర్సిటీ శాస్త్రవేత్తలతో నిర్వహించిన వీడియో కాన్ఫరెన్స్‌లో ఆయన ఈ వివరాలను వెల్లడించారు.



<https://epaper.andhrajyothy.com/m5/266512/Telangana/09-05-2020#page/8/1>

## Developing Vaccine for Covid-19

### కొవిడ్-19కు టీకా అభివృద్ధి చేస్తున్నాం

డీఆర్డీవో చైర్మన్ సతీష్ రెడ్డి

నోయిడా: కొవిడ్-19పై పోరు కోసం టీకా, ఔషధం అభివృద్ధిపై కసరత్తు చేస్తున్నట్లు రక్షణ పరిశోధన, అభివృద్ధి సంస్థ (డీఆర్డీవో) చైర్మన్ జి సతీష్ రెడ్డి తెలిపారు. ఈ మహమ్మారిని ఎదుర్కోవడానికి శానిటైజర్లు, ప్రత్యేక మాస్కులు, వ్యక్తిగత రక్షణ సాధనాలను తయారుచేయనున్నట్లు తెలిపారు. సొంత ఫార్ములాలతో గ్వాలియర్, దిల్లీలోని ల్యాబ్లో శానిటైజర్లను ఉత్పత్తి చేస్తున్నామని, ఇప్పటికే నలక్షలకు పైగా సీసాలను పంపిణీ చేసినట్లు చెప్పారు. నోయిడాలోని అమిటీ విశ్వవిద్యాలయం నిర్వహించిన ఒక వెబినార్లో ఆయన ప్రసంగించారు.

**హైదరాబాద్ ల్యాబ్లోనూ..**

మరోవైపు హైదరాబాద్లోని డీఆర్డీవో ప్రయోగశాల 'రిసెర్చ్ సెంటర్ ఇమారత్' (ఆర్ సీఐ) కూడా కొవిడ్-19పై పోరు కోసం వినూత్న ఉత్పత్తులను అభివృద్ధి చేసింది. 'డెవెన్' పేరుతో తక్కువ ఖర్చుతో పోర్లబుల్ వెంటిలేటర్ను రూపొందించింది. అలాగే అతినీల లోహిత కిరణాలతో వస్తువులను క్రిమిరహితంగా మార్చే యూవీసీ శానిటైజర్లు, నగదును శుభ్రం చేయడానికి 'అటోమేటెడ్ యూవీసీ కరెన్సీ శానిటైజింగ్ డివైస్'ను సిద్ధం చేసింది.

<https://epaper.eenadu.net/Home/Index>



Sat, 09 May 2020

## **Eight labs approved for testing of PPE Coveralls to protect from COVID-19**

*The tests are conducted conforming with the technical requirements issued by Ministry of Health & Family Welfare, Government of India on 2nd March 2020*

New Delhi: Eight laboratories have now been approved for testing of PPE Coveralls required for protection from COVID-19. These are – (i) South India Textiles Research Association (SITRA), Coimbatore, Tamil Nadu (ii) DRDO-INMAS, New Delhi, (iii) Heavy Vehicle Factory, Avadi, Chennai (iv) Small Arms Factory, Kanpur, Uttar Pradesh (v) Ordnance Factory, Kanpur, Uttar Pradesh (vi) Ordnance Factory, Muradnagar, Uttar Pradesh (vii) Ordnance Factory, Ambarnath, Maharashtra (viii) Metal & Steel Factory, Ishapore, West Bengal. All these laboratories have been accredited by NABL.

The tests are conducted conforming with the technical requirements issued by Ministry of Health & Family Welfare, Government of India on 2nd March 2020. On 6th April 2020 Ministry of Textiles further issued detailed procedure for issue of Unique Certification Code (UCC) for each passed prototype sample from the manufacturers of the PPE Coveralls. These procedures have been further rationalized by the Ministry of Textiles on 22nd April 2020.

The Unique Certification Code (UCC) refers to each prototype sample submitted by the manufacturer and is required to be embossed on each manufactured Coverall along with the name of the manufacturer, date of manufacture and name of the client. This procedure has been fully implemented in respect of procurement by M/s HLL Lifecare Limited, which is the procurement agency for the hospitals and healthcare organisations under the Ministry of Health & Family Welfare, Government of India.

The manufacturers are also required to submit an affidavit along with their submitted sample, stating details of their manufacturing unit, GSTIN number, company registration number, Udyog Aadhar number or DIC registration number and other relevant details. They are also required to declare that they are textile manufacturers and not traders. The affidavit is to form a part of the UCC Certificate.

Details of all UCC Certificates are available on the official websites of DRDO, OFB (Ordnance Factory Board) and SITRA, for verification by the public.

Ministry of Textiles has also advised the procurement agencies to formulate their post-delivery random sampling and testing procedure, to ensure that a consistent quality control mechanism is in place during the supply period. (With Inputs from PIB)

<https://www.devdiscourse.com/article/health/1042533-eight-labs-approved-for-testing-of-ppe-coveralls-to-protect-from-covid-19>





Sat, 09 May 2020

## भारतीय नौसेना ने बनाई कम लागत वाली PPE किट, सभी मानकों पर टेस्ट हुआ सफल

**भारतीय नौसेना ने बहुत ही कम लागत वाली पीपीई किट बनाई है. डीआरडीओ के इन्मास ने इसकी टेस्टिंग की और इसे प्रमाणित किया है. अब भारतीय नौसेना इसका बड़ी संख्या में निर्माण कर सकती है.**

**नई दिल्ली:** भारतीय नौसेना द्वारा तैयार और डिजाइन की गई पर्सनल प्रोटेक्टिव इक्विपमेंट (पीपीई) किट को बड़े स्तर तैयार करने का सर्टिफिकेट मिल गया है. इसे कोविड-19 से सुरक्षा की स्थिति में इस्तेमाल किया जा सकता है. इस पीपीई को डीआरडीओ के दिल्ली स्थित नाभिकीय औषधि और संबद्ध विज्ञान संस्थानय(इन्मास) ने टेस्ट किया और प्रमाणित किया. पीपीई को परीक्षण के मानदंडों को पूरा करना जरूरी होता है. ये मानदंड भारतीय चिकित्सा अनुसंधान परिषद (आईसीएमआर) और स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार द्वारा निर्धारित किए जाते हैं.

इस पीपीई की लागत व्यावसायिक रूप से इस्तेमाल होने वाली पीपीई किट से बहुत ही कम है. इस पीपीई किटो को इनोवेशन सेल, इंस्टीट्यूट ऑफ नेवल मेडिसिन, मुंबई और नेवल डॉकयार्ड मुंबई द्वारा गठित एक टीम ने डिजाइन और निर्माण करने के लिए सहयोग किया। यह आईएसओ 16603 मानक के अनुसार न्यूनतम 3/6 और उससे अधिक का स्तर रखती है.

### पीपीई में सांस लेने की क्षमता

संस्थान द्वारा जारी विज्ञप्ति के मुताबिक, इस पीपीई की विशेषताएं इसकी सरल, नई और कम लागत वाला डिजाइन हैं. पीपीई को बनाने में फैब्रिक के इनोवेटिव विकल्प का उपयोग किया गया है. जोकि पीपीई में 'सांस लेने की क्षमता' और प्रतिरोधक क्षमता प्रदान करता है, जो उपयोगकर्ता के लिए आरामदायक और सुरक्षित है.

### चिकित्सा पेशेवरों के लिए एक जैव सूट (Bio Suit)

इस बीच, डीआरडीओ ने कोरोनावायरस बीमारी से लड़ने में मदद करने के लिए चिकित्सा पेशेवरों के लिए एक जैव सूट बनाया है. दिलचस्प बात यह है कि डीआरडीओ द्वारा बनाए गए जैव-सूट में एक अनूठी विशेषता है. डीआरडीओ का कहना है कि इसे पनडुब्बी अनुप्रयोगों में प्रयुक्त सीलेंट के आधार पर सीलिंग टेप के विकल्प के रूप में एक विशेष सीलेंट (पानी को रोकने वाला) से बनाया गया है.

<https://www.abplive.com/news/india/indian-navy-create-low-cost-ppe-drdo-inmas-test-and-certified-this-1391815>



Sat, 09 May 2020

## India wants mini/nano and combat drones developed locally for anti-terror operations in Kashmir

By Raunak Kunde

Defense Research and Development Organisation (DRDO) and other State-owned public sector companies have been asked to Ministry of Defence (MoD) to prepare a list of projects that can be shared with the private sector companies and the MSMEs in development of Mini/Nano and combat drones to give a massive push to the Make in India initiative as India looks to develop and work with Private sector companies to develop locally series of Mini/Nano and combat drones to be used for Anti-terror operations especially in the Kashmir Valley.

MoD is also looking to procure drones which can be used for surveillance in anti-terror operations in identifying where terrorists might be hiding before troops enter any building or house. Most of the casualties happen when troops enter houses that are suspected of hosting terrorists and are hiding when search operations are been carried out. we require special sensors and airborne thermal devices that can detect movement inside the house so that our forces don't enter blind and not have to face a volley of bullets fired by the terrorists said informed sources close to idrw.org.



The army is also looking at drones which can be used to neutralize terrorists when they are hiding in hard to get a place without risking casualties on the troops. Drones that can carry Hand grenade, explosives, or assault rifles have been inducted by many Army's around the world but no such drones have been actively used by India in Anti-Terror operations in Kashmir yet.

MOD is fully aware that the non-availability of critical drone systems has adversely affected the aerial surveillance capability of the Indian Army in Anti-terror operations, especially in the Kashmir Valley. Many of the casualties of the troops could be avoided if autonomous drones were used to neutralize terrorists in the valley and many local Private sector companies have been identified which have shown a lot of promising projects and worthy of leading or taking over from the Public sector companies most of the UAV and Drone projects.

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<https://idrw.org/india-wants-mini-nano-and-combat-drones-developed-locally-for-anti-terror-operations-in-kashmir/#more-227027>

Sat, 09 May 2020

## Defence Ministry signs pact worth Rs 1,200 crore with Tata Power to modernise 37 airfields

The Union Ministry of Defence on Friday (8 May) inked a deal with Tata Power SED worth Rs 1,200 crore to modernise the infrastructure at 37 airfields for the Indian Air Force (IAF), Indian Navy and Indian Coast Guard (ICG).

The proposal was approved by Defence Minister Rajnath Singh.

Modernisation of 37 airfield infrastructure is happening under Phase II of the programme. Under Phase I, 30 airfields were upgraded.

"The airfields modernised under Phase I have been of immense benefit to both military and civil users," the Defence Ministry said.

The project is a turnkey project that includes installation and commissioning of modern airfield equipment like Cat-II Instrument Landing System (ILS) and Cat II Air Field Lightning System (AFLS), etc.

The modern equipment around the airfield will also be directly connected to Air Traffic Control (ATC), thereby providing excellent control of the airfield systems to the air traffic controllers.

The up-gradation of navigational aids and infrastructure under this project would enhance the operational capability by facilitating air operations of military and civil aircraft even in poor visibility and adverse weather conditions while enhancing aerospace safety.

The contract will provide impetus to the Indian industry in the prevailing situation.

The project will give a boost to over 250 micro, small and medium enterprises which will be directly benefited from being involved in execution of various activities of this project.

This contract would aid in infusing much-needed capital into the market and boost employment generation in fields such as communications, avionics, information technology apart from civil and electrical equipment and construction.

*(This news has been published via Syndicate feed. Only the headline has been changed.)*

<https://swarajyamag.com/insta/defence-ministry-signs-pact-worth-rs-1200-crore-with-tata-power-to-modernise-37-airfields>



An IAF Antonov An-32B at the Leh Airbase. (Toprohan/Wikipedia)





*Sat, 09 May 2020*

## **Covid constraints on defence expenditure could help transform military culture**

The freezing of fresh capital acquisitions by the defence forces, delays in procurement and induction of existing orders, and austerity measures in the administrative domain, were expected. It is easy to approach this problem tactically by issuing directives and guidelines and then seeking periodic feedback from the military on the progress made, targets met, shortfalls and remedial measures instituted. This would be a myopic approach and at best result in short-term, tenure-based outcomes.

Instead, this should be seen as an opportunity to evolve a transformational culture in the Indian military, based on clear political guidelines driven by existing and futuristic capabilities, expected strategic outcomes and anticipated strategic challenges.

A comparison between the approaches taken by India's principal adversaries is instructive. Pakistan stagnates in an existential-threat-based and India-centric approach to national security. China's expansive global strategy and unbridled capability-based development surge have overcome the dangers of direct competition with the US. It has closed the gap through an "indirect approach to international security", which looks at building on strengths in areas such as cyberspace, non-contact warfare, economic and diplomatic coercion. Strategic guidelines for India's security managers must shift from a threat-based methodology to a multi-disciplinary capability and outcome-based orientation to fit with the nation's power aspirations.

There are five visible silos most critical to kick-start the transformation. The first is to accelerate the creation of indigenous defence capability. Doing this without brushing away the short and medium-term requirement of selective imports will be the key to a calibrated march to self-sufficiency. The next critical component is leadership. India's military leadership is very hierarchical and sequential in its approach. However, this same leadership has superb operational skills and possesses a quick understanding of technology, tactics, techniques and procedures. Consequently, strategic leaders need to be identified and their transition towards becoming more than mere executors of operational plans and campaigns needs to be enabled. Multi-disciplinary thinking, lateral assimilation and a world-view are among the specific skill-sets that need to be nurtured.

Training and education form the next two silos in the process of transformation. Let us take the developed Western model for example. Several military officers at the colonel level — fresh out of war colleges and the university environment where they spend a year of education (not training) — are posted at the Pentagon and NATO HQ. Here, they work alongside civilians, politicians, lawmakers, not forgetting their own joint leadership. In such an environment, it is not difficult to mark, train and recognise talent in ways that go beyond the mere rank structure. It is high time India goes down that road because even though economic globalisation may be on hold for a while post COVID-19, there is going to be a flattening of the world from a security perspective. There will be common threats that would need to be fought jointly by nations. The three pre-requisites in these silos will be an amalgam of service-centric and joint operations expertise, operational acumen in a global environment, and broad-based education that develops intellectual capital.

Training in the Indian military is top-notch and needs a little tweaking to help officers and men understand the rules of engagement in a Volatile, Uncertain, Complex and Ambiguous (VUCA) world. It is diversified education at all levels of leadership that is a weak area.

Some have suggested radical ways of selecting future chiefs, suggesting a “deep selection” and a four-year tenure based on several criteria that have been highlighted in this article. They have also highlighted the accompanying risks of such a move. Keeping that as an aspirational long-term outcome may be a good idea as the processes needed to incorporate such a radical change are either nascent or absent from the current system.

Finally, the silo of jointness and integration without losing identities and compromising competencies is an outcome that needs to be chased down with focus and determination. There will be pain and turfs will be trampled on, but with transformed and intellectually empowered leadership, no bridge will be too far to cross for the Indian military.

<https://idrw.org/covid-constraints-on-defence-expenditure-could-help-transform-military-culture/>

# ThePrint

Sat, 09 May 2020

## Army plans to reorganise training courses hit by pandemic, could shift many to next session

*The Army conducts close to 600 courses for its personnel over the training year that begins on 1 July and ends on 30 June the following year*

*By Amrita Nayak Dutta*

New Delhi: The Army has drawn up a fresh plan to reorganise all its training courses, a number of which have been cancelled due to the Covid-19 outbreak, ThePrint has learnt. The service conducts close to 600 courses for its personnel over a training year that begins on 1 July and ends on 30 June the following year.

While the bulk of the courses are in progress and will conclude in the latter half of the current training year, about 90 courses have been shifted to the next one, according to the fresh plan.

Moreover, around 180 courses, which are comparatively of lesser priority, stand cancelled for the current training year.

An Army source told ThePrint that the courses, which have been shifted to the next training year, may be conducted either as additional courses or fit into vacant slots that may be created to cater to the backlog.

“The decision on this would be taken in June when the new training calendar for 2020-2021 is being finalised,” the source said.

Sources added that training at the unit level, which includes firing, will continue as before but with social distancing and other Covid-19 precautions.

However, other training activities for soldiers, such as field firing that includes firing of heavier calibre weapons, and exercises with troops in select firing ranges across the country, have been cancelled for now and will resume once the Covid-19 situation returns to normal.

### **Training of fresh recruits to continue**

According to the new schedule being planned, a second source said, only the training of fresh recruits at all regimental centres will continue, while all other training conducted at these centres will be cancelled.

Additionally, fresh training with foreign armies and other courses in foreign countries have been suspended until 1 September.

A senior Army officer told ThePrint that training is one of the most essential parts of a soldier’s routine and will have to continue despite any other challenges.

“As regards to courses, while the duration would be reduced at times, there would be no compromise on the content as additional working hours would be squeezed out every day,” the officer said.

### **Passing Out Parades to be muted affairs**

As part of the fresh plans, Passing Out Parades at officers’ training establishments — considered a landmark event in the Army’s training calendar — are also set to be muted affairs this year with the pandemic affecting the training of all ranks of the service.

The details of the ceremony will be approved by the Army Training Command (ARTRAC).

The parades are major biannual events at all officers’ training establishments, and conducted at a large scale and are attended by thousands. The event marks the culmination of the cadets’ training and their foray into their journey as officers.

Officers get commissioned from Indian Military Academy, Dehradun, Officers’ Training Academy, Gaya, and Officers’ Training Academy, Chennai. The commissioning ceremony is marked by a Passing out Parade. Passing out Parades at IMA are held in June and December every year, while at OTA, Chennai it is held in March and September.

The event is also held at Cadet Training Wings in Pune, Mhow and Secunderabad.

However, there are no details available as of now, about the Passing out Parades at the National Defence Academy, which is a tri service institution.

<https://theprint.in/defence/army-plans-to-reorganise-training-courses-hit-by-pandemic-could-shift-many-to-next-session/416813/>



DefenceNews

Sat, 09 May 2020

## **Indian Army unhappy over quality of Ordnance-supplied arms**

Amid talk of greater indigenisation of weapons and ammunition, Indian Army is unhappy over the quality of ammunition provided by the state- owned Ordnance Factory Board (OFB), said sources.

Due to budget constraints imposed after coronavirus pandemic, there is talk of “self-reliance” and more “indigenisation” of weapons and ammunition to tide over the crisis.

However, sources in the Indian Army said that despite complains about the quality of ammunition provided by the Ordnance Factory Board (OFB) many times in past, there still has been no major improvement. “The issue of quality of ammunition provided by the Ordnance Factory Board again seems to be in the cold storage,” said sources.

Factories managed by the Ordnance Factory Board (OFB) are the main source of supply of ammunition to the Indian Army and the drop in quality of OFB products has a major bearing on war-waging potential of the country.

The sources said that the large quantum of ammunition supplied by Ordnance Factory Board to Indian Army has been found defective during shelf life.

According to an earlier report by the Indian Army, on an average there is an ammunition-related accident every 5.5 days or once a week.





It had said that there is a lack of ownership with respect to ammunition production and allied quality assurance and control. Rarely does production of ammunition stopped due to deficiency in material, process or quality assurance.

The report had said that regular accidents occur with 105mm Indian Field Gun, 105mm Light Field Gun, 130mm MA1 Medium Gun, 40mm L-70 Air Defence Guns and main guns T-72, T-90 and Arjun tanks. There have been isolated cases in 155mm Bofors guns too.

It had said that the increase in accidents in the recent past has resulted in the Indian Army having lost confidence in most of the types of ammunition being manufactured by OFB.

The Defence ministry has directed Defence Public Sector Undertaking Units (DPSUs) and Ordnance Factory Board (OFB) to prepare contingency plans for resumption of operations after the lifting of lockdown to compensate for the lost working time to the extent possible and ramp up production. Several units of OFB which are located in non-red zones have already started operations.

<https://www.defencenews.in/article/Indian-Army-unhappy-over-quality-of-Ordnance-supplied-arms-830509>

# The Tribune

Sat, 09 May 2020

## Rajnath Singh discusses bilateral security cooperation with Japan's Defence Minister

*Countries announced to conduct their first-ever joint exercise using fighter jets on Nov 30, 2019*

*By Ajay Banerjee*

New Delhi: Indian Defence Minister Rajnath Singh, on Friday, had a telephonic discussion with his Japanese counterpart Taro Kono on their commitment to take forward the initiatives of bilateral security cooperation under the framework of the India-Japan Special Strategic and Global Partnership.

The two Defence Ministers had discussions on their respective responses against the COVID-19 pandemic.

Rajnath Singh informed Kono Taro on India's contribution to international efforts against COVID-19 and discussed areas of mutual cooperation in the global fight against the pandemic.

On November 30, 2019, the first India-Japan 2+2 Foreign and Defence Ministerial Meeting was held in New Delhi, where the two sides announced a move to conduct their first-ever joint exercise using fighter jets.

The exercise will be in Japan, the two countries agreed to start coordination for the conduct of the exercise, which holds multiple strategic signals for the Indo-Pacific region.

In the past few years, India and Japan have been deepening military and strategic ties.

<https://www.tribuneindia.com/news/nation/rajnath-singh-discusses-bilateral-security-cooperation-with-japans-defence-minister-82193>



Sat, 09 May 2020

## China's unmanned spacecraft makes a successful return to Earth-racing ahead of India on the path to having a space station

By Prabhjote Gill

- *China's experimental spacecraft successfully landed back on Earth after orbiting the planet for 2 days and 20 hours.*
- *The unmanned charter was a test for human spaceflight for the country's plans to set up its own space station by 2022.*
- *The Indian Space Research Organisation (ISRO) has similar plans but a lot remains uncertain with the lockdown keeping the space agency's scientists at home.*

China's manned space program is well on its way to constructing a space station by 2022. Today (May 8), its next-gen spacecraft made a successful landing after orbiting the Earth for 2 days and 20 hours.

India also has similar plans of setting up a space station but its fate remains uncertain with the current coronavirus lockdown in effect.

China's capsule, which launched on May 6 aboard its brand new Long March-5B rocket, was confirmed to be in ideal condition even after a small 'anomaly' earlier during the test. The China Manned Space Agency (CMSA) said the cabin structure within the spacecraft was perfectly intact as well.

During its time in space, the spacecraft managed to complete a few experiments — like 3D printing — that will go a long way in helping China plan for its maiden human spaceflight.

The plan is to eventually send astronauts into space to set up a space station by 2022, followed by a trip to the Moon.

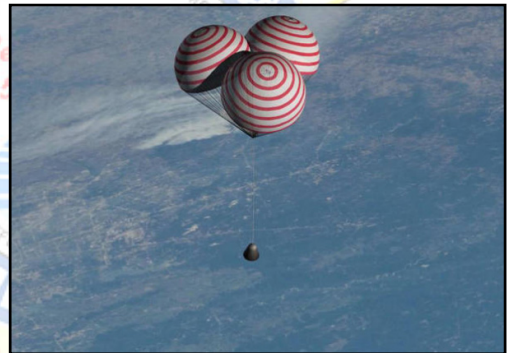
### India has similar plans, with a similar deadline

Indian Space Research Organisation (ISRO) announced that it has plans of setting up its own space station by 2022 so that it can conduct experiments in without the pressures of gravity. "It will be a smaller module [as compared to the International Space Station (ISS)], which would be mainly used to carry out microgravity experiments," said ISRO Chairman K. Sivan in June last year.

Gaganyaan, the plan for India to send astronauts into space, was scheduled to take flight in December next year. Unmanned missions, like the one that China just concluded, were scheduled for December 2020 and June 2021.

However, experts opine that there may be delays given the current lockdown which has restricted the space agency's scientists to their homes. Even Sivan said he doesn't know what the new timeline will look like unlike the lockdown comes to an end.

<https://www.businessinsider.in/science/space/news/china-ahead-of-india-in-human-spaceflight-after-successful-landing-on-spacecraft/articleshow/75621273.cms>



China's new spacecraft lands successfully after orbiting the Earth for 68 hoursChina Academy of Space Technology

## धरती से महज 14 हजार किमी दूर से निकल गया

### 2020JJ, अंतिम समय में मिली जानकारी

वाशिंगटन: आपने उल्कापिंडों के बारे में जरूर पढ़ा और सुना भी होगा। अक्सर ये भी सुना होगा कि कोई उल्कापिंड धरती के पास आ रहा है। लेकिन ऐसा हर बार नहीं होता है। ये ब्रह्मांड की बेहद अनोखी घटनाओं में से एक होती है। 6 मई को लेकिन ऐसी ही एक घटना हुई थी जब पृथ्वी से महज 14 हजार किलोमीटर से एक उल्कापिंड निकल गया। ये उल्कापिंड फोर्ड ट्रांजिट वैन के आकार से बड़ा था। आपको बता दें कि ये अब तक का छठा ऐसा उल्कापिंड था जो पृथ्वी के इतने पास से गुजरा है।



2020JJ को वैज्ञानिक तब देख सके जब ये धरती से करीब 14 हजार किमी दूर से गुजर रहा था। ये बेहद छोटा होने की वजह से पहचान में नहीं आ सका।

दरअसल ब्रह्मांड में हजारों की संख्या में छोटे और बड़े आकार के चट्टाननुमा पत्थर चक्कर लगाते हैं जिनको उल्का या इंग्लिश में meteor कहते हैं। कई बार इनका आकार काफी बड़ा भी होता है। कभी कभी ऐसा भी हुआ है कि जिसकी वजह से ये पृथ्वी की कक्षा में आ जाते हैं। यदि ऐसा होता है तो ये आगे के गोले के रूप में धरती पर बड़ी तेजी से गिरते हैं। हालांकि धरती पर आते आते इनके कई छोटे और बड़े टुकड़े हो जाते हैं लेकिन इसके बाद भी ये अपनी तेज गति और आवाज की वजह से काफी नुकसान पहुंचा सकते हैं। हालांकि पृथ्वी पर गिरनेवाले पिंडों की संख्या बेहद कम होती है।

वैज्ञानिक दृष्टिकोण से इनका महत्व इसलिए भी काफी है क्योंकि इनसे ही ब्रह्मांड के दूसरे ग्रहों के बारे में जानकारी मिलती है। उल्कापिंडों का मुख्य वर्गीकरण उनके संगठन के आधार पर किया जाता है। इनमें से कुछ तो लोहा, निकल या मिश्रधातुओं से बने होते हैं और कुछ सिलिकेट खनिजों से बने पत्थर सदृश होते हैं। जो उल्काएं लोहे, निकल या मिश्रधातुओं को 'धात्विक' और सिलिकेट खनिजों से बने पत्थर को 'आशिमक उल्कापिंड' कहते हैं।

जो उल्कापिंड धरती के इतने करीब से गुजर गया उसका नाम 2020JJ है। वैज्ञानिक मानते हैं कि ये खगोलिक मानकों के अनुसार यह बेहद छोटा था और इसलिए दूरबीन में नजर नहीं आया। वैज्ञानिक इसे तभी देख सके जब यह सीधे पृथ्वी के ऊपर आया। एरिजोना में स्थित माउंट लिमोन सर्वे से इसकी पहचान ठीक उस समय की गई जब यह पृथ्वी के ऊपर से निकल रहा था।

स्पेस साइंस राइटर डॉक्टर नतालिया स्टारकी के मुताबिक कम से कम एक किमी बड़े क्षुद्रग्रह को आसानी से देखा और पहचाना जा सकता है। लेकिन 2020JJ आकार में इससे छोटा था इसलिए इसको केवल तभी देखा जा सका जब ये पृथ्वी के ऊपर से गुजर रहा था। यह उल्कापिंड 1900 से लेकर अब तक पृथ्वी के सबसे नजदीक से गुजरे क्षुद्रग्रहों में छठवें स्थान पर था।

2004 के बाद से ही पृथ्वी के सबसे नजदीक से गुजरे 10 क्षुद्रग्रहों को अब तक रिकॉर्ड किया गया है। उच्च रिज्योल्यूशन टेलीस्कोप इमेजरी विकसित होने और खगोलिवदों की क्षमता में विस्तार होने के कारण



यह महत्वपूर्ण घटनाएं दर्ज की जा सकी हैं। पृथ्वी के काफी नजदीक से गुजरने के बाद भी पृथ्वी और उस क्षुद्रग्रह के बीच में काफी दूरी थी।

<https://www.jagran.com/world/america-2020-ji-astroid-fly-near-earth-scientist-watch-it-at-last-moment-jagran-special-20253432.html>



Sat, 09 May 2020

## IST Austria scientists demonstrate quantum radar prototype

*New detection technique based on quantum technology developed at IST Austria -- Study published in Science Advances*

Quantum entanglement is a physical phenomenon where two particles remain inter-connected, sharing physical traits regardless of how far apart they are from one another. Now, scientists from the research group of Professor Johannes Fink at the Institute of Science and Technology Austria (IST Austria) along with collaborators Stefano Pirandola from the Massachusetts Institute of Technology (MIT) and the University of York, UK, and David Vitali from the University of Camerino, Italy -- have demonstrated a new type of detection technology called 'microwave quantum illumination' that utilizes entangled microwave photons as a method of detection. The prototype, which is also known as a 'quantum radar', is able to detect objects in noisy thermal environments where classical radar systems often fail. The technology has potential applications for ultra-low power biomedical imaging and security scanners.

### Using quantum entanglement as a new form of detection

The working principles behind the device are simple: Instead of using conventional microwaves, the researchers entangle two groups of photons, which are called the 'signal' and 'idler' photons. The 'signal' photons are sent out towards the object of interest, whilst the 'idler' photons are measured in relative isolation, free from interference and noise. When the signal photons are reflected back, true entanglement between the signal and idler photons is lost, but a small amount of correlation survives, creating a signature or pattern that describes the existence or the absence of the target object--irrespective of the noise within the environment.

"What we have demonstrated is a proof of concept for Microwave Quantum Radar," says lead author and at the time of the research project postdoc in the Fink group Shabir Barzanjeh, whose previous research helped advance the theoretical notion behind quantum enhanced radar technology. "Using entanglement generated at a few thousandths of a degree above absolute zero (-273.14 °C), we have been able to detect low reflectivity objects at room-temperature."

### Quantum technology can outperform classical low-power radar

While quantum entanglement in itself is fragile in nature, the device has a few advantages over conventional classical radars. For instance, at low power levels, conventional radar systems typically suffer from poor sensitivity as they have trouble distinguishing the radiation reflected by the object from naturally occurring background radiation noise. Quantum illumination offers a solution to this problem as the similarities between the 'signal' and 'idler' photons -- generated by quantum entanglement -- makes it more effective to distinguish the signal photons (received from the object of interest) from the noise generated within the environment. Barzanjeh who is now an Assistant Professor at the University of Calgary on the prototype's performance: "The main message behind our research is that 'quantum radar' or 'quantum microwave illumination' is not only possible in theory but also in practice. When benchmarked against classical low-power detectors in the same conditions we already see, at very low-signal photon numbers, that quantum-enhanced detection can be superior."

## Prominent milestone towards advancing 80 year-old radar technology

Throughout history, basic science has been one of the key drivers of innovation, paradigm shift and technological breakthrough. Whilst still a proof of concept, the group's research has effectively demonstrated a new method of detection that, in some cases, may already be superior to classical radar.

"Throughout history, proof of concepts such as the one we have demonstrated here have often served as prominent milestones towards future technological advancements. It will be interesting to see the future implications of this research, particularly for short-range microwave sensors." says Barzanjeh.

Last author and group leader Professor Johannes Fink adds "This scientific result was only possible by bringing together theoretical and experimental physicists that are driven by the curiosity of how quantum mechanics can help to push the fundamental limits of sensing. But to show an advantage in practical situations we will also need the help of experienced electrical engineers and there still remains a lot of work to be done in order to make our result applicable to real-world detection tasks."

### About the Fink Group at IST Austria

Professor Johannes Fink leads a research group at IST Austria which is positioned between quantum optics and mesoscopic condensed matter physics. The group studies quantum physics in electrical, mechanical, and optical chip-based devices with the goal to advance and integrate quantum technology for simulation, communication, metrology, and sensing. More information about the group can be found here.

*(Disclaimer: AAAS and EurekAlert! are not responsible for the accuracy of news releases posted to EurekAlert! by contributing institutions or for the use of any information through the EurekAlert system.)*

[https://www.eurekalert.org/pub\\_releases/2020-05/iosa-ias050520.php](https://www.eurekalert.org/pub_releases/2020-05/iosa-ias050520.php)

## COVID-19 Research

NDTV COR NAVIRUS FULL COVERAGE

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के 50 वर्ष

Sat, 09 May 2020

## Research body CSIR to begin two drug trials for COVID-19

*Favipiravir is a drug that is commonly used in Japan, China and some other countries, to treat influenza that has a very broad spectrum.*

New Delhi: The Council for Scientific and Industrial Research (CSIR) has received approval from Drug Controller General of India (DGCI) for its two clinical trial drugs - "favipiravir" and "phytopharmaceutical" - to combat coronavirus.

Favipiravir is a drug that is commonly used in Japan, China and some other countries, to treat influenza that has a very broad spectrum.

The CSIR is exploring a native herb as a biological medicine or phytopharmaceutical, which is already being tested as medicine for dengue for its efficacy to combat COVID-19.

CSIR Director General Shekhar Mande said that they will start the clinical trial within a week.

"The CSIR is working with multiple renowned pharmaceutical companies and trying to see whether we can bring a certain solution to the market as an intervention against COVID-19. In this regard, few clinical trials have already been initiated in partnership with certain companies last

night. The DCGI has given us approval for clinical trials of two drugs so we will soon begin with it," he said.

Phytopharmaceutical is essentially a herbal medicine extracted from plants.

It is a cocktail of different compounds but has a biological origin from a plant. In the United States, the Food and Drug Administration (FDA) terms it botanical, however, in India the DCGI calls it phytopharmaceutical.

In May 2016, a renowned pharmaceutical company and International Centre for Genetic Engineering and Biotechnology (ICGEB), Delhi, had signed an agreement to develop a botanical drug for treatment against dengue.

"We are already testing the efficacy of this medicine against dengue and it is in the advanced stage in phase-II human trials. The mechanisms of treatment are similar," Mr Mande said.

Speaking about favipiravir, he said it is a safe drug and its trial is expected to be completed in about 1.5 months.

"If the tests are successful with the expected results, then this drug will be available soon at affordable prices. A big reason for this is that favipiravir is an old medicine the patent of which has now expired," he said.

*(Except for the headline, this story has not been edited by NDTV staff and is published from a syndicated feed.)*

<https://www.ndtv.com/india-news/coronavirus-treatment-research-body-csir-to-begin-two-drug-favipiravir-and-phytopharmaceutical-trials-for-covid-19-2225561>

**Scroll.in** *celebrating 10 years*

*Fri, 08 May 2020*

## **Covid-19: Scientific journals are now pumping out research faster than ever**

*While there is an urgent need for data, false information can be worse than none at all.*

*By Marcus Munafò*

New Delhi: The Council for Scientific and Industrial Research (CSIR) has received approval from Drug Controller General of India (DGCI) for its two clinical trial drugs - "favipiravir" and "phytopharmaceutical" - to combat coronavirus.

The evolving Covid-19 pandemic has created an urgent need for scientific evidence, and quickly. We need politicians to be able to make informed decisions, and we need to support the development of effective vaccines and treatments, as well as understanding the unfolding impact of the pandemic on society. The speed with which the global scientific community has risen to this sudden pressing need is remarkable.

But science is usually a slow-moving process – a series of steps towards a better understanding, rather than individual “eureka” moments. Getting to the truth is often not straightforward, and scrutinising claims and counter-claims is an inherent part of the scientific method. Individual studies need to be replicated to see if the original observations are robust, and often they turn out not to be.

But now we are seeing – necessarily and understandably – a rush of studies attempting to add to our modest knowledge of the SARS-CoV-2 virus, and provide answers to all of the other important questions emerging from the pandemic.

Some of these studies are conducted with limited resources, rather than specific funding for the purpose, although funders such as the Wellcome Trust and the UK Medical Research Council have moved fast to provide significant support for research activity in this area.



## **Rise of the preprint**

Scientific publishing is also changing. Usually, scientific research is peer-reviewed before it is accepted for publication in a journal. This means that typically two or three researchers with relevant expertise have reviewed and critiqued the work, and often recommended revisions or even further experiments. It is meant to ensure that published work meets a certain minimum quality standard, although it is certainly by no means perfect. Even though it is the established means of ensuring quality, weak work can slip through, and strong work can be unfairly criticised and delayed.

Now, we are increasingly seeing more results posted to preprint servers for more rapid dissemination. A preprint is effectively the version of a scientific article that has not yet been peer-reviewed. It is usually posted around the same time it is submitted to a journal for review.

Preprint servers have been around for a long time in some disciplines – notably mathematics and physics, where [arXiv](#) has been in use since 1991 – and have existed in other guises, for example as “working papers” in areas such as economics. But they have only become widespread in recent years; there are now multiple platforms supporting preprints across a range of different disciplines, including biomedicine, for example [bioRxiv](#) and [medRxiv](#).

Often the published version of a study – the one that has passed peer review – is little different from the preprint version. But sometimes changes are required, and often important ones, such as the inclusion of additional experiments or analyses that provide greater confidence in the overall conclusions of the work.

### **The good and the bad**

One of the advantages of preprints over traditional forms of peer review is that they allow more scrutiny from a far larger portion of the scientific community than is provided by the traditional peer review process. The danger comes when a preliminary report is interpreted as definitive.

The fact that preprints should be treated as preliminary is well known by researchers. However, in the current situation we are increasingly seeing results reported in preprints being picked up by the media. For example, a study of the prevalence of SARS-CoV-2 antibodies conducted in Santa Clara, California was reported by a number of outlets, including the Wall Street Journal, despite having been heavily criticised by some researchers.

This in itself is not entirely new, but we are seeing rapid growth in preprints as scientists attempt to put their findings in the public domain as quickly as possible – at the beginning of April 2020, around 17% of Covid-19 publications were preprints. This is coupled with a desire for equally rapid dissemination of apparently noteworthy new findings by the media. The overall sense is that the scientific process has been accelerated.

But is this entirely a good thing? There is a long-standing aphorism – originally from engineering but perhaps applicable here – fast, cheap, good; you can pick two. We all know from personal experience that when we rush mistakes are more likely to happen. This is simply human nature, and scientists, however well trained and well intentioned, are human too. The fundamentals of good design, careful conduct and thoughtful interpretation apply even when there is a pressing need for knowledge.

These different issues – research conducted quickly and disseminated via preprints rapidly, and the media reporting these findings equally rapidly – perhaps conspire to mean we are at risk of generating and communicating findings that are not robust. And we have already begun to see retractions of Covid-19 research.

### **Transparency is everything**

Work that is still at the preprint stage should be clearly reported as such by media outlets, and readers should treat the findings as preliminary. Perhaps more importantly, we all need to recognise that our knowledge will evolve, and no single study or finding will be definitive. Understanding Covid-19 is a team effort.

The current pandemic is unprecedented in recent history, and has demonstrated the strength of the global scientific community. Resources have been rapidly diverted towards understanding the

virus, modelling strategies to reduce its impact, developing vaccines and treatments, and more. Collaborations – both national and international – have emerged almost overnight, and preprint servers have experienced a surge of submissions. We are making progress, and at an extraordinary pace.

However, we also need to ensure that our desire for speed in the generation of knowledge is not at the expense of quality. Given the importance and the immediacy of the challenge we face, rigorous and high-quality research is more important than ever. Transparency will be critical. By making study protocols, materials, data and analysis plans available to researchers, work will be able to be scrutinised more closely, and any errors detected and corrected more rapidly. Indeed, the mere act of making our research transparent may encourage more error-checking before we release our work.

There is an urgent need for data and knowledge, but it is critically important that research is of high quality and that the knowledge generated is robust. False information is worse than no information at all.

[Marcus Munafo](#), Professor of Biological Psychology, University of Bristol.

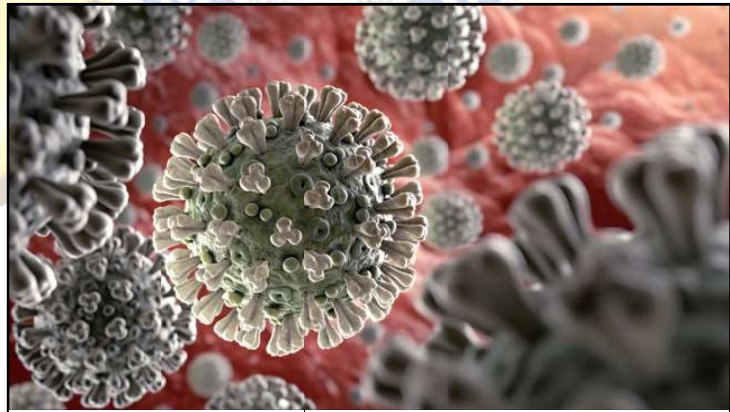
<https://scroll.in/article/961299/covid-19-scientific-journals-are-now-pumping-out-research-faster-than-ever>

DESIGN  **जागरण**

Sat, 09 May 2020

## वैक्सीन के प्रभाव को कम करने में सक्षम है कोरोना वायरस का जी-614 स्ट्रेन, यूरोप, यूएस में मचाई तबाही

नई दिल्ली: कोरोना वायरस के यूं तो पूरी दुनिया में तबाही मचा रखी है लेकिन यूरोप और अमेरिका इससे सबसे अधिक प्रभावित हैं। इन दोनों महाद्वीपों में कोरोना वायरस के मरीजों की संख्या 2965743 है जो पूरी दुनिया में मौजूद कुल मरीजों का करीब 60 फीसद से भी अधिक है। यहां पर हुई इतनी बड़ी तबाही को लेकर जो रिपोर्ट अब सामने आई है वह काफी चौंकाने वाली है। वैज्ञानिकों के अनुसार यूरोप और अमेरिका में कोविड-19 महामारी का कहर बरपाने वाला कोरोना वायरस का रूप सामान्य कहीं ज्यादा अलग और घातक है। इसके मुताबिक ब्रिटेन और न्यूयॉर्क में जो सबसे ज्यादा तबाही देखी गई है उसकी वजह कोरोना वायरस का स्ट्रेन जी-614 है।



शोध में कोरोना वायरस के ऐसे स्ट्रेन का पता चला है जो वैक्सीन के प्रभाव को खत्म या कम कर सकता है। इसकी वजह से सबसे अधिक प्रभावित यूरोप और अमेरिका हुआ है।

शोधकर्ताओं की मानें तो यह अन्य यूरोपीय देशों और अमेरिका के दूसरे भागों में पाए गए जी-614 स्ट्रेन से ज्यादा खतरनाक है। आपको बता दें कि ये रिपोर्ट रोगियों के नमूनों से लिए वायरस के अध्ययन के बाद अमेरिका और ब्रिटेन के शोधकर्ताओं ने तैयार की है। इसमें वैज्ञानिकों ने पाया कि चीन में महामारी फैलाने वाले वायरस की तुलना में ये स्ट्रेन अधिक संक्रामक या अधिक खतरनाक है। शोधकर्ताओं का ये भी कहना है कि ये नया स्ट्रेन प्रतिरक्षा प्रणाली या वैक्सीन से बचने के लिए अपना स्वरूप बदलने में सक्षम भी है। इसकी वजह से एक टीके का प्रभाव और प्राकृतिक प्रतिरक्षा की संभावना कम हो जाती है।

इसके अलावा चीन में कोरोना वायरस के स्ट्रेन को लेकर हुई एक रिसर्च में ये पाया गया है कि इसके 30 से अधिक स्ट्रेन हो सकते हैं। चीन में ये अध्ययन झोजियांग यूनिवर्सिटी में किया गया है। साउथ चाइना मॉर्निंग पोस्ट के मुताबिक इनमें से 19 स्ट्रेन पहली बार सामने आए हैं। इन स्ट्रेन की क्षमता भी अलग अलग है। कुछ में कोशिकाओं पर आक्रमण की क्षमता अधिक है, कुछ में तेजी से प्रसार की। इन सभी में अब तक का सबसे घातक रूप यूरोप और न्यूयॉर्क में देखा गया है।

वहीं एशिया की बात करें तो अधिकतर देशों में इसका प्रकोप कोरोना वायरस के दूसरे स्ट्रेन डी-614 से शुरू हुआ था। इसका प्रभाव चीन और सिंगापुर में देखा गया। वहीं कुछ जगहों पर मार्च के दौरान जी-614 स्ट्रेन का भी प्रभाव सामने आया है। शुरुआती दौर में ब्रिटेन में इसके बी-121 और ड-11 स्ट्रेन रहे थे। चीन के शोध में ये



कोरोना वायरस के दूसरे स्ट्रेन से अधिक खतरनाक है जी-614 अमेरिका और यूरोप में इसने ही मचाई है सबसे अधिक तबाही वैज्ञानिकों को अब तक ऐसे करीब 30 स्ट्रेन का चला है पता इनमें से 19 स्ट्रेन पहली बार आए हैं वैज्ञानिकों के सामने एशिया में कोरोना के डी-614 स्ट्रेन का चला है अब तक पता पूरी दुनिया के कोरोना मरीजों के मुकाबले यूरोप और अमेरिका में अकेले हैं करीब 60 फीसद मरीज

भी सामने आया है कि कुछ सप्ताह तक जी-614 ने डी-614 पर बढ़त बनाई। दुनियाभर के नमूनों और वुहान के मरीजों में डी-614 की मूल स्थिति में पाया गया है। नए स्ट्रेन जी-614 ने पहले यूरोप और उत्तरी अमेरिका में असर दिखाया। हालांकि यहां पर भी मार्च से पहले तक कोरोना वायरस के डी-614 रूप ने अपना प्रकोप दिखाया था लेकिन बाद में जी-614 ने यहां पर अधिक तबाही मचाई।

यूनिवर्सिटी ऑफ शेफील्ड, लॉस अलामोस नेशनल लेबोरेटरी और न्यू मैक्सिको में वैज्ञानिकों ने अपनी रिसर्च में पाया है कि कोरोना वायरस का ये स्ट्रेन जी-614 पहली बार फरवरी में जर्मनी में पाया गया था। इसमें कहा गया है कि ये स्ट्रेन वैक्सिन को बेअसर करने में सक्षम हैं। मार्च के दौरान ही वैज्ञानिकों को मरीजों में सार्स-सीओवी-2 के कम से कम एक दर्जन से अधिक स्ट्रेन मिले थे। गौरतलब है कि उत्तरी अमेरिका में जहां इससे 1411979 लोग संक्रमित हैं वहीं अब तक 85243 मरीजों की मौत भी हो चुकी है। वहीं यूरोप की बात करें तो यहां पर 1553764 लोग इससे संक्रमित हैं और अबतक 148470 मरीजों की मौत हो चुकी है।

<https://www.jagran.com/world/america-g614-strain-of-coronavirus-is-more-dangerous-than-other-jagran-special-20253123.html>