

Oct
2021

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

खंड : 46 अंक : 200 08 अक्टूबर 2021

Vol.: 46 Issue : 200 08 October 2021



रक्षा विज्ञान पुस्तकालय
Defence Science Library
रक्षा वैज्ञानिक सूचना एवं प्रलेखन केंद्र
Defence Scientific Information & Documentation Centre
मेटकॉफ हाउस, दिल्ली - 110 054
Metcalf House, Delhi - 110 054

CONTENTS

S. No.	TITLE	Page No.
DRDO News		1-25
DRDO Technology News		1-4
1.	Exclusive: DRDO is opening its doors to private players	1
2.	Air Force Day 2021: A Look at IAF's Mighty Fighter Jet Fleet- Rafale, Sukhoi and More	2
COVID 19: DRDO's Contribution		5-24
3.	PM dedicates to the nation PSA Oxygen Plants established under PM CARES	5
4.	प्रधानमंत्री ने पीएम केयर्स के तहत स्थापित पीएसए ऑक्सीजन संयंत्र राष्ट्र को समर्पित किए	7
5.	Text of PM's address at the dedication of PSA Oxygen Plants established under PM CARES to the Nation	10
6.	NTPC inaugurates PSA Oxygen Plants	15
7.	Shri Hardeep Singh Puri inaugurates 62 PSA Oxygen plants set up by Oil and Gas Companies	16
8.	Modi lauds India's fight against Covid, inaugurates 35 oxygen plants	17
9.	India's liquid medical oxygen capacity increased tenfold: Modi	18
10.	Modi launches oxygen plants at Madurai, Trichy, Tuticorin GHs	19
11.	पीएम मोदी ने देश को दी 35 आक्सीजन प्लांट की सौगात, ऋषिकेश में किया उद्घाटन	20
12.	Two oxygen generation plants commissioned at Wenlock	21
13.	UP deputy CM inaugurates oxygen plant at Cantonment Board hospital in Lucknow	22
14.	राज्यमंत्री ने नागरिक अस्पताल में किया ऑक्सीजन प्लांट का उद्घाटन	23
15.	ऑक्सीजन प्लांट का उद्घाटन: सांसद सीपी जोशी ने कहा-कोविड की दूसरी लहर खतरनाक थी, 1000 एलपीएम क्षमता वाले ऑक्सीजन प्लांट से होगा फायदा	24
DRDO on Twitter		25-25
Defence News		26-31
Defence Strategic: National/International		26-31
16.	Curtain Raiser: 6th edition of India - UK joint company level military training: Exercise AJEYA WARRIOR commences at Chaubatia (Uttarakhand)	26
17.	पूर्वावलोकन: भारत-यूके संयुक्त कंपनी स्तरीय सैन्य प्रशिक्षण का छठा संस्करण, अभ्यास अजेय वारियर चौबटिया (उत्तराखंड) में शुरू	27
18.	LUH military variant to make maiden test flight next August	28
19.	Great Journey - Indian Air Force: Touch the sky with glory	29
20.	Goa Shipyard Limited delivers the fourth Sankalp-class OPV to Indian Coast Guard	30
21.	GRSE to revamp dry docks at Khidderpore: Signs concession agreement with SMPK	31
Science & Technology News		32-39
22.	HAL delivers heaviest semi-cryogenic propellant tank to ISRO	32
23.	'Liquid' light shows social behaviour	33
24.	Team develops sensitive new way of detecting transistor defects	34
25.	Researchers observe laser-driven tin ejecta microjet interactions	36
COVID-19 Research News		38-39
26.	Explainer: What researchers say about the long-term effects of COVID-19	38

Exclusive: DRDO is opening its doors to private players

GOCO-model allows DRDO to delegate routine tasks, allowing it to focus on research

By Pradip R Sagar

India's premier defence research agency, DRDO, is opening its doors to private players by adopting the GOCO (Government-Owned Company Operated) model—where private industries will operate government-assets, sparing them of the need to invest in land, machinery or other support systems. Upon the direction of the Prime minister's Office, DRDO is opening the doors to its network of about 50 laboratories across the country. It is estimated that DRDO has over Rs 1 lakh crore worth of assets across the country.

"Through, this model, the DRDO is exploring [the] possibility to identify potential industry partners for its special facilities, infrastructures and related activities that can be operated by industry partner," stated an internal note of DRDO, addressed to all of its laboratories. The note included detailed guidelines for choosing industry partners for the GOCO model.

The move could spare DRDO from routine, mundane and specialised activities, which will be delegated to the industry partners.

"It will lead to mutual benefit by increasing the efficiency of DRDO in research and development and provide more conducive environment for defence industries with enriched experience," read the note. The move will boost competitiveness among the private entities and pave the way towards new technologies, it added.

This move can help keep DRDO's prime focus on research and development, whilst also giving it an important role in bringing up the capabilities of industries by partnering them in its programmes and projects.

Selected industry partners (under GOCO) will perform operation and maintenance of DRDO's facilities, plants, equipment and machinery. Any necessary knowledge transfer will be based on the project requirements.

"GOCO partner need not make investment in land, machinery and other support system," it clarified. The selected private industry partner will get enough independence in implementing the mission using their best practices.

The Modi government has taken several measures to boost the indigenous defence manufacturing sector, with initiatives like Aatma Nirbhar Bharat, which are aimed at improving self-reliance as well as accelerating India's defence exports. The Ministry of Defence (MoD) has set an ambitious defence exports target of Rs 35,000 crore by 2025.

The Army has already adopted the Government Owned Contractor Operated (GOCO) model for its base workshops and ordnance depots, in a bid to improve operational efficiency. This was following the recommendations of the Lt. Gen. DB Shekatkar (Retd.) committee to enhance combat capability and re-balance defence expenditure.

<https://www.theweek.in/news/india/2021/10/07/exclusive-drdo-is-opening-its-doors-to-private-players.html>

Air Force Day 2021: A Look at IAF's Mighty Fighter Jet Fleet- Rafale, Sukhoi and More

On Air Force Day 2021, here's a list of all the active fighter jets used by the Indian Air Force, from Sukhoi Su-30MKI to the Tejas LCA and now, the Rafale

By Arjit Garg

As today is the Indian Air Force Day, we take a throwback to the Independence Day of last year, in 2020, when the first batch of long-awaited five Rafale fighter jets arrived in India and was inducted at the Indian Air Force's Ambala airbase. The fighter jets, manufactured by France-based Dassault Aviation, are twin-engine multi-role fighter aircraft and are nuclear-capable and can engage in both air-to-air and air-to-ground attacks. With the arrival of the Rafale, the IAF's firepower increased multifold.

So as India celebrates Air Force Day, we look at all the active fighter jets used by the Indian Air Force, from Sukhoi Su-30MKI to the Tejas LCA and also, the Rafale.

Rafale

India had signed an inter-governmental agreement with France in September 2016 for procurement of 36 Rafale fighter jets at a cost of around Rs 58,000 crore. The aircraft is capable of carrying a range of potent weapons and missiles and the first squadron of the aircraft will be deployed at Ambala air force station, considered one of the most strategically located bases of the IAF. The Indo-Pak border is around 220 km from there. The second squadron of Rafale will be stationed at Hasimara base in West Bengal. The Rafale is a modern fighter jet known for its agility, speed, weapon holding capacity and attack capability. The Dassault Rafale has a delta wing design and is capable of g-forces as high as 11g (in case of emergency). The Rafale is available in both single and dual seating cabin (India ordered 28 single and 8 dual seater Rafale).

Mirage-2000

The Mirage-2000 is undoubtedly one of the Indian Air Force's (IAF) most versatile and deadliest aircraft and it was first commissioned in 1985. Soon after inducting the Mirage, IAF gave it the name – Vajra – meaning lightning thunderbolt in Sanskrit. The Mirage-2000 is developed by Dassault Aviation and took its first flight in 1978 and was inducted in the French Air Force in 1984. India placed an initial order of 36 single-seater Mirage-2000 and 4 twin-seater Mirage 2000 in 1982 as an answer to Pakistan buying the US-made F-16 fighter jets by Lockheed Martin. The Mirage-2000 played a decisive role in the 1999 war of Kargil and seeing the success of the jets, the government in India placed an additional order of 10 Mirage-2000 planes in 2004, taking the total tally to 50 jets.



Mirage 2000. (Image: IAF)

HAL Tejas LCA

India has long borrowed its fighter jets from countries like Russia, France and Britain under a license agreement to manufacture it locally by Hindustan Aeronautics Limited. However, back in

the 1980s the HAL started the Light Combat Aircraft (LCA) programme to replace the ageing Soviet sourced MiG-21. With India's former Prime Minister giving the LCA its name – Tejas – the 1st indigenously built fighter aircraft was inducted in the Indian Air Force with the IAF placing a 20 jet order initially and the 1st Tejas Squadron was formed in 2016 called the Flying Daggers. Till now IAF has placed an order of 40 Tejas Mk 1, including 32 single-seat aircraft and eight twin-seat trainers. IAF has also initiated procurement of a further 73 single-seat fighters in Mk 1A configuration.

Mikoyan MiG-21

The first supersonic jet aircraft in aviation history, the MiG 21 is one of the most known fighter jets on Earth. Having served 60 countries over a course of 60 years, the MiG 21 is still in service in many countries, including India. In 1961, IAF opted for the Mikoyan-Gurevich Design Bureau made MiG 21 and since then has bought more than 250 estimated units of this incredibly competent planes. While the 21s played a pivotal role in the 1971 India Pakistan War, they are currently being used only as Interceptors with a limited role as fighter jets and IAF will soon replace the remaining units of the MiG21 Bison with the Tejas LCA. The MiG 21 has a single-seater cockpit with a maximum speed of 1.05 mach (1300 kmph).



MiG 21. (Image: IAF)

The Sukhoi Su-30MKI is the most advanced fighter jet in operation with the Indian Air Force and is the primary air to air and air to ground strike machine. Also known as Flanker (NATO), the Su-30 MKI is built in India by HAL under a license agreement with Russia's Sukhoi. The Su-30MKI is exclusively used by India and there's an estimate that IAF has 290 operational units of 30MKI till now. The first unit was inducted in 2002. The Sukhoi Su-30MKI has a top speed of Mach 2 (2120 kmph) and has a maximum takeoff weight of 38,800 kg. The jet can carry a wide range of equipment from radars to missiles, bombs and event rockets.

Sukhoi Su-30MKI

The Sukhoi Su-30MKI is the most advanced fighter jet in operation with the Indian Air Force and is the primary air to air and air to ground strike machine. Also known as Flanker (NATO), the Su-30 MKI is built in India by HAL under a license agreement with Russia's Sukhoi. The Su-30MKI is exclusively used by India and there's an estimate that IAF has 290 operational units of 30MKI till now. The first unit was inducted in 2002. The Sukhoi Su-30MKI has a top speed of Mach 2 (2120 kmph) and has a maximum takeoff weight of 38,800 kg. The jet can carry a wide range of equipment from radars to missiles, bombs and event rockets.

Mikoyan MiG-27

The MiG 27 is again Soviet sourced ground-attack aircraft designed by Mikoyan-Gurevich Design Bureau from the Soviet Union and manufactured by HAL under a license agreement. The MiG27 is known as 'Bahadur' (meaning Valiant in English) in India and the IAF retired the last 27 ML squadron in 2017. India is only among a handful of countries who still operates the updated MiG-27 UPG ground attack aircraft. The 27s are based on the MiG23 with a redesigned nose and flies low altitude.



MiG 27. (Image: IAF)

SEPECAT Jaguar

The SEPECAT Jaguar is a fighter jet developed together by British Royal Air Force and French Air Force. Only the Indian Air Force is currently using the upgraded Jaguar in active duty. The SEPECAT Jaguar is known as Shamsheer and serves IAF as primary ground attack aircraft. Indian Jaguar is quite different from the RAF's Jaguar and are built locally by HAL under a license agreement. IAF recently upgraded its entire fleet of Jaguars by adding Avionics support. The only problem with the Jaguar is its inability to fly high altitude with heavy load on board.

Mikoyan MiG-29

Last on our list is another Soviet Mikoyan-Gurevich Design Bureau produced MiG called the MiG 29. Introduced in the 1970s to counter U.S. F-Series planes like F-15 and F-16 the MiG29 is known as Baaz (Hindi for Hawk) and forms the second line of defence after the Sukhoi Su-30MKI. The MiG-29 is exported to more than 30 nations, India being the first and one of the largest exporters of this jet. The IAF currently uses the upgraded MiG-29 UPG, the most advanced MiG-29 variant ever. The MiG29 were used extensively during the Kargil War by the Indian Air Force to provide escort for Mirage-2000 attacking targets with laser-guided bombs.

Jaguar (SHAMSHER)

Origin : SEPECAT, U.K / France
Hindustan Aeronautics Limited, India

Type : Ground attack fighter, maritime role

Power Plant : Two Rolls Royce/Turbomeca Adour MK 811 turbo fan jet of 3740 kg (8400 lb thrust) with after burning.

ROLE

Aircraft will be Firing
3 x 1000 lbs RTU
3 x 1000 lbs NTU

Armament : Two 30 mm Aden canons plus two R 550 Magic CCMS (overwing) Maximum external stores loading of 4750kg (10,500 lb.) Cluster bombs and 68 mm rocket pods

Max Speed : 1350 km/hr (840 mph) or mach 1.1 (Sea Level)
1700 km/hr (1046 mph) or mach 1.6 at 11,000 m (36,000 ft)

Combat Radius : 575 km (357 mls) Lo-Lo-Lo

Vayu Shakti 2019

SEPECAT Jaguar. (Image IAF)

MiG - 29

Origin : Mikoyan Aviation Scientific Industrial Complex, Russia

Type : Air superiority fighter

Power Plant : Two Tumansky RD-33 turbofans of 8300 kg (18,300 lb) reheat thrust each

ROLE

Aircraft will be Executing
Super Sonic Run &
Drop 2 x 500 kg

Armament : Air-to-Air, Air-to-Ground and Anti-Shipping Missiles,

Max take off wt : 18,480 kg (40,780 lb)

Max Speed : 2465 km/hr (1530 mph) at 11,000 m (36,000 ft) or Mach 2.35

Initial Climb Rate : 330 m/sec. (64,960 ft/min)

Service Ceiling : 17,000 m (55,775 ft)

Vayu Shakti 2019

MiG 29. (Image: IAF)

<https://www.news18.com/news/auto/tvs-jupiter-125-scooter-first-ride-review-a-new-challenger-to-the-kings-4295456.html>

COVID 19: DRDO's Contribution



Press Information Bureau
Government of India
Prime Minister's Office

Thu, 07 Oct 2021 12:42PM

PM dedicates to the nation PSA Oxygen Plants established under PM CARES

PM dedicates 35 PSA Oxygen Plants across 35 States and UTs

PSA Oxygen Plants now commissioned in all districts of the country

Expresses gratitude to the people of the country and Uttarakhand as he enters the 21st year of unbroken journey as head of the government

“My relation with the land of Uttarakhand is not only of heart but also of action, not only of essence but also of element.”

“Facilities India prepared in such a short timespan to fight the Corona pandemic, shows the capability of our country. Network of about 3000 testing labs was created from just 1 testing lab, before the pandemic”

“As the demand increased, India increased the production of medical oxygen by more than 10 times”

“Very soon India will cross the 100 crore mark in vaccination”

“Now the government does not wait for the citizens to come to it with their problems and then take action. This misconception is being removed from the government mindset and system. Now the government goes to the citizens”.

“Till 6-7 years ago, only a few states had the facility of AIIMS, today work is being done to take AIIMS to every state”

“It is also the goal of the government that there must be at least one medical college in every district of the country”

“Within just 2 years, about 6 lakh houses in the state have got water connections. From 1,30,000 Uttarakhand households in 2019, now 7,10,000 houses of Uttarakhand are getting piped water”

“The government is very serious about the interests of every soldier, every ex-serviceman. Our government fulfilled the 40 years old demand of our brothers from the armed forces by implementing One Rank One Pension”

The Prime Minister, Shri Narendra Modi, dedicated 35 Pressure Swing Adsorption (PSA) Oxygen Plants established under PM CARES, across 35 States and Union Territories, in an event held at AIIMS Rishikesh, Uttarakhand today. With this, all districts of the country will now have

commissioned PSA Oxygen Plants. Union Ministers, Governor, Chief Minister of Uttarakhand, State Ministers and healthcare professionals were present on the occasion.

Addressing the gathering, the Prime Minister noted the beginning of the holy festival of Navratri from today. He said Maa Shailputri is worshipped on the first day of Navratri. He remarked that Shailputri is the daughter of Himalaya. "On this day I am here, coming here to bow to this soil, saluting this land of Himalayas, what can be a greater blessing in life than this," said the Prime Minister. He also congratulated the state for splendid performance in the Olympics and Paralympics. The Prime Minister stressed that his relationship network with the land of Uttarakhand is not only of heart but also of action, not only of essence but also of element.

Continuing with the significance that today's date holds for him, the Prime Minister recalled that on this day 20 years ago, he got a new responsibility to serve the public. He added that his journey of serving the people, living among the people was going on for many decades, but 20 years ago today, he got a new responsibility as the Chief Minister of Gujarat. He also noted that the beginning of this journey coincided with the formation of the Uttarakhand state as he took over as the Gujarat Chief Minister a few months after that. He said he never imagined that he would, with the blessings of the people, reach the position of the Prime Minister. The Prime Minister expressed his gratitude to the people of the country and Uttarakhand as he entered the 21st year of this unbroken journey as head of the government.

Shri Modi expressed happiness that from the land where life-giving forces like Yoga and Ayurveda gained strength, today, oxygen plants are being dedicated. The Prime Minister said the facilities India prepared in such a short timespan to fight the Corona pandemic, shows the capability of our country. Network of about 3000 testing labs were created from just 1 testing lab, before the pandemic. India has transformed from being an importer to an exporter of masks and kits. Facilities of new ventilators were made available even in remote areas of the country. India has made rapid and large-scale manufacturing of Made in India Corona Vaccine. India has implemented the world's largest and fastest vaccination campaign. The Prime Minister said what India has done is a symbol of our determination, our service and our solidarity.

The Prime Minister said in normal days, India used to produce 900 metric tons of liquid medical oxygen a day. As the demand increased, India increased the production of medical oxygen by more than 10 times. He added that this was an unimaginable goal for any country in the world, but India has achieved it.

The Prime Minister remarked that it is a matter of pride for every Indian that 93 crore doses of corona vaccine have been administered. Very soon India will cross the 100 crore mark. He said India has shown the way to the whole world by building the Cowin platform that shows how vaccination is done on such a large scale.

The Prime Minister said now the government does not wait for the citizens to come to it with their problems and then take any action. He said that this misconception is being removed from the government mindset and system. Now the government goes to the citizens.

The Prime Minister noted that till 6-7 years ago, only a few states had the facility of AIIMS, today work is being done to take AIIMS to every state. He said we are moving fast from 6 AIIMS to build a strong network of 22 AIIMS. It is also the goal of the government that there must be at least one medical college in every district of the country. He recalled that former Prime Minister Shri Atal Bihari Vajpayee had fulfilled the dream of the creation of Uttarakhand. Shri Atal Bihari Vajpayee believed that connectivity is directly related to development. Due to his inspiration, today work is being done for improving connectivity infrastructure in the country at unprecedented speed and scale, the Prime Minister said.

The Prime Minister said before the launch of the Jal Jeevan Mission in 2019, only 1,30,000 households in Uttarakhand had access to tap water. Today piped drinking water has started reaching more than 7,10,000 houses of Uttarakhand. That is, within just 2 years, about 6 lakh houses in the state have got water connections. The Prime Minister informed that the government is also working very seriously for the interests of every soldier, every ex-serviceman. He added that it

is our government that fulfilled the 40 years old demand of our brothers from the armed forces by implementing One Rank One Pension.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1761697>



पत्र सूचना कार्यालय
भारत सरकार

प्रधानमंत्री कार्यालय

Thu, 07 Oct 2021 12:42PM

प्रधानमंत्री ने पीएम केयर्स के तहत स्थापित पीएसए ऑक्सीजन संयंत्र राष्ट्र को समर्पित किए

प्रधानमंत्री ने 35 राज्यों और केंद्र शासित प्रदेशों के लिए 35 पीएसए ऑक्सीजन संयंत्र समर्पित किए

पीएसए ऑक्सीजन संयंत्र, अब देश के सभी जिलों में चालू हो गए हैं

शासन-प्रमुख के रूप में मेरी अखंड यात्रा के 21वें वर्ष में प्रवेश करने पर मैं देश और उत्तराखंड के लोगों का आभार व्यक्त करता हूँ

"उत्तराखंड की भूमि से मेरा सम्बन्ध केवल हृदय का ही नहीं कर्म का भी है, सार का ही नहीं, तत्व का भी है।"

"कोरोना से लड़ाई के लिए इतने कम समय में भारत ने जो सुविधाएं तैयार कीं, वो हमारे देश के सामर्थ्य को दिखाता है, महामारी से पहले सिर्फ 1 टेस्टिंग लैब से करीब 3 हजार टेस्टिंग लैब्स के नेटवर्क का निर्माण किया गया"

"जैसे-जैसे मांग बढ़ी, भारत ने मेडिकल ऑक्सीजन के उत्पादन में 10 गुनी से अधिक की वृद्धि की"

"बहुत जल्द भारत टीकाकरण में 100 करोड़ का आंकड़ा पार कर लेगा"

"आज सरकार इस बात का इंतज़ार नहीं करती कि नागरिक उसके पास अपनी समस्याएं लेकर आएंगे तब कोई कदम उठाएंगे, सरकारी माइंडसेट और सिस्टम से इस भांति को हम बाहर निकाल रहे हैं, अब सरकार नागरिक के पास जाती है"

"6-7 साल पहले तक सिर्फ कुछ राज्यों तक ही एम्स की सुविधा थी, आज हर राज्य तक एम्स पहुंचाने के लिए काम हो रहा है"

"सरकार का ये भी लक्ष्य है कि देश के हर जिले में कम से कम एक मेडिकल कॉलेज जरूर हो"

“सिर्फ 2 वर्ष के भीतर राज्य के करीब-करीब 6 लाख घरों को पानी का कनेक्शन मिला है, 2019 में उत्तराखंड के 1,30,000 घरों से बढ़कर अब राज्य के 7,10,000 घरों को पाइप से पानी मिल रहा है”

“हमारी सरकार, हर फौजी, हर पूर्व फौजी के हितों को लेकर भी पूरी गंभीर है, ये हमारी ही सरकार है जिसने वन रैंक वन पेंशन को लागू करके अपने फौजी भाइयों की 40 साल पुरानी मांग पूरी की”

प्रधानमंत्री श्री नरेन्द्र मोदी ने आज एम्स ऋषिकेश, उत्तराखंड में आयोजित एक कार्यक्रम में 35 राज्यों और केंद्र शासित प्रदेशों में पीएम केयर्स के तहत स्थापित 35 प्रेशर स्विंग एडॉप्शन (पीएसए) ऑक्सीजन संयंत्र राष्ट्र को समर्पित किए। इसके साथ ही देश के सभी जिलों को अब पीएसए ऑक्सीजन संयंत्र, जो संचालन में हैं, उनकी सुविधा मिल जाएगी। इस अवसर पर केंद्रीय मंत्री, उत्तराखंड के राज्यपाल, मुख्यमंत्री, राज्य के मंत्री और स्वास्थ्य विशेषज्ञ उपस्थित थे।

सभा को संबोधित करते हुए, प्रधानमंत्री ने आज से नवरात्रि के पवित्र त्योहार के शुरू होने का उल्लेख किया। उन्होंने कहा कि नवरात्रि के पहले दिन मां शैलपुत्री की पूजा होती है और मां शैलपुत्री, हिमालय पुत्री हैं। प्रधानमंत्री ने कहा, “आज के दिन मेरा यहां होना, यहां आकर इस मिट्टी को प्रणाम करना, हिमालय की इस धरती को प्रणाम करना, इससे बड़ा जीवन में कौन सा धन्य भाव हो सकता है?” उन्होंने ओलंपिक और पैरालंपिक में शानदार प्रदर्शन के लिए राज्य को बधाई दी। प्रधानमंत्री ने जोर देते हुए कहा कि उत्तराखंड की भूमि से मेरा सम्बन्ध केवल हृदय का ही नहीं कर्म का भी है, सार का ही नहीं, तत्व का भी है।

प्रधानमंत्री ने आज के दिन को खुद के लिए महत्वपूर्ण होने के मद्देनजर याद करते हुए कहा कि 20 वर्ष पहले आज ही के दिन, उन्हें जनता की सेवा करने का एक नया दायित्व मिला था। उन्होंने कहा कि लोगों के बीच रहकर, लोगों की सेवा करने की मेरी यात्रा तो कई दशक पहले से चल रही थी, लेकिन आज से 20 वर्ष पूर्व, गुजरात के मुख्यमंत्री के रूप में उन्हें नई जिम्मेदारी मिली थी। उन्होंने यह भी जिक्र किया कि उनकी यात्रा की शुरुआत उत्तराखंड राज्य की स्थापना के साथ हुई, जब उत्तराखंड बनने के कुछ महीनों बाद उन्होंने गुजरात के मुख्यमंत्री का पद संभाला था। उन्होंने कहा कि उन्होंने कभी यह कल्पना नहीं की थी कि जनता के आशीर्वाद से वे प्रधानमंत्री बन जायेंगे। प्रधानमंत्री ने देशवासियों और उत्तराखंड के लोगों के प्रति कृतज्ञता व्यक्त की कि शासन-प्रमुख के रूप में उनकी अनवरत यात्रा 21वें वर्ष में प्रवेश कर रही है।

श्री मोदी ने प्रसन्नता व्यक्त की कि जिस भूमि से जीवनदायनी योग और आयुर्वेद का उदय हुआ, वहीं आज ऑक्सीजन संयंत्रों का लोकार्पण किया जा रहा है। प्रधानमंत्री ने कहा कि कोविड महामारी से लड़ने में भारत ने इतने कम समय में जो सुविधाएं तैयार कीं, वह हमारे देश के सामर्थ्य को दिखाता है। सिर्फ एक टेस्टिंग लैब से करीब तीन हजार टेस्टिंग लैब का नेटवर्क तैयार हो गया। मास्क और किट्स के आयातक से निर्यातक बनने का सफर भारत ने पूरा किया। देश के दूर-दराज इलाकों में भी नये वेंटिलेटर्स की सुविधायें उपलब्ध कराई गईं। भारत में मेड इन इंडिया वैक्सीन का तेजी से और बड़ी मात्रा में निर्माण हुआ। भारत ने दुनिया का सबसे बड़ा और सबसे तेज टीकाकरण अभियान चलाया। प्रधानमंत्री ने कहा कि भारत ने जो कर दिखाया, वह हमारी संकल्पशक्ति, हमारे सेवाभाव, हमारी एकजुटता का प्रतीक है।

प्रधानमंत्री ने कहा कि सामान्य दिनों में भारत एक दिन में 900 मीट्रिक टन तरल मेडिकल ऑक्सीजन का उत्पादन करता था। मांग बढ़ने के साथ भारत ने मेडिकल ऑक्सीजन का उत्पादन दस गुना से ज्यादा तक बढ़ा दिया। उन्होंने कहा कि यह दुनिया के किसी भी देश के लिये अकल्पनीय लक्ष्य था, लेकिन भारत ने इसे हासिल कर लिया।

प्रधानमंत्री ने कहा कि यह हर भारतवासी के लिये गर्व की बात है कि कोरोना वैक्सीन की 93 करोड़ डोज लगाई जा चुकी है। बहुत जल्द भारत 100 करोड़ का आंकड़ा पार कर जायेगा। उन्होंने कहा कि भारत ने कोविन प्लेटफार्म का निर्माण करके पूरी दुनिया को राह दिखाई कि इतने बड़े पैमाने पर वैक्सीनेशन कैसे किया जाता है।

प्रधानमंत्री ने कहा कि आज सरकार इस बात का इंतजार नहीं करती कि नागरिक उसके पास अपनी समस्याएं लेकर आयेंगे, तब कोई कदम उठायेंगे। उन्होंने कहा कि सरकारी माइंडसेट और सिस्टम से इस भ्रांति को हम बाहर निकाल रहे हैं। अब सरकार नागरिकों के पास जाती है।

प्रधानमंत्री ने कहा कि छह-सात साल पहले तक सिर्फ कुछ राज्यों तक ही एम्स की सुविधा थी, आज हर राज्य तक एम्स पहुंचाने के लिये काम हो रहा है। उन्होंने कहा कि छह एम्स से आगे बढ़कर 22 एम्स का सशक्त नेटवर्क बनाने की तरफ हम तेजी से आगे बढ़ रहे हैं। सरकार का यह लक्ष्य है कि देश के हर जिले में कम से कम एक मेडिकल कॉलेज जरूर हो। उन्होंने स्मरण किया कि उत्तराखंड के निर्माण का सपना पूर्व प्रधानमंत्री श्री अटल बिहारी वाजपेयी ने पूरा किया था। श्री अटल बिहारी वाजपेयी मानते थे कि कनेक्टिविटी का सीधा सम्बन्ध विकास से है। प्रधानमंत्री ने कहा कि उन्हीं की प्रेरणा से आज देश में कनेक्टिविटी की अवसंरचना में अभूतपूर्व तेजी और बड़े पैमाने पर काम हो रहा है।

प्रधानमंत्री ने कहा कि 2019 में जल जीवन मिशन शुरू होने से पहले, उत्तराखंड के सिर्फ एक लाख 30 हजार घरों में ही नल से पानी पहुंचता था। आज उत्तराखंड के सात लाख 10 हजार से ज्यादा घरों में नल से पानी पहुंचने लगा है, यानी सिर्फ दो वर्ष के भीतर राज्य के करीब-करीब छह लाख घरों को पानी का कनेक्शन मिला है। प्रधानमंत्री ने बताया कि सरकार हर फौजी, हर पूर्व फौजी के हितों को लेकर भी पूरी गंभीरता से काम कर रही है। उन्होंने कहा कि यह हमारी सरकार है, जिसने 'वन रैंक-वन पेंशन' को लागू करके अपने फौजी भाइयों की 40 साल पुरानी मांग पूरी की।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1761771>



Thu, 07 Oct 2021 3:04PM

Text of PM's address at the dedication of PSA Oxygen Plants established under PM CARES to the Nation

भारत माता की जय, भारत माता की जय, उत्तराखंड के राज्यपाल लेफ्टिनेंट जनरल सेवानिवृत्त गुरमीत सिंह जी, युवा, ऊर्जावान और उत्साही मुख्यमंत्री मेरे मित्र श्री पुष्कर सिंह धामी जी, केंद्रीय मंत्रिमंडल के मेरे सहयोगी श्री मनसुख मांडविया जी, श्री अजय भट्ट जी, उत्तराखंड विधानसभा के स्पीकर श्री प्रेम चंद अग्रवाल जी, उत्तराखंड सरकार में मंत्री और आज उनका जन्मदिन भी है, डॉक्टर धन सिंह रावत जी, उनको जन्मदिन की बहुत - बहुत बधाई। देश के अनेक स्थानों से जुड़े राज्यों के मुख्य मंत्रीगण, लेफ्टिनेंट गवर्नर्स, राज्यों के अन्य मंत्रिगण, सांसद और विधायक गण और मेरे प्यारे भाइयों और बहनों !!

ये देवभूमि ऋषियों की तपोस्थली रही है। योगनगरी के रूप में ये विश्व के लोगों को आकर्षित करती रही है। मां गंगा के समीप, हम सभी को उनका आशीर्वाद मिल रहा है। आज से नवरात्र का पावन पर्व भी शुरू हो रहा है। आज प्रथम दिन मां शैलपुत्री की पूजा होती है। मां शैलपुत्री, हिमालय पुत्री हैं। और आज के दिन मेरा यहां होना, यहां आकर इस मिट्टी को प्रणाम करना, हिमालय की इस धरती को प्रणाम करना, इससे बड़ा जीवन में कौन सा धन्य भाव हो सकता है। और मैं आज जो उत्तराखंड आया हूं तो एक विशेष रूप से भी बधाई देना चाहता हूं। क्योंकि इस बार टोक्यो ऑलंपिक में ये देवभूमि ने भी अपना झंडा गाड़ दिया है और इसलिए आप सब अभिनंदन के अधिकारी हैं। उत्तराखंड की दिव्यधरा ने मुझे जैसे अनेक लोगों के जीवन की धारा को बदलने में बड़ी भूमिका निभाई है। ये भूमि इसलिए मेरे लिए महत्वपूर्ण है। इस भूमि से मेरा नाता मर्म का भी है, कर्म का भी है, सत्व का भी है, तत्व का भी है।

साथियों,

जैसा अभी मुख्यमंत्री जी ने याद दिलाया आज के ही दिन 20 साल पहले मुझे जनता की सेवा का एक नया दायित्व मिला था। लोगों के बीच रहकर लोगों की सेवा करने की मेरी यात्रा तो कई दशक पहले से चल रही थी। लेकिन आज से 20 वर्ष पूर्व गुजरात के मुख्यमंत्री के रूप में मुझे नई जिम्मेदारी मिली थी। वैसे ये भी एक संयोग है कि उत्तराखंड का गठन साल 2000 में हुआ, और मेरी यात्रा इसके कुछ ही महीनों बाद, साल 2001 में शुरू हुई।

साथियों,

सरकार के मुखिया के तौर पर पहले मुख्यमंत्री और फिर देश के लोगों के आशीर्वाद से देश के प्रधानमंत्री पद पर पहुंचना, इसकी कल्पना मैंने कभी नहीं की थी। 20 वर्ष की ये अखंड यात्रा, आज अपने 21वें वर्ष में प्रवेश कर रही है। और ऐसे महत्वपूर्ण वर्ष में, जिस धरती ने मुझे निरंतर अपना स्नेह दिया है, अपनत्व दिया है, वहां आना, मैं अपना बहुत बड़ा सौभाग्य समझता हूं। हिमालय की ये तपोभूमि, जो तप और त्याग का मार्ग दिखाती है, उस भूमि पर आकर, कोटि-कोटि देशवासियों की सेवा का मेरा संकल्प और दृढ़ हुआ है, और मजबूत हुआ है। यहां आकर एक नई ऊर्जा मुझे मिलती है।

भाइयों और बहनों,

योग और आयुर्वेद की शक्ति से जिस क्षेत्र ने जीवन को आरोग्य बनाने का समाधान दिया है, वहीं से आज देश भर में अनेक नए ऑक्सीजन प्लांट्स का लोकार्पण हुआ है। ये देश के अलग-अलग राज्यों में ऑक्सीजन प्लांट्स की नई सुविधा के लिए मैं आप सभी को, देशवासियों को बहुत-बहुत बधाई देता हूं।

साथियों,

सौ साल के इस सबसे बड़े संकट का सामना हम भारतीय जिस बहादुरी से कर रहे हैं, ये दुनिया बहुत बारीकी से देख रही है। कोरोना से लड़ाई के लिए इतने कम समय में भारत ने जो सुविधाएं तैयार कीं, वो हमारे देश के सामर्थ्य को दिखाता है। सिर्फ एक टेस्टिंग लैब से करीब 3 हजार टेस्टिंग लैब्स का नेटवर्क बनना, मास्क और किट्स के आयात से प्रारंभ हमारी जिंदगी आज निर्यातक बनने का सफर तेजी से पार कर रही है। देश के दूर-दराज वाले इलाकों में भी नए वेंटिलेटर्स की सुविधाएं, मेड इन इंडिया कोरोना वैक्सीन का तेजी से और बड़ी मात्रा में निर्माण, दुनिया का सबसे बड़ा और सबसे तेज़ टीकाकरण अभियान भारत ने जो कर दिखाया है, वो हमारी संकल्प-शक्ति, हमारे सेवाभाव, हमारी एकजुटता का प्रतीक है।

भाइयों और बहनो,

भारत की कोरोना से लड़ाई के लिए, एक बड़ी चुनौती हमारी जनसंख्या तो थी ही, भारत का विविध भूगोल भी बड़ी चुनौती रहा है। ऑक्सीजन की सप्लाई से लेकर वैक्सीन तक, ये दोनों चुनौतियां देश के सामने आती रहीं, निरंतर आती रहीं। देश इनसे कैसे लड़ा, ये जानना, ये समझना, हर देशवासी के लिए बहुत ज़रूरी है।

साथियों,

सामान्य दिनों में भारत में एक दिन में 900 मीट्रिक टन, लिक्विड मेडिकल ऑक्सीजन का प्रॉडक्शन होता था। डिमांड बढ़ते ही भारत ने मेडिकल ऑक्सीजन का प्रॉडक्शन 10 गुना से भी ज्यादा बढ़ाया। ये दुनिया के किसी भी देश के लिए अकल्पनीय लक्ष्य था, लेकिन भारत ने इसे हासिल करके दिखाया।

साथियों,

यहां उपस्थित कई महानुभाव इस बात से परिचित हैं, कि ऑक्सीजन के प्रॉडक्शन के साथ ही उसका ट्रांसपोर्टेशन भी कितनी बड़ी चुनौती होता है। ऑक्सीजन ऐसे ही किसी टैंकर में नहीं ले जाया जा सकता। इसके लिए खास टैंकर चाहिए होता है। भारत में ऑक्सीजन प्रॉडक्शन का काम सबसे ज्यादा पूर्वी भारत में होता है, लेकिन मुश्किल ये कि ज़रूरत सबसे अधिक उत्तर और पश्चिमी भारत में पड़ी।

भाइयों और बहनो,

लॉजिस्टिक्स की इतनी चुनौतियों से जूझते हुए देश ने युद्धस्तर पर काम किया। देश और दुनिया में दिन-रात जहां से भी संभव हो, वहां से ऑक्सीजन प्लांट्स, ऑक्सीजन टैंकर अरेंज किए गए। स्पेशल ऑक्सीजन ट्रेन चलाई गई, खाली टैंकों को तेजी से पहुंचाने के लिए वायुसेना के विमान लगाए गए। प्रॉडक्शन बढ़ाने के लिए DRDO के माध्यम से तेजस फाइटर प्लेन की टेक्नॉलॉजी को लगाया गया। पीएम केयर्स से देश में PSA ऑक्सीजन प्लांट्स लगाने पर काम तो तेज हुआ ही, एक लाख से अधिक ऑक्सीजन कंसंट्रेटर के लिए पैसा भी दिया गया।

साथियों,

भविष्य में कोरोना से लड़ाई के लिए हमारी तैयारी और पुख्ता हो, इसके लिए देशभर में PSA ऑक्सीजन प्लांट्स का नेटवर्क तैयार हो रहा है। बीते कुछ महीनों में पीएम केयर्स द्वारा स्वीकृत 1150 से अधिक ऑक्सीजन प्लांट्स काम करना शुरू कर चुके हैं। अब देश का हर जिला, पीएम केयर्स के तहत बने हुए ऑक्सीजन प्लांट्स से कवर हो गया है। पीएम केयर्स के सहयोग से बने इन ऑक्सीजन प्लांट्स को जोड़ लें, तो केंद्र सरकार, राज्य सरकार, इन सभी के प्रयासों से देश को करीब 4 हजार नए ऑक्सीजन प्लांट्स मिलने जा रहे हैं। ऑक्सीजन की चुनौती का मुकाबला करने में अब देश और देश के अस्पताल, पहले से कहीं ज्यादा सक्षम हो रहे हैं।

साथियों,

ये हर भारतवासी के लिए गर्व की बात है कि कोरोना वैक्सीन की 93 करोड़ डोज लगाई जा चुकी है। बहुत जल्द हम 100 करोड़ के आंकड़े को पार कर पाएंगे और पार कर जाएंगे। भारत ने Cowin प्लेटफॉर्म का निर्माण करके पूरी दुनिया को राह दिखाई है कि इतने बड़े पैमाने पर वैक्सीनेशन किया कैसे जाता है। पहाड़ हो या रेगिस्तान, जंगल हो या समंदर, 10 लोग हों या 10 लाख, हर क्षेत्र तक आज हम पूरी सुरक्षा के साथ वैक्सीन पहुंचा रहे हैं। इसके लिए देशभर में 1 लाख 30 हजार से ज्यादा टीकाकरण केंद्र स्थापित किए गए हैं। यहां राज्य सरकार के प्रभावी मैनेजमेंट की वजह से उत्तराखंड भी बहुत जल्द शत-प्रतिशत पहली डोज का पड़ाव पूरा करने वाला है, और इसके लिए मुख्यमंत्री जी को, उनकी पूरी टीम को, यहां के हर छोटे-मोटे सरकार के साथियों को मैं हृदय से बहुत - बहुत बधाई देता हूं।

भाइयों और बहनों,

जहां तराई जैसी समतल भूमि है। वहां शायद इन कामों में सरलता रहती है। मैं इस धरती से बहुत जुड़ा रहा। यहां वैक्सीन पहुंचाना भी कितना कठिन होता है। हिमालय के पहाड़ों के उस पार पहुंचकर के लोगों के पास जाना कितना कठिन होता है। ये हम भलि भांति जानते हैं। उसके बावजूद भी इतनी बड़ी सिद्धि प्राप्त करना वाकई आप सब अभिनंदन के अधिकारी हैं।

भाइयों और बहनों,

21वीं सदी का भारत, जनता की अपेक्षाओं, जनता की आवश्यकताओं का पूर्ण समाधान करते हुए ही आगे बढ़ेगा। आज सरकार इस बात का इंतज़ार नहीं करती कि नागरिक उसके पास अपनी समस्याएं लेकर के आएगा तब कोई कदम उठाएंगे। सरकारी माइंडसेट और सिस्टम से इस भांति को हम बाहर निकाल रहे हैं। अब सरकार नागरिक के पास जाती है। गरीबों को पक्का घर हो, बिजली, पानी, शौचालय और गैस कनेक्शन हो, 80 करोड़ से अधिक लोगों को मुफ्त राशन हो, किसानों के बैंक खाते में सीधे हजारों करोड़ रुपए भेजने हों, पेंशन और बीमा की सुविधा हर भारतीय तक पहुंचाने के प्रयास हों, जनहित के ऐसे हर लाभ, इसी वजह से तेज़ी से सही हकदार तक पहुंचे हैं।

साथियों,

स्वास्थ्य के क्षेत्र में भी भारत इसी अप्रोच से आगे बढ़ रहा है। इससे गरीब और मध्यम वर्ग की बचत भी हो रही है और उसे सुविधा भी मिल रही है। पहले जब किसी को गंभीर बीमारी होती थी, तो वो आर्थिक मदद के लिए यहां वहां नेताओं या फिर सरकारी दफ्तरों के चक्कर काटता था। आयुष्मान भारत ने इस परेशानी को हमेशा के लिए खत्म कर दिया है। अस्पताल के बाहर लंबी लाइनों, इलाज में होने वाली देरी, मेडिकल हिस्ट्री का अभाव, इस वजह से कितने ही लोग परेशान होते रहे हैं। अब आयुष्मान भारत डिजिटल मिशन इसे पहली बार इसका समाधान करने का भी प्रयास शुरू हुआ है।

साथियों,

छोटे-छोटे उपचार के लिए, बीमारी के दौरान रूटीन चेकअप के लिए बार-बार आना-जाना कितना मुश्किल होता है, ये उत्तराखंड के लोगों से बेहतर कौन समझ सकता है। लोगों की इस मुश्किल को दूर करने के लिए अब ई-संजीवनी ऐप की सुविधा दी गई है। इससे, गांव में अपने घर पर बैठे-बैठे मरीज़, शहरों के अस्पतालों में डॉक्टर से कंसल्टेशन ले रहे हैं। इसका लाभ अब उत्तराखंड के लोगों ने भी उठाना शुरू किया है।

भाइयों और बहनों,

स्वास्थ्य सुविधाएं सभी तक पहुंचाने के लिए लास्ट माइल डिलिवरी से जुड़ा एक सशक्त हेल्थ इंफ्रास्ट्रक्चर भी बहुत ज़रूरी होता है। 6-7 साल पहले तक सिर्फ कुछ राज्यों तक ही एम्स की सुविधा थी, आज हर राज्य तक एम्स पहुंचाने के लिए काम हो रहा है। 6 एम्स से आगे बढ़कर 22 एम्स का सशक्त

नेटवर्क बनाने की तरफ हम तेज़ी से आगे बढ़ रहे हैं। सरकार का ये भी लक्ष्य है कि देश के हर जिले में कम से कम एक मेडिकल कॉलेज जरूर हो। इसके लिए बीते 7 वर्षों में देश में 170 नए मेडिकल कॉलेज शुरू किए गए हैं। दर्जनों नए मेडिकल कॉलेज का काम जारी है। यहां मेरे उत्तराखंड में भी रुद्रपुर, हरिद्वार और पिथौरागढ़ में नए मेडिकल कॉलेजों को मंजूरी दी गई है।

साथियों,

उत्तराखंड के निर्माण का सपना अटल जी ने पूरा किया था। अटल जी मानते थे कनेक्टिविटी का सीधा कनेक्शन विकास से है। उन्हीं की प्रेरणा से आज देश में कनेक्टिविटी के इंफ्रास्ट्रक्चर के लिए अभूतपूर्व स्पीड और स्केल पर काम हो रहा है। मुझे संतोष है कि उत्तराखंड की सरकार इस दिशा में गंभीरता से काम कर रही है। बाबा केदार के आशीर्वाद से केदारधाम की भव्यता को और बढ़ाया जा रहा है, वहां श्रद्धालुओं के लिए नई सुविधाएं विकसित की जा रही हैं। मैं भी कई बार ड्रोन कैमरा के माध्यम से इन कार्यों की प्रगति की समीक्षा करता रहता हूं। चारधाम को जोड़ने वाली all weather road पर काम तेज़ी से चल रहा है। चारधाम परियोजना, देश और दुनिया से आने वाले श्रद्धालुओं के लिए बहुत बड़ी सुविधा तो बना ही रही है, गढ़वाल और कुमाऊं के चुनौतीपूर्ण क्षेत्रों को भी आपस में जोड़ रही है। कुमाऊं में चारधाम रोड के लगभग डेढ़ सौ किलोमीटर हिस्से से इस क्षेत्र के विकास को नया आयाम मिलने वाला है। ऋषिकेश-कर्णप्रयाग रेल लाइन से भी उत्तराखंड की रेल कनेक्टिविटी को और विस्तार मिलेगा। सड़क और रेल के अलावा एयर कनेक्टिविटी को लेकर हुए कार्यों का लाभ भी उत्तराखंड को मिला है। देहरादून हवाई अड्डे की क्षमता को 250 पैसेंजर से बढ़ाकर 1200 तक पहुंचाया गया है। मुख्यमंत्री श्रीमान धामी जी के उत्साही और ऊर्जावान नेतृत्व में उत्तराखंड में हैलीपोर्ट इंफ्रास्ट्रक्चर को भी प्रोत्साहित किया जा रहा है।

साथियों,

पानी की कनेक्टिविटी को लेकर भी उत्तराखंड में आज सराहनीय कार्य हो रहा है। इसका बहुत बड़ा लाभ यहां की महिलाओं को मिलना शुरू हुआ है, उनका जीवन और आसान बन रहा है। 2019 में जल जीवन मिशन शुरू होने से पहले उत्तराखंड के सिर्फ 1 लाख 30 हजार घरों में ही नल से जल पहुंचता था। आज उत्तराखंड के 7 लाख 10 हजार से ज्यादा घरों में नल से जल पहुंचने लगा है। यानि सिर्फ 2 वर्ष के भीतर राज्य के करीब-करीब 6 लाख घरों को पानी का कनेक्शन मिला है। जैसे उज्जवला योजना के तहत मिले गैस कनेक्शन ने महिलाओं को राहत दी, स्वच्छ भारत मिशन के तहत बने शौचालयों ने महिलाओं को सुविधा, सुरक्षा और सम्मान दिया, वैसे ही जल जीवन मिशन से हो रहा पानी का कनेक्शन, महिलाओं को बहुत राहत दे रहा है।

साथियों,

उत्तराखंड की देश की सुरक्षा में बहुत बड़ी भूमिका है। यहां का वीर नौजवान, वीर बेटियां, भारतीय सुरक्षा बलों की आन, बान और शान हैं। हमारी सरकार, हर फौजी, हर पूर्व फौजी के हितों को लेकर भी पूरी गंभीरता से काम कर रही है। ये हमारी ही सरकार है जिसने वन रैंक वन पेंशन को लागू करके अपने फौजी भाइयों की 40 साल पुरानी मांग पूरी की। और हमारे धामी जी तो खुद फौजी के बेटे हैं। वो बता भी रहे थे कि वन रैंक वन पेंशन इस फैसले ने, फौजियों को कितनी बड़ी मदद की है।

साथियों,

ये हमारी ही सरकार है जिसने दिल्ली में नेशनल वॉर मेमोरियल बनाकर देश के वीर जवानों को श्रद्धांजलि अर्पित की है। ये हमारी ही सरकार है जिसने Battle Casualties Welfare Fund का लाभ आर्मी के साथ-साथ नौसेना और वायुसेना के शहीदों को भी सुनिश्चित किया है। ये हमारी ही सरकार है जिसने JCO और अन्य Ranks की पदोन्नति को लेकर पिछले 4 दशकों से चला आ रहा मामला

सुलझा दिया है। पूर्व-सैनिकों को पेंशन से जुड़ी दिक्कतें ना आएँ, इसके लिए भी हम डिजिटल टेक्नोलॉजी का इस्तेमाल बढ़ा रहे हैं।

साथियों,

जब फौज के वीर जांबाजों के पास आधुनिक हथियार होते हैं, अपनी रक्षा के लिए आधुनिक उपकरण होते हैं, तो वो उतनी ही आसानी से दुश्मन से मुकाबला कर पाते हैं। ऐसी जगहों पर जहां मौसम हमेशा खराब रहता है, वहां भी आधुनिक उपकरणों से उन्हें बहुत मदद मिलती है। हमारी सरकार ने रक्षा क्षेत्र में जो आत्मनिर्भरता का अभियान चलाया है, वो भी बहुत बड़ी मदद हमारे फौजी साथियों की करने वाला है। और निश्चित तौर पर सरकार के इन सभी प्रयासों का लाभ उत्तराखंड को होगा, यहां के लोगों को भी होगा।

भाइयों और बहनो,

हम दशकों की उपेक्षा से देवभूमि को निकालने का बहुत ईमानदारी से, पूरी गंभीरता से प्रयास कर रहे हैं। बेहतर इंफ्रास्ट्रक्चर बनने के बाद, वीरान पड़े गांव फिर से आबाद होने लगे हैं। कोरोना काल में मेरी यहां के अनेक युवाओं से, किसानों से कई बार बातचीत हुई है। जब वो बताते हैं कि उनके घर सड़क पहुंच चुकी है, अब उन्होंने Home Stay खोल दिया है, तो मन को बहुत संतुष्टि मिलती है। नए इंफ्रास्ट्रक्चर से कृषि, पर्यटन-तीर्थाटन और उद्योगों के लिए, युवाओं के लिए अनेक नए अवसर खुलने वाले हैं।

साथियों,

यहां उत्तराखंड में युवा ऊर्जा से भरपूर उत्साही टीम है। अगले कुछ वर्ष में उत्तराखंड अपने गठन के 25 वर्ष में प्रवेश करेगा। उत्तराखंड को बहुत निकट भविष्य में 25 वर्ष होने वाले हैं। तब उत्तराखंड जिस ऊंचाई पर होगा, ये तय करने, उसके लिए जुट जाने का यही समय है, सही समय है। केंद्र में जो सरकार है, वो उत्तराखंड की इस नई टीम को, पूरी मदद दे रही है। केंद्र और राज्य सरकार के साझा प्रयास, यहां के लोगों के सपनों को पूरा करने का बहुत बड़ा आधार हैं। विकास का यही डबल इंजन उत्तराखंड को नई बुलंदी देने वाला है। बाबा केदार की कृपा से, हम हर संकल्प को सिद्ध करें, इसी कामना के साथ आप सभी को बहुत-बहुत शुभकामनाएं। धन्यवाद !

<https://pib.gov.in/PressReleasePage.aspx?PRID=1761750>



NTPC inaugurates PSA Oxygen Plants

The PSA Oxygen Plant at NTPC Dadri and NTPC Bongaigaon have been inaugurated today.

This inaugurations were done as per the guidelines from MOP and in series of dedication of PSA Oxygen Plant in each state and UT to Nation, funded by PM CARES by Hon'ble Prime Minister through virtual inauguration from AIIMS Rishikesh.

The PSA Oxygen Plant at NTPC Dadri was inaugurated by the Chief Guest Shri B Srinivasa Rao, CGM NTPC Dadri on October 07, 2021. The virtual inauguration and address by Hon'ble Prime Minister was also witnessed by Shri B.Srinivasa Rao, CGM(Dadri) with senior officials and employees.

In NTPC Dadri Oxygen plant, there are two plants of capacity 5 m³ per hour each, which is sufficient to generate 83 litres per minute. This plant was installed in view of preparedness against COVID pandemic. This unit of NTPC Dadri will help to tackle any untoward incident of Requirement of medical oxygen in township and vicinity.

In addition to this, Oxygen Plant at NTPC Bongaigaon has been inaugurated to tackle COVID 19 crisis. Under the Ministry of Power Initiative, NTPC Bongaigaon under its Corporate Social Responsibility inaugurated the oxygen boosting & bottling plant for its Pressure Swing Adsorption Technology (PSA type) oxygen plant of total capacity of 15 Nm³/hr (Configuration of PSA type oxygen generation plant shall be 3x5Nm³/hr Modules). The Oxygen plant was inaugurated post the dedication of various Oxygen plants across the country by Hon'ble Prime Minister Shri Narendra Modi under PM Care Fund. The oxygen plant set up as a preventive measure and care against COVID 19 was inaugurated at NTPC Bongaigaon Hospital premises by Dr. Jahiruddin Ahmed, Joint Director, Health Services, Kokrajhar, BTR, Assam in the presence of Shri Subrata Mandal, ED, NTPC Bongaigaon and corona warriors of the station. The corona warriors include the employees and medical staff of the power station who have contributed to setting of this plant and ensuring its completion.

With a life of 15 years, NTPC Bongaigaon's oxygen plant has a piping network which is being provided for 40 beds at NTPC site hospital. Provision for back up supply from the cylinder banks is also being provided with automatic changeover from direct supply (PSA module) to Cylinder bank and vice versa. The oxygen plant is equipped with Automatic Oxygen generation on demand Online purity indication and Audio-visual alarms Analog output for remote monitoring Mimic display for PSA functions meets the requirements as per Indian standard / ISO and other international standards.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1761736>





Shri Hardeep Singh Puri inaugurates 62 PSA Oxygen plants set up by Oil and Gas Companies

Union Petroleum and Natural Gas & Housing and Urban Affairs minister Shri Hardeep Singh Puri today inaugurated 62 Pressure Swing Adsorption (PSA) Medical Oxygen Generation Plants installed in public health facilities across the country. The new PSA Plants installed in public health facilities across the country will be a beacon of hope for Aatmanirbhar Bharat. The inauguration of the medical oxygen plants took place in the presence of Mr RameswarTeli, Minister of State for Petroleum and Natural Gas & Labour and Employment, Mr Giriraj Singh, Minister for Rural Development and Panchayati Raj, Mr Tarun Kapoor, Secretary, MoP&NG, Mr S M Vaidya, Chairman, IndianOil and other dignitaries and senior officials from oil and gas companies present across several states.

Addressing the gathering, Mr Hardeep Singh Puri said that the Oil & Gas fraternity of India has risen to the occasion to reach out to fellow citizens and serve the people of India. "I am happy that the Oil & Gas companies are carrying this mission forward to strengthen the medical oxygen infrastructure of the country," said Mr Puri. He highlighted the vital role played by Oil and Gas PSE's during the second wave of Covid-19, saying that these companies served the nation in critical times by supplying



High-purity oxygen from their refineries and converted several LNG tankers into medical grade oxygen carriers to strengthen the medical oxygen logistics in the country.

Speaking on the occasion, Mr RameswarTeli said that Oil & Gas majors have been playing a crucial role by supplying a significant part of Liquid Medical Oxygen (LMO) national requirements on a daily basis. He added that Petroleum Ministry and Oil & Gas PSEs are now going further to strengthen Indian's medical oxygen resources and said that the 62 PSA Medical Oxygen Plants shall meet the medical oxygen needs of over 11,000 beds across 62 hospitals in several states. Mr Teli stated that MoP&NG is committed to contributing to this national crusade against COVID-19 in every possible way.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1761822>

Modi lauds India's fight against Covid, inaugurates 35 oxygen plants

PM Narendra Modi said India's capacity of 900 metric tonnes of medical oxygen was increased by 10 times and called it an unimaginable feat for any country

Dehradun: Prime Minister Narendra Modi on Thursday said 1,150 pressure swing adsorption (PSA) oxygen plants have started functioning in the last few months and now every district has them under the PM Cares Fund as the government was setting up their network across the country.

Speaking at an event at Rishikesh's All India Institute of Medical Sciences for the inauguration of 35 PSA oxygen plants established under the fund across 35 states and union territories, he lauded the bravery with which India faced the biggest crisis-- Covid-19 pandemic--of 100 years. He detailed how the country's medical oxygen generation capacity and testing were ramped up while over 130,000 vaccination centres were set up.



Prime Minister Narendra Modi dedicated 35 PSA Oxygen Plants to the nation at a function in Rishikesh. (HT Photo)

Modi said the capacity of 900 metric tonnes of medical oxygen was increased by 10 times and called it an unimaginable feat for any country. "From one testing lab, we have set up a network of 3,000 testing labs. More than 130,000 vaccination centres have been set up across the country." He said the world's fastest, and largest vaccination drive shows their determination, unity, and resolve to serve people. Modi said the country's varied terrain and large population were among the challenges India faced in its fight against the pandemic.

"Every person in the country should know and understand how we met this challenge in such a short time." He added the production of oxygen is more in the country's eastern part while there is greater demand for it in the northern and western parts. "Faced up with these logistic challenges, we worked on war footing level. We got oxygen tankers from wherever we could manage in the world. We sought the help of the Indian Airforce in the supply of oxygen. We provided money for one lakh (100,000) oxygen concentrators."

He was referring to the steps the government took when the second wave of Covid-19 triggered an unprecedented shortage of medical oxygen in the country.

Modi called it is a matter of pride that 930 million Covid-19 vaccine doses have been delivered and soon India will cross the one-billion mark. He spoke about how vaccination was carried out in far-flung areas in Uttarakhand Himalayas.

Modi said the government no longer waits for people to come with their problems and reaches out to them directly for resolving them. "Now the government is reaching out to people directly... in the health sector too, the government is moving ahead with this approach," he said on the day he completed 20 years in public office.

Modi said he had been serving people for decades, but it was on this day, 20 years ago, he got the new responsibility as the chief minister of Gujarat. "I never imagined this journey, first as the chief minister and then as the Prime Minister. Now I am entering 21 years of my journey. And in these 20 years, I have been getting affection of Uttarakhand... feel blessed to be here. My determination to keep serving people has been further strengthened in this divine land," he said. He added he feels blessed to be in the state on the first day of Navratri.

Modi spoke about initiatives and projects taken up for development and improving connectivity in Uttarakhand. He said the all-weather Char Dham road will give a new dimension to the region's development.

<https://www.hindustantimes.com/india-news/modi-lauds-india-s-fight-against-covid-inaugurates-35-oxygen-plants-101633603262624.html>



Fri, 08 Oct 2021

India's liquid medical oxygen capacity increased tenfold: Modi

Govt. aims at AIIMS in every State, medical college in every district, says Modi

The government's aim is to have institutions like the All India Institute of Medical Sciences (AIIMS) in every State, and a medical college in every district of the country, said Prime Minister Narendra Modi on Thursday, adding that the last mile delivery of healthcare was not possible with the network of AIIMS limited to six-seven States.

"Every State should have an AIIMS-like institute," Mr. Modi said while digitally inaugurating 35 PSA (pressure swing adsorption) oxygen plants in different locations across 35 States and Union Territories from the AIIMS-Rishikesh in Uttarakhand.

On the target of opening one medical college in every district, he noted that colleges have been opened in 170 districts.

Stating that the COVID-19 crisis has been "the crisis of the century", the Prime Minister said, "India's oxygen production capacity of 900MT has increased more than tenfold since intervention".

"The management of production and transportation of oxygen in the time of crisis on a war footing set an example in itself. Oxygen tankers were flown out, special oxygen express [trains] were run, the DRDO (Defence Research and Development Organisation) used the oxygen collection technology of Tejas aircraft to deploy the first oxygen plants," he said, adding that massive work was undertaken thereafter.

"All districts now have at least one PSA plant made available to them, and the Centre, along with the States, has commissioned 4,000 new oxygen plants. One lakh concentrators were also installed with a focus on geographically distant areas," he said.

Speaking on the occasion, Health Minister Mansukh Mandaviya said that India had not only developed the COVID-19 vaccine but also ensured its wide availability.

<https://www.thehindu.com/news/national/indias-liquid-medical-oxygen-capacity-increased-tenfold-pm-modi/article36882470.ece>



Prime Minister Narendra Modi at the dedication of the Pressure Swing Adsorption (PSA) Oxygen Plants at AIIMS Rishikesh, Uttarakhand, on October 7, 2021. | Photo Credit: PTI

Modi launches oxygen plants at Madurai, Trichy, Tuticorin GHs

Madurai/Trichy: Prime Minister Narendra Modi on Thursday inaugurated pressure swing absorption (PSA) oxygen generator plants at various government hospitals in the state through videoconferencing from Delhi. The plants were established under the PM Cares fund, with support from the Defence Research and Development Organisation (DRDO) and National Highways Authority of India (NHAI).

In Madurai, three plants were inaugurated at the super specialty block of the Government Rajaji Hospital (GRH), Vadipatti government hospital and Usilampatti government hospital respectively. The Mahatma Gandhi memorial government hospital (MGMGH) in Trichy also got one plant.

PSA oxygen generator plants are a source of medical grade oxygen which will suck air, remove moisture and segregate nitrogen from oxygen and supply oxygen to patients through large cylinders. With the newly-commissioned plant, GRH has a total of six plants.

For the MGMGH, this is second oxygen plant. The 1,000lpm capacity plant was commissioned at a cost of Rs 1.75 crore including Rs 1.25 crore from PM Cares fund and Rs 50 lakh from the public works department (PWD).

MGMGH has already been equipped with a 350l capacity oxygen plant with fund from the municipal administration. The addition of one more plant to the tertiary care hospital will help the hospital administration reduce the dependency on liquid oxygen supply from outside, said medical superintendent Dr E Arunraj. One more plant with 350l capacity is being established at the hospital.

Similarly, a plant with a capacity of 1000lpm was inaugurated at the Tuticorin Government Medical College Hospital. Dean Dr D Nehru said that the plant will help cater to the needs for at least 200 beds in the maternity and paediatric wards.

Meanwhile, Madurai MP Su Venkatesan urged the central government to clarify whether PM CARES fund comes under the government of India.

<https://timesofindia.indiatimes.com/city/madurai/modi-launches-oxygen-plants-at-madurai-trichy-tuticorin-ghs/articleshow/86852016.cms>

पीएम मोदी ने देश को दी 35 आक्सीजन प्लांट की सौगात, ऋषिकेश में किया उद्घाटन

पीएमओ की तरफ से दी गई जानकारी के मुताबिक उत्तराखंड के ऋषिकेश स्थित अखिल भारतीय आयुर्विज्ञान संस्थान (एम्स) में उद्घाटन समारोह आयोजित किया जाएगा। इसके साथ ही देश के सभी जिलों में पीएसए आक्सीजन संयंत्र स्थापित हो जाएंगे।

By Neel Rajput

नई दिल्ली: प्रधानमंत्री नरेंद्र मोदी गुरुवार को उत्तराखंड के दौरे पर हैं। इस दौरान उन्होंने 35 राज्यों और केंद्रशासित प्रदेशों में 35 प्रेशर स्विंग एडजार्प्शन (पीएसए) आक्सीजन संयंत्रों का उद्घाटन किया। उद्घाटन समारोह का आयोजन ऋषिकेश स्थित अखिल भारतीय आयुर्विज्ञान संस्थान (एम्स) में किया गया है।



इस मौके पर प्रधानमंत्री मोदी ने वहां उपस्थित जनसभा को भी संबोधित किया। इस दौरान उन्होंने कहा कि भारत में आक्सीजन का सबसे अधिक उत्पादन पूर्वी भारत में होता था जबकि, इसकी सबसे ज्यादा आवश्यकता उत्तर व पश्चिमी भारत में पड़ी। ऐसे में पूरब से उत्तर पश्चिम

तक आक्सीजन की आपूर्ति करना एक चुनौतीपूर्ण लक्ष्य था। सरकार ने आक्सीजन टैंकर के अलावा स्पेशल ट्रेन और वायु सेना की मदद से इस चुनौती का हल किया। डीआरडीओ की मदद से आक्सीजन उत्पादन के लिए नए संयंत्रों का निर्माण किया गया और आज देश का प्रत्येक जिला आक्सीजन उत्पादन के लिए आत्मनिर्भर बन गया है।

बुधवार को पीएमओ की तरफ से दी गई जानकारी के मुताबिक, अब तक कुल 1,224 पीएसए आक्सीजन संयंत्रों के लिए पीएम केयर्स फंड से राशि उपलब्ध कराई गई है। इनमें से 1,100 पीएसए आक्सीजन संयंत्रों की स्थापना की जा चुकी है और इनसे 1,750 मीट्रिक टन से अधिक आक्सीजन हर रोज उपलब्ध होगा।

कार्यक्रम मे ये लोग थे मौजूद

कार्यक्रम में पूर्व मुख्यमंत्री त्रिवेन्द्र सिंह रावत, विजय बहुगुणा, तीरथ सिंह रावत, भाजपा के प्रदेश अध्यक्ष मदन कौशिक, काबीना मंत्री यशपाल आर्य, सतपाल महाराज हरक सिंह रावत, बिशन सिंह चुफाल, सुबोध उनियाल, रेखा आर्य, यतीश्वरानंद, राज्यसभा सदस्य अनिल बलूनी, देहरादून महापौर सुनील उनियाल गामा, नरेश बंसल, ऋषिकेश महापौर अनीता ममगाईं, एम्स के निदेशक प्रोफेसर अरविंद राजवंशी, डीन एकेडमिक प्रोफेसर मनोज कुमार गुप्ता आदि मौजूद रहे।

<https://www.jagran.com/news/national-pm-modi-to-inaugurate-35-oxygen-plants-it-will-produce-more-than-1750-metric-tonnes-of-oxygen-every-day-22090803.html>

Two oxygen generation plants commissioned at Wenlock

One of them with 1,000 LPM capacity has been set up under PM-CARES Fund

Two oxygen generation plants were formally commissioned at the Government Wenlock Hospital here on Thursday.

Of the two, one, with 1,000 LPM (litres per minute) capacity, has come up behind the old building of the hospital. It has been set up using PM-CARE funds. While machinery was provided by Defence Research and Development Organisation, the National Highways Authority of India built the structure. The pipeline works were taken up by the hospital.

The second plant with 930 LPM capacity has been set up near the new super-speciality block of the hospital. MRPL granted funds for this plant.

Machinery for the third plant with 500 LPM capacity, which is coming up on the hospital premises, is expected to arrive in the next few days and the plant is likely to be commissioned later.

Of the 16 oxygen generation plants proposed in Dakshina Kannada, 11 have been commissioned so far. They are 500 LPM capacity plants one at the Government Lady Goschen Hospital in the city and the other at the Bantwal Taluk Hospital; 450 LPM capacity plant in the Puttur Taluk Hospital; 390 LPM plant in the Belthangady Taluk Hospital; 81 LPM capacity plants in the Community Health Centres (CHC) in Kadaba, Vitla, Uppinangady and ESI Hospital in Mangaluru; and a 50 LPM plant in CHC Vamadapadavu.

Installation of 500 LPM capacity plant is in progress at the CHC Ullal, while civil and electrical works are being taken up to install two 250 LPM capacity plants, one each in the Sullia Taluk Hospital and the CHC in Moodbidri.

Posting of a technician is awaited to operate the 81 LPM capacity plant at CHC in Vamadapadavu.

“With these oxygen generation plants, we now are oxygen surplus district and are in a good position to meet exigencies from another wave of the pandemic, if any. The oxygen from these plants will be used in wards, while oxygen for the intensive care units will be met by liquid oxygen plants and oxygen cylinders,” Deputy Commissioner K.V. Rajendra told reporters.

Apart from the district hospital, facilities at other government health facilities have been improved. Private hospitals have set up their own oxygen generation units.

An average of 9,000 RT-PCR tests are being carried out in the district daily.

The district administration continues to excel in vaccinating people and vaccination centres are being opened at Mangaladevi, Kateel Durgaparameshwari, Kudroli Gokarnanatha and other temples that people visit during the Dasara celebrations, Dr. Rajendra said.

Dakshina Kannada Member of Parliament Nalin Kumar Kateel launched the two plants at the Wenlock Hospital. Mangaluru City South MLA D. Vedavyas Kamath, Zilla Panchayat Chief Executive Officer Kumara and Hospital Superintendent Sadashiva were present.

<https://www.thehindu.com/news/cities/Mangalore/two-oxygen-generation-plants-commissioned-at-wenlock/article36888619.ece>



The 1,000 litres per minute capacity oxygen generation plant that was formally commissioned at the Government Wenlock Hospital in Mangaluru on Thursday.

UP deputy CM inaugurates oxygen plant at Cantonment Board hospital in Lucknow

The oxygen plant is expected to provide assured oxygen supply to the 60 bed Lucknow Cantonment Board Hospital. The construction of the plant has been funded by the PM CARES fund

Lucknow: Deputy Chief Minister, Dinesh Sharma inaugurated a 250 litres of oxygen per minute pressure swing absorption oxygen plant at the Lucknow Cantonment Board Hospital on Thursday. “Of the 555 oxygen plants approved for UP, 392 were already functional,” Sharma said on the occasion.

The oxygen plant is expected to provide assured oxygen supply to the 60 bed Lucknow Cantonment Board Hospital. The construction of the plant has been funded by the PM CARES fund.

“UP government’s strategy for tackling COVID-19 situation was praised by the World Health Organisation and NITI Aayog,” Sharma said while praising Prime Minister Narendra Modi and chief minister Yogi Adityanath.

He said nearly 1200 oxygen plants that were inaugurated on Thursday will boost country’s health infrastructure.

GS Rajeswaran, principal director, Defence Estates, Central Command welcomed Sharma. Students at Lucknow Cantonment Board school performed Ganesh Vandana.

Satyanarayan, Pushendra Singh, and DN Yadav, director, all directors, defence estates, Central Command and Vikas Kumar, DEO Lucknow Cantonment Board and other officials and staff of the directorate of defence estates, Central Command, Defence Research and Development Organisation Lucknow as well as Lucknow Cantonment Board were present on the occasion. Vilas H. Pawar, CEO Lucknow Cantonment Board delivered the vote of thanks.

<https://www.hindustantimes.com/cities/lucknow-news/up-deputy-cm-inaugurates-oxygen-plant-at-cantonment-board-hospital-in-lucknow-101633634768044.html>



Oxygen plant at the Lucknow Cantonment Board Hospital. (ht phoro)

राज्यमंत्री ने नागरिक अस्पताल में किया ऑक्सीजन प्लांट का उद्घाटन

नारनौल: सामाजिक न्याय एवं अधिकारिता राज्यमंत्री ओमप्रकाश यादव ने वीरवार को नागरिक अस्पताल नारनौल में 75 लाख रुपये की लागत से तैयार 500 एलपीएम क्षमता का पीएसए ऑक्सीजन उत्पादन संयंत्र का उद्घाटन किया। इस ऑक्सीजन प्लांट का निर्माण पीएम केयर योजना के तहत डीआरडीओ ने करवाया है।

इस दौरान राज्यमंत्री ने बताया कि जिला महेंद्रगढ़ में सरकार ने यह बहुत बड़ा तोहफा दिया है। अगर कोरोना की संभावित तीसरी लहर भी आती है तो ऑक्सीजन की कोई कमी नहीं रहेगी। इस ऑक्सीजन प्लांट से 50 से लेकर 75 बेड तक लगातार ऑक्सीजन की सप्लाई की जा सकेगी। प्रेशर तकनीक से वार्डों में इसकी सप्लाई सुनिश्चित होगी। उन्होंने बताया कि यहां पर 18 हजार लीटर ऑक्सीजन का स्टोर भी किया जा सकेगा।

उन्होंने कहा कि सरकार ने स्वास्थ्य सेवाओं में काफी कार्य किए हैं। कोरोना की दूसरी लहर के दौरान भी जिला में सिलिंडरों के माध्यम से ऑक्सीजन की पूरी सप्लाई सुनिश्चित की गई थी। सरकार ने उस दौरान भी पोर्टल के जरिए घर-घर ऑक्सीजन की सप्लाई सुनिश्चित की थी। इस मौके पर राज्यमंत्री ने नागरिक अस्पताल में निर्माणाधीन भवनों के बारे में भी जानकारी ली। साथ ही नागरिक अस्पताल में दी जा रही सुविधाओं के बारे में भी चिकित्सकों के साथ बातचीत की। इस मौके पर उनके साथ मुख्य चिकित्सा अधिकारी डॉ. अशोक कुमार, चिकित्सा अधीक्षक डॉ. आशा शर्मा, डॉ. हर्ष चौहान, डॉ. अजय ग़ोवर तथा अन्य चिकित्सक मौजूद रहे।

राज्य मंत्री ने जिला क्षय रोग अस्पताल में किया एक्स-रे मशीन का उद्घाटन

नारनौल। टीबी के मरीजों को अब अपना एक्स-रे करवाने के लिए नागरिक अस्पताल में जाने की जरूरत नहीं पड़ेगी। जिला क्षय रोग अस्पताल में ही एक्स-रे डिजिटल मशीन स्थापित कर दी गई है। लगभग 13 लाख रुपये की लागत से तैयार इस मशीन का वीरवार को सामाजिक न्याय एवं अधिकारिता राज्यमंत्री ओमप्रकाश यादव ने उद्घाटन करके आमजन को समर्पित की। 500 एमए डिजिटल एक्स रे मशीन के साथ अन्य जरूरी उपकरण भी स्थापित किए गए हैं। इस मशीन से मरीज को तुरंत एक्स-रे रिपोर्ट मिल जाएगी। इस मशीन के परिणाम की गुणवत्ता भी बेहतरीन है। इसकी मांग लंबे समय से की जा रही थी।

2025 तक प्रदेश होगा टीबी मुक्त

उन्होंने बताया कि सरकार ने 2025 तक देश को टीबी मुक्त करने का लक्ष्य रखा है। वहीं हरियाणा सरकार ने इस लक्ष्य को 2022 तक पूरा करने का संकल्प लिया है। इसके लिए फ्री में टीबी के मरीजों की जांच की जाती है। सरकार की ओर से टीबी के मरीजों को मुफ्त में दवाइयां तथा अन्य कई प्रकार की सरकार की योजनाओं से जोड़ा जाता है। उन्होंने लोगों से आह्वान किया कि अगर उन्हें टीबी के लक्षण लगे तो तुरंत अपने नजदीकी सीएचसी व पीएचसी केंद्र पर जाकर जांच करवानी चाहिए। इस मौके पर मुख्य चिकित्सा अधिकारी डॉ. अशोक कुमार, जिला क्षय रोग अधिकारी डॉ. हर्ष चौहान, चिकित्सा अधिकारी डॉ. अजय ग़ोवर, फार्मासिस्ट विकास ग़ोवर तथा रेडियोग्राफर विशाल आदि मौजूद रहे।

<https://www.amarujala.com/haryana/mahendragarh-narnaul/mos-inaugurates-oxygen-plant-in-civil-hospital-narnol-news-rtk626356856>

ऑक्सीजन प्लांट का उद्घाटन: सांसद सीपी जोशी ने कहा-कोविड की दूसरी लहर खतरनाक थी, 1000 एलपीएम क्षमता वाले ऑक्सीजन प्लांट से होगा फायदा

चित्तौड़गढ़ और निंबाहेड़ा अस्पताल में नवनिर्मित ऑक्सीजन प्लांट का वर्चुअल उद्घाटन प्रधानमंत्री नरेंद्र मोदी ने किया। सांसद सीपी जोशी ने बटन दबाकर मशीन को चालू किया। सांसद जोशी ने बताया कि आज के दिन ही प्रधानमंत्री नरेंद्र मोदी के राजनीति सफर को 20 साल पूरे हुए। उन्होंने कहा कि कोविड की दूसरी लहर बहुत खतरनाक साबित हुई थी। उसी समय ऑक्सीजन की उपयोगिता देखी गई। इन दोनों प्लांट से लोगों को और ज्यादा फायदा मिलेगा, साथ ही चिकित्सा विभाग भी सुदृढ़ होगा। सांसद जोशी ने कहा कि प्रधानमंत्री मोदी ने राजस्थान को 22 मेडिकल कॉलेज दिए हैं। चित्तौड़ को भी यह सौगात मिली है।



बटन दबाकर ऑक्सीजन प्लांट की मशीन को चालू करते हुए सांसद सीपी जोशी।

सांसद प्रवक्ता रघु शर्मा ने बताया कि इस आयोजन का हॉस्पिटल परिसर में ही इसके प्रसारण की व्यवस्था की गई। 1000 एलपीएम क्षमता के ऑक्सीजन जनरेशन प्लांट की स्थापना के लिए सिविल एवं इलेक्ट्रीकल का कार्य भारतीय राष्ट्रीय राजमार्ग प्राधिकरण ईकाई-चित्तौड़गढ़ की ओर से किया गया है। 1000 ऑक्सीजन जनरेशन प्लांट में संयंत्र डीआरडीओ ने स्थापित किया गया है और यह संचालित है।

<https://www.bhaskar.com/local/rajasthan/bhilwara/chittorgarh/news/prime-minister-modi-did-virtual-inauguration-of-two-oxygen-plants-in-the-district-this-oxygen-generation-plant-of-1000-lpm-capacity-128999801.html>

DRDO on Twitter





Press Information Bureau
Government of India

Ministry of Defence

Thu, 07 Oct 2021 6:10PM

Curtain Raiser: 6th edition of India - UK joint company level military training: Exercise AJEYA WARRIOR commences at Chaubatia (Uttarakhand)

The 6th Edition of India - UK Joint Company Level Military Training EXERCISE AJEYA WARRIOR has commenced at Chaubatia, Uttarakhand and will culminate on 20 Oct 2021. The exercise is part of an initiative to develop inter-operability and sharing expertise with friendly foreign nations. During this exercise, an Infantry Company from Indian Army and an equivalent strength from UK Army would be sharing their experiences gained during the conduct of various military operations in their respective countries and during overseas engagements. Together, both the armies stand to benefit from their varied experiences.

As part of the training, both the Armies would familiarise with each other's weapons, equipment, tactics, techniques and procedures for carrying out joint military operations. Also, there would be a series of Expert Academic Discussions on various subjects of mutual interest such as Combined Arms Concept, Sharing of Experiences in Joint Force, Operation Logistics etc. The joint military training would culminate with a grueling 48 hours exercise to validate the performance of both the Armies in conducting joint military operations in a semi-urban environment.

This joint military training will go a long way in improving bilateral relations and also will be a major step towards further strengthening the traditional bond of friendship between the two Nations.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1761812>



पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Thu, 07 Oct 2021 6:10PM

पूर्वावलोकन: भारत-यूके संयुक्त कंपनी स्तरीय सैन्य प्रशिक्षण का छठा संस्करण, अभ्यास अजेय वारियर चौबटिया (उत्तराखंड) में शुरू

भारत - यूके संयुक्त कंपनी स्तर का सैन्य प्रशिक्षण अभ्यास अजेय वारियर का छठा संस्करण उत्तराखंड के चौबटिया में शुरू हुआ है और दिनांक 20 अक्टूबर 2021 को समाप्त होगा। यह अभ्यास मित्र विदेशी राष्ट्रों के साथ अंतर-संचालनीयता और विशेषज्ञता साझा करने की पहल का हिस्सा है। इस अभ्यास के दौरान भारतीय सेना की एक इन्फैंट्री कंपनी और युनाइटेड किंगडम सेना की भी इतनी ही संख्या में सैन्य ताकत अपने-अपने देशों में विभिन्न सैन्य अभियानों के संचालन के दौरान और विदेशी गतिविधियों के दौरान प्राप्त अपने अनुभवों को साझा करेगी। साथ में दोनों सेनाएं अपने विविध अनुभवों से लाभान्वित होने के लिए तैयार हैं।

प्रशिक्षण के अंतर्गत दोनों देशों की सेना संयुक्त सैन्य अभियानों को अंजाम देने के लिए एक-दूसरे के हथियारों, उपकरणों, रणनीति, तकनीकों और प्रक्रियाओं से परिचित होंगी। इसके अलावा आपसी हित के विभिन्न विषयों जैसे कि संयुक्त शस्त्र अवधारणा, संयुक्त बल में अनुभवों को साझा करना, ऑपरेशन लॉजिस्टिक्स आदि पर विशेषज्ञ अकादमिक चर्चाओं की एक श्रृंखला भी आयोजित होगी। संयुक्त सैन्य प्रशिक्षण का समापन 48 घंटे के कठिन अभ्यास के साथ अर्द्ध-शहरी वातावरण में संयुक्त सैन्य अभियान चलाने में दोनों सेनाओं के प्रदर्शन को मान्यता प्रदान करने के लिए किया जाएगा।

यह संयुक्त सैन्य प्रशिक्षण द्विपक्षीय संबंधों को बेहतर बनाने में एक लंबा रास्ता तय करेगा और दोनों देशों के बीच दोस्ती के पारंपरिक बंधन को और मजबूत करने की दिशा में एक बड़ा कदम होगा।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1761892>

LUH military variant to make maiden test flight next August

LUH will replace the army and the Indian Air Force's ageing fleets of Cheetah and Chetak helicopters, whose safety record has been blemished by a string of crashes --- two army pilots were killed last month in the latest Cheetah crash near Patnitop in Jammu and Kashmir

By Rahul Singh

New Delhi: After wrapping up a rigorous flight testing of prototype helicopters in challenging conditions, state-run plane makers Hindustan Aeronautics Limited (HAL) set August 2022 as the deadline for carrying out the maiden test flight of the first chopper in the indigenous light utility helicopter (LUH) limited series production, senior officials familiar with the development said on Thursday. LUH's first test flight will be carried out from the new Tumakuru facility in Karnataka, another official said.

LUH will replace the army and the Indian Air Force's ageing fleets of Cheetah and Chetak helicopters, whose safety record has been blemished by a string of crashes --- two army pilots were killed last month in the latest Cheetah crash near Patnitop in Jammu and Kashmir.

Around 15 Cheetah and Chetak helicopters have crashed during the last 10 years, killing several pilots. Chief of Defence Staff General Bipin Rawat (then a lieutenant general) survived a Cheetah crash in Dimapur on February 3, 2015.

"The first test flight of the LUH in the limited series production (LSP) will be carried out next August. HAL is on the verge of getting an order for 12 LUHs -- six each for the army and IAF," said one of the officials cited above. At his annual press conference on October 5, IAF chief Air Chief Marshal Vivek Ram Chaudhari said the air force would soon place an order for six LUHs.

The design of the Cheetah and Chetak helicopters is more than 50 years old, and their airworthiness was questioned once again after the Patnitop crash. HAL expects the army and IAF to place combined orders for at least 187 light helicopters in the coming years (126 for the army and 61 for IAF).

"All trials on the four LUH prototypes are over. The last set of trials to establish LUH's extra manoeuvrability concluded in Ladakh this week. The army and IAF wanted some changes and LUH performed better than expected," said a second official.

HAL is expected to deliver the first set of LUHs to the services in two to three years of the signing of the contract. Subsequent orders will be executed at a faster pace as LUH production will also begin at HAL's new helicopter factory in Tumakuru, Karnataka. The Bengaluru and Tumakuru facilities will be capable of rolling out 100 light helicopters every year, the second official added.

"The Cheetah and Chetak replacement has been long overdue. They were designed in the 1960s. LUH has proved its capabilities in multiple rounds of trials in extreme conditions in the northern sector. It's quite an achievement in indigenous helicopter manufacturing," said Air Marshal Anil Chopra (ret'd), director-general, Centre for Air Power Studies.

Currently, the Cheetah and Chetak helicopters are a critical lifeline for troops in high-altitude areas, including the Siachen glacier. HAL has licence-produced 625 Cheetah and Chetak helicopters. It no longer builds them but is responsible for their maintenance and repair.



Army aviation director general Lt Gen AK Suri flew in an LUH prototype on Thursday.

The Army Aviation director-general Lieutenant General AK Suri on Thursday visited aviation squadrons in forwarding areas, including Leh, and flew a test sortie in LUH whose trials have been completed, the Udhampur-based Northern Command said.

India is also looking at jointly building with Russia the Kamov-226T light helicopters in the country. The Kamovs are also expected to replace the Cheetah and Chetak helicopters. However, the \$1-billion programme, under which Russia will supply 60 helicopters in flyaway condition and the remaining 140 will be manufactured in India, is yet to kick off. The army, IAF and navy together need around 500 light helicopters.

HAL is also awaiting a contract from the defence ministry for 15 light combat helicopters (LCHs) and expects follow-on orders as the army and IAF have a combined projected requirement of 160 LCHs.

<https://www.hindustantimes.com/india-news/luh-military-variant-to-make-maiden-test-flight-next-august-101633631284774.html>



Fri, 08 Oct 2021

Great Journey - Indian Air Force: Touch the sky with glory

By Nikesh Mandal

Indian Air Force Day is being observed today. On this day, the Indian Air Force was established in 1932. The Air Force is celebrating the 89th Raising Day this year. Many people would not know that before independence, the Air Force was known as the Royal Indian Air Force. The first Indian air force squad was formed on April 1, 1933. At that time, it included 6 RAF trend officers and 19 air soldiers.

The Indian Air Force played a key role in World War II. After Independence, the word 'Royal' was removed from it. Before independence, the Air Force was controlled by the Army. The credit for 'liberating' the Air Force from the Army goes to The First Commander-in-Chief of the Indian Air Force, Air Marshal Sir Thomas W. Elmhirst. He was the first Chief of the Indian Air Force, Air Marshal. He held the



post from 15 August 1947 to 22 February 1950. Tell us that the motto of the Indian Air Force is 'Nabh: Sprishan Deeptam'. This sentence is taken from chapter 11 of the Gita. This sentence is a part of lord Krishna's sermon to Arjuna in the battlefield of Kurukshetra during the Mahabharata war.

The Air Force flag is blue in colour other than the Air Force symbol, with the national flag tricolour in the first quarter of it. In the central part is a circle made up of all the three colours of the national flag (saffron, white and green). The flag was adopted by the Indian Air Force in 1951.

<https://english.newstracklive.com/news/article-on-89th-foundation-day-of-indian-air-force-mc23-nu764-ta325-1186162-1.html>



Fri, 08 Oct 2021

Goa Shipyard Limited delivers the fourth Sankalp-class OPV to Indian Coast Guard

According to information published by the Goan on October 5, 2021, the fourth vessel of the 5 Coast Guard Offshore Patrol Vessel (OPV) Project, completely designed and built by Goa Shipyard Limited (GSL), was delivered to the Indian Coast Guard.

Sankalp-class offshore patrol vessels are a series of two offshore patrol vessels designed and built by Goa Shipyard Limited for the Indian Coast Guard. The vessels, also classified as Advanced Offshore Patrol Vessels, are the largest vessels constructed by Goa Shipyard Limited. Samarth class and Saryu class were derived from this class of offshore patrol vessels.

Sankalp-class vessels have an overall length of 105 metres, a 12.9 metres beam and a draught of 3.6 metres. They have a top speed of 24 knots and a range of 6,500 nautical miles at 12 knots.

They are powered by two SEMT Pielstick 20 PA6B STC diesel engines rated at a combined 20,900 PS or 15,400 kW, each driving a Wärtsilä WCP 5C10 controllable-pitch propeller.

Sankalp class is armed with two 30 mm CRN-91 naval guns controlled by a fire control system and two 12.7 mm "Prahari" machine guns. They are equipped with external firefighting systems, an integrated bridge system and an integrated machinery control system. Sankalp-class ships can carry five high-speed boats capable of search and rescue, interception and pollution control missions.

<https://www.navyrecognition.com/index.php/naval-news/naval-news-archive/2021/october/10808-goa-shipyard-limited-delivers-the-fourth-sankalp-class-opv-to-indian-coast-guard.html>



Ceremony held at Goa Shipyard Limited on 30th Sept 2021 (Picture source: Twitter account of Prakash W.Kamat)

GRSE to revamp dry docks at Khidderpore: Signs concession agreement with SMPK

The Agreement aims to play a vital role in abetting the strategic growth plans for both the companies in addition to the revenue generation from the ship repair and refit of Defence and Commercial segments, predominantly in the Eastern Region.

Kolkata: Garden Reach Shipbuilders and Engineers Ltd., (GRSE), a Mini Ratna Category 1 Defence PSU and a leading warship building company of India, today signed the Concession Agreement with Syama Prasad Mookerjee Port, Kolkata (SMPK), to undertake the development & utilisation of the 3 existing Dry Docks of SMP at Khidderpore, Kolkata. The project envisages upgrading, operating and managing the infrastructural facilities at these docks towards their effective utilization.



The Concession Agreement was signed in the august presence of the Hon'ble Union Minister of Ports, Shipping & Waterways (MoPSW) and AYUSH, Shri Sarbananda Sonowal, Shri Sanjay Bandopadhyay, Additional Secretary, MoPSW and Rear Admiral VK Saxena, IN (Retd.), Chairman & Managing Director, GRSE, Shri Vinit Kumar, IRSEE, Chairman, SMPK & senior dignitaries of SMPK & GRSE, between Capt Amit Kapoor, Director (Marine Department), SMPK and Cmde PR Hari, IN (Retd.), Director (Personnel), GRSE.

As a part of the investment promotional activity of Maritime India, the Agreement aims to play a vital role in abetting the strategic growth plans for both the companies in addition to the revenue generation from the ship repair and refit of Defence and Commercial segments, predominantly in the Eastern Region.

This collaboration will also contribute to the future strategy of GRSE to take on additional shipbuilding activities including repair & refit of ships, which will aid in the feasibility for execution & expansion in and around Kolkata. Under the agreement, both entities look forward to develop a dynamic partnership and understanding to explore new business prospects, skill development and facility improvement, which in turn will aid in employment generation in Kolkata, as a part of Maritime growth and Nation Building exercise.

<https://www.psuconnect.in/news/GRSE-to-Revamp-Dry-Docks-at-Khidderpore:-Signs-Concession-Agreement-with-SMPK/29652/>

HAL delivers heaviest semi-cryogenic propellant tank to ISRO

The semi-cryogenic propellant tank will be used in Isro's Mk-III launch vehicle

By Manjeet Negi

New Delhi: The Hindustan Aeronautics Limited (HAL) has delivered the heaviest semi-cryogenic propellant tank (SC120- LOX) ever fabricated to the Indian Space Research Organization (Isro). The tank will be used in the Mk-III launch vehicle for future missions.

The semi-cryo-liquid oxygen (LOX) tank the first developmental welded hardware is a part of the SC120 stage intended for payload enhancement by replacing the L110 stage in the existing Mk-III launch vehicle. Last year, HAL delivered the biggest ever cryogenic Liquid Hydrogen tank (C32-LH2) which is four meters in diameter and eight meters in length, much ahead of the contractual schedule.

HAL has mastered the skills and technologies required for fabricating welded propellant tanks. To date, its Aerospace Division has delivered 244 propellant tanks and 95 water tanks to ISRO for the space programmes of PSLV, GSLV Mk-II and GSLV Mk-III of diameter 2.1, 2.8 and 4 meters where the length of the tank varies from 2.5 meters to 8.0 meters.

As a strategic reliable partner, HAL has been associating with Isro for India's prestigious space programs for the last five decades. HAL has delivered critical structures, tanks, satellite structures for the PSLV, GSLV-Mk-II and GSLV-Mk III launch vehicles. Various projects like PS2/GS2 integration, semi-cryo structure fabrication and manufacturing of cryo and semi-cryo engines are being taken up at HAL, for which installation and commissioning of unique infrastructures are nearing completion.

HAL has supported ISRO with the developmental phase of Crew Module Atmospheric Re-entry Experiment, PAD abort test for crew escape for human space the mission and is currently supplying hardware for the full-fledged launch vehicle GSLV Mk-III for the Gaganyaan programme.

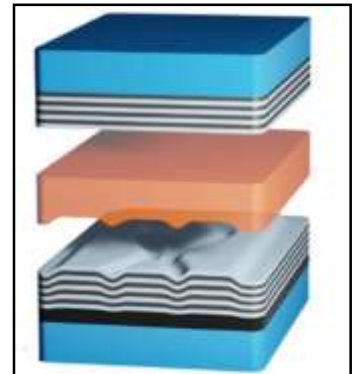
<https://www.indiatoday.in/science/story/hal-delivers-heaviest-semi-cryogenic-propellant-tank-to-isro-1861990-2021-10-07>



The tank will be used in the Mk-III launch vehicle for future missions. (Photo: HAL)

'Liquid' light shows social behaviour

Could photons, light particles, really condense? And how will this "liquid light" behave? Condensed light is an example of a Bose-Einstein condensate: The theory has been there for 100 years, but University of Twente researchers have now demonstrated the effect even at room temperature. For this, they created a micro-size mirror with channels in which photons actually flow like a liquid. In these channels, the photons try to stay together as group by choosing the path that leads to the lowest losses, and thus, in a way, demonstrate "social behavior." The results are published in *Nature Communications*.



Mirror structures with channels. Credit: University of Twente

A Bose-Einstein condensate (BEC) is typically a sort of wave in which the separate particles can not be seen anymore: There is a wave of matter, a superfluid that typically is formed at temperatures close to absolute zero. Helium, for example, becomes a superfluid at those temperatures, with remarkable properties. The phenomenon was predicted by Albert Einstein almost 100 years ago, based on the work of Satyendra Nath Bose; this state of matter was named for the researchers. One type of elementary particle that can form a Bose-Einstein condensate is the photon, the light particle. UT researcher Jan Klärs and his team developed a mirror structure with channels. Light traveling through the channels behaves like a superfluid and also moves in a preferred direction. Extremely low temperatures are not required in this case, and it works at room temperature.

The structure is the well-known Mach-Zehnder interferometer, in which a channel splits into two channels, and then rejoins again. In such interferometers, the wave nature of photons manifests, in which a photon can be in both channels at the same time. At the reunification point, there are now two options: The light can either take a channel with a closed end, or a channel with an open end. Jan Klärs and his team found that the liquid decides for itself which path to take by adjusting its frequency of oscillation. In this case, the photons try to stay together by choosing the path that leads to the lowest losses—the channel with the closed end. You could call it "social behavior," according to researcher Klärs. Other types of bosons, like fermions, prefer staying separate.

The mirror structure somewhat resembles that of a laser, in which light is reflected back and forth between two mirrors. The major difference is in the extremely high reflection of the mirrors: 99.9985 percent. This value is so high that photons don't get the chance to escape; they will be absorbed again. It is in this stadium that the photon gas starts taking the same temperature as room temperature via thermalization. Technically speaking, it then resembles the radiation of a black body: Radiation is in equilibrium with matter. This thermalization is the crucial difference between a normal laser and a Bose-Einstein condensate of photons.

In superconductive devices at which the electrical resistance becomes zero, Bose-Einstein condensates play a major role. The photonic microstructures now presented could be used as basic units in a system that solves mathematical problems like the Traveling Salesman problem. But primarily, the paper shows insight into yet another remarkable property of light.

More information: Mario Vretenar et al, Modified Bose-Einstein condensation in an optical quantum gas, *Nature Communications* (2021). DOI: [10.1038/s41467-021-26087-0](https://doi.org/10.1038/s41467-021-26087-0)

Journal information: [Nature Communications](https://phys.org/news/2021-10-liquid-social-behaviour.html)
<https://phys.org/news/2021-10-liquid-social-behaviour.html>

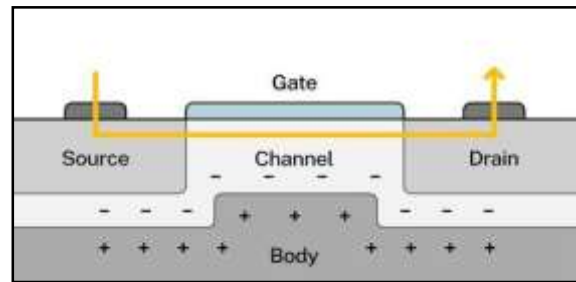
Team develops sensitive new way of detecting transistor defects

By Ben P. Stein

Researchers at the National Institute of Standards and Technology (NIST) and collaborators have devised and tested a new, highly sensitive method of detecting and counting defects in transistors—a matter of urgent concern to the semiconductor industry as it develops new materials for next-generation devices. These defects limit transistor and circuit performance and can affect product reliability.

A typical transistor is, for most uses, basically a switch. When it's on, current flows from one side of a semiconductor to the other; switching it off stops the current. Those actions respectively create the binary 1s and 0s of digital information.

Transistor performance critically depends on how reliably a designated amount of current will flow. Defects in the transistor material, such as unwanted "impurity" regions or broken chemical bonds, interrupt and destabilize the flow. These defects can manifest themselves immediately or over a period of time while the device is operating.



During normal transistor operation, a conductive channel (controlled by the gate) forms between the source and drain, allowing a current to flow. Credit: Sean Kelley/NIST

Over many years, scientists have found numerous ways to classify and minimize those effects.

But defects become harder to identify as transistor dimensions become almost unimaginably small and switching speeds very high. For some promising semiconductor materials in development—such as silicon carbide (SiC) instead of silicon (Si) alone for novel high-energy, high-temperature devices—there has been no simple and straightforward way to characterize defects in detail.

"The method we developed works with both traditional Si and SiC, allowing us for the first time to identify not only the type of defect but the number of them in a given space with a simple DC measurement," said NIST's James Ashton, who conducted the research with colleagues at NIST and Pennsylvania State University. They published their results on October 6 in the *Journal of Applied Physics*. The research focuses on interactions between the two kinds of electrical charge carriers in a transistor: Negatively charged electrons and positively charged "holes," which are spaces where an electron is missing from the local atomic structure.

When a transistor is functioning correctly, a specific electron current flows along the desired path. (Holes can also form a current. This research explored electron current, the most common arrangement.) If the current encounters a defect, electrons are trapped or displaced, and can then combine with holes to form an electrically neutral area in a process known as recombination.

Each recombination removes an electron from the current. Multiple defects cause current losses that lead to malfunction. The goal is to determine where the defects are, their specific effects, and—ideally—the number of them.

"We wanted to provide manufacturers with a way to identify and quantify defects as they are testing different new materials," said NIST co-author Jason Ryan. "We did that by creating a physics model of a defect-detection technique that has been widely used but poorly understood until now. We then conducted proof-of-principle experiments that confirmed our model."

In a classic metal oxide semiconductor design (see figure), a metal electrode called the gate is placed atop a thin insulating silicon dioxide layer. Below that interface is the bulk body of the semiconductor.

On one side of the gate is an input terminal, called the source; on the other is an output (drain). Scientists investigate the dynamics of current flow by changing the "bias" voltages applied to the gate, source and drain, all of which affect how current moves.

In the new work, the NIST and Penn State researchers concentrated on one particular region that is typically only about 1 billionth of a meter thick and a millionth of a meter long: The boundary, or channel, between the thin oxide layer and the bulk semiconductor body.

"This layer is hugely important because the effect of a voltage on the metal overtop of the oxide of the transistor acts to change how many electrons are within the channel region under the oxide; this region controls the resistance of the device from source to drain," Ashton said. "The performance of this layer is dependent on how many defects exist. The detection method we investigated was previously unable to determine how many defects were within this layer."

One sensitive method to detect defects in the channel is called electrically detected magnetic resonance (EDMR), which is similar in principle to medical MRI. Particles such as protons and electrons have a quantum property called spin, which makes them act like tiny bar magnets with two opposite magnetic poles. In EDMR, the transistor is irradiated with microwaves at a frequency about four times higher than a microwave oven. Experimenters apply a magnetic field to the device and gradually vary its strength while measuring the output current.

At exactly the right combination of frequency and field strength, electrons at defects "flip"—reverse their poles. This causes some to lose enough energy that they recombine with holes at defects in the channel, reducing the current. The channel activity can be hard to measure, however, because the high volume of "noise" from recombination in the bulk of the semiconductor.

To focus exclusively on activity in the channel, researchers use a technique called bipolar amplification effect (BAE), which is achieved by arranging the bias voltages applied to the source, gate and drain in a particular configuration (see figure). "So because of the biasing we use in BAE and because we measure current levels at the drain," Ashton said, "we can eliminate interference from other things going on in the transistor. We can select just defects that we care about within the channel."

The exact mechanism by which BAE operates was not known until the team developed its model. "The only measurement results were qualitative—that is, they could tell the kinds of defects in the channel but not the number," said co-author Patrick Lenahan, a distinguished professor of engineering science and mechanics at Penn State.

Before the model of BAE, the scheme was used strictly as a resource for applying voltages and controlling currents for EDMR measurements, which is useful for a more qualitative defect identification. The new model enables BAE as a tool to quantitatively measure the number of defects and to do so with just currents and voltages. The parameter of importance is the interface defect density, which is a number that describes how many defects are within some area of the semiconductor-oxide interface. The BAE model gives researchers a mathematical description of how the BAE current is related to the defect density.

The model, which the researchers tested in a set of proof-of-concept experiments on metal oxide semiconductor transistors, makes quantitative measurements possible. "Now we can account for the variation in charge carrier distribution throughout the channel region," Ashton said. "This opens up the possibilities of what can be measured with a simple electrical measurement."

"This technique can provide unique insight into the presence of these destabilizing transistor defects and a path to mechanistic understanding of their formation," said Markus Kuhn, formerly at Intel and now senior director of semiconductor metrology and fellow at Rigaku, who was not involved in the research. "With such knowledge, there would be greater opportunity to control and reduce them in order to improve transistor performance and reliability. This would be an opportunity to further enhance design of the chip circuitry and device performance leading to better performing products."

More information: James P. Ashton, Stephen J. Moxim, Ashton D. Purcell, Patrick M. Lenahan, and Jason T. Ryan. A quantitative model for the bipolar amplification effect: A new method to determine



Fri, 08 Oct 2021

Researchers observe laser-driven tin ejecta microjet interactions

By Michael Padilla

The experimental observations of high-velocity particle-laden flow interactions has been sparse, given the difficulty of generating high-velocity flows of many particles. These observations play an important role in understanding a wide range of natural phenomena, ranging from planetary formation to cloud interactions.

That is, until now. In experiments conducted at the Omega Laser Facility at the University of Rochester's Laboratory for Laser Energetics (LLE), researchers from Lawrence Livermore National Laboratory (LLNL) have shown for the first time sequences of X-ray radiography images of two interacting tin ejecta microjets.

The work has been published by *Physical Review Letters* and selected as an Editor's Suggestion with LLNL physicist Alison Saunders serving as lead author.

"These interactions had never been observed before, and so we didn't really know what to expect," Saunders said. "It was surprising to see the lower-density jets from the lower shock pressure pass through each other completely unchanged. This can be thought of as diffuse particle streams passing through each other."

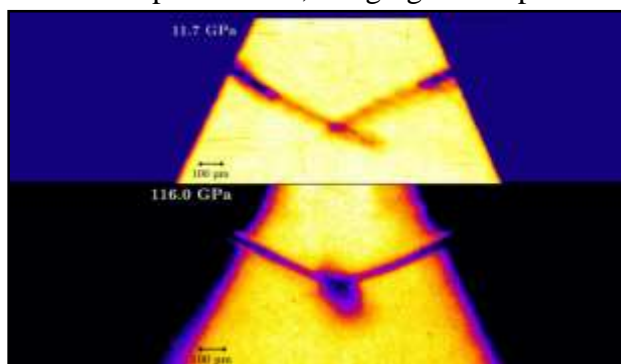
Saunders said it also was a surprise to see the higher-density jets from the higher shock pressure interact strongly.

"We call that the 'water-hose experiment' because it looked like we were spraying two water hoses at each other and watching them splash when they hit each other," she said.

Colliding tin ejecta microjets

The team took the first sequence of radiographic images of colliding tin ejecta microjets at two different shock pressures. Ejecta microjets are micron-scale jets of small particles that travel at extreme velocities (velocities in excess of several kilometers per second, or several thousands of miles per hour). The team observed two regimes of interaction behavior as a function of shock pressure. At a shock pressure of 11.7 gigapascals, the jets travel at 2.2 km/s and pass through each other unattenuated, whereas at a pressure of 116.0 gigapascals, the now higher-density jets travel at velocities of 6.5 km/s and interact strongly, forming a corona of material around the interaction region.

"We also use a simplified collisional model in a radiation hydrodynamics code to model the interactions and find that the model is incapable of reproducing the exact interaction behavior we observe, suggesting that more experiments are needed to understand the physics driving ejecta microjet interaction behavior," Saunders said.



This graphic depicts sequences of radiographs of interacting planar tin ejecta microjets. Credit: Lawrence Livermore National Laboratory

The researchers used OMEGA Extended Performance (EP) with its short-pulse capability to image the jet interactions. Two long-pulse lasers drive shocks into two tin samples which are imprinted with triangular grooves on their free surfaces. As the shocks break out from the free surfaces, the groove features invert to form planar microjets of material propagating toward each other.

At a later time, the EP short-pulse beam incident on a microwire generates a bright burst of X-rays that allows the team to take an X-ray radiograph of the jets as they collide. The X-ray radiograph also provides quantitative information about the jets pre- and post-collision, such as jet densities and particle packing within the jets.

"The work provides the first images of ejecta microjet interactions and with that, raises a lot of interesting questions about the physics dominating the collisional behavior," Saunders said, adding that tin is a material that is known to melt over the shock pressures explored in this experiment. "We have reason to believe that the lower-pressure jets may contain more solid material than the jets from the high-pressure shock drives."

Saunders said this begs the question of whether the difference in interaction behavior that was observed between the two cases is a result of the difference in material phase, or other jet characteristics, such as density, velocity or particle-size distributions. The collisions occur with small particles traveling at extreme velocities and involve extremely high strain-rate mechanics.

The team intends to resolve some of the physics uncertainties and understand what is driving the differences that were observed in interaction dynamics: density, material phase, particle-size distributions, elasticity of collisions or a combination of all of these. As a part of that, the team wants to expand the diagnostic capabilities to include different measurements that might be able to measure some of these properties directly.

More information: A. M. Saunders et al, Experimental Observations of Laser-Driven Tin Ejecta Microjet Interactions, *Physical Review Letters* (2021). [DOI: 10.1103/PhysRevLett.127.155002](https://doi.org/10.1103/PhysRevLett.127.155002)

Journal information: [Physical Review Letters](https://phys.org/news/2021-10-laser-driven-tin-ejecta-microjet-interactions.html)
<https://phys.org/news/2021-10-laser-driven-tin-ejecta-microjet-interactions.html>



Fri, 08 Oct 2021

Explainer: What researchers say about the long-term effects of COVID-19

By Manojna Maddipatla, Editing by Nancy Lapid, Caroline Humer and Bill Berkrot

New York, Oct 7 (Reuters) - The World Health Organization (WHO) this week issued a definition for "long COVID," a term used to describe the persistent health problems that affect some survivors of COVID-19. Scientists are still working to understand the syndrome. Here is what they know so far.

How does the WHO define long covid?

The WHO defines long COVID as a condition with at least one symptom that usually begins within three months from the onset of confirmed or probable infection with the coronavirus, persists for at least two months, and cannot be explained by another diagnosis. Symptoms may start during the infection or appear for the first time after the patient has recovered from acute illness.

Among the most common persistent symptoms are fatigue, shortness of breath, and cognitive problems. Others include chest pain, problems with smell or taste, muscle weakness and heart palpitations. Long COVID generally has an impact on everyday functioning.

The WHO's definition may change as new evidence emerges and as understanding of the consequences of COVID-19 continues to evolve. A separate definition may be applicable for children, the agency said.

How common is long covid?

The exact number of affected people is not known. A study from Oxford University of more than 270,000 COVID-19 survivors found at least one long-term symptom in 37%, with symptoms more frequent among people who had required hospitalization.

A separate study from Harvard University involving more than 52,000 COVID-19 survivors whose infections had been only mild or asymptomatic suggests that long COVID conditions may more often affect patients under age 65.

More than 236 million infections caused by the coronavirus have been reported so far, according to a Reuters tally.

What else do studies show on long covid symptoms?

In a study published in the Lancet, Chinese researchers reported that 12 months after leaving the hospital, 20% to 30% of patients who had been moderately ill and up to 54% of those who were critically ill were still having lung problems.

The Harvard study also found that new diagnoses of diabetes and neurological disorders are more common among those with a history of COVID-19 than in those without the infection.

Do people recover from long covid?

Many symptoms of long COVID resolve over time, regardless of the severity of initial COVID-19 disease. The proportion of patients still experiencing at least one symptom fell from 68% at six months to 49% at 12 months, according to the study published in the Lancet.



The WHO said long COVID symptoms can change with time and return after showing initial improvement.

Do Covid-19 vaccines help with long covid?

Small studies have suggested that some people with long COVID experienced improvement in their symptoms after being vaccinated. The U.S. Centers for Disease Control and Prevention said more research is needed to determine the effects of vaccination on post-COVID conditions.

<https://www.reuters.com/business/healthcare-pharmaceuticals/what-researchers-say-about-long-term-effects-covid-19-2021-10-07/>

