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PUNE NEWS KAR

Tue, 22 June 2021

Pune: ARDE, HEMRL develop Canopy Severance System for LCA Tejas, ToT awarded to M/s GOCL Hyderabad

Pune: All modern aircraft are equipped with a Canopy Severance System (CSS), which is an escape path clearance system for the pilot in case of emergencies occurring on the aircraft.

State-of-the-art CSS has been developed ab-initio at Armament Research and Development Establishment (ARDE), Pune in association with High Energy Material Research Laboratory (HEMRL), Pune, for the indigenously developed LCA Tejas and Trainer Aircraft, HJT-36 Aircraft and HTT-40 Aircraft. It provides safe passage by pre-weakening/severing the canopy to facilitate the smooth escape of the pilot in the shortest possible time.

A Transfer of Technology (ToT) certificate award ceremony was held today at ARDE in the gracious presence of PK Mehta, Distinguished Scientist and Director General of Armament and Combat Engineering cluster of Defence Research and Development Organisation (DRDO). K D Deodhar, Sc. 'F', Head, CSS gave a brief introduction. Dr V Venkateswara Rao, Outstanding Scientist and Director, ARDE and KPS Murthy, Outstanding Scientist and Director, HEMRL handed over the certificate to S Pramanik, Chairman and Managing Director (CMD) and R Chandra, General Manager (GM) of M/s GOCL Corporation Ltd., effecting Transfer of Technology (ToT) for the Production of CSS for the indigenously developed aircraft. Heads of associated defence establishments were also present for the function.

CSS has two independent sub-systems. The first one is the In-flight Egress System (IES) for in-flight emergencies, which is integrated with the seat ejection operation and the second one is the Ground Egress System (GES) for on-ground emergencies, which is independent of seat ejection. CSS works on the principle of controlled propagation of detonation using explosive mechanical energy. It consists of critical mechanical and explosive components qualified to military-grade requirements and demonstrating high reliability. CSS for LCA Tejas and trainer aircraft were tested successfully in seat ejection trials at M/s Martin Baker Co., London, UK and M/s. Zvezda, Moscow, Russia respectively. The CSS design has been cleared by Certifying Agency RCMA (AA), Pune and CEMILAC, Bangalore has issued Type Approval. Third-party QA coverage during the entire development as well as in production thereafter has been provided by ORDAQA (A), Pune, a local unit of DGAQA.

License Agreement of ToT was signed with M/s GOCL as a Production Agency. All the ToT documents were handed over and training was imparted to GOCL personnel. Complete handholding till the transfer of technology, including know-how and know-why was ensured by rigorous qualification testing which was approved by a third party QA Agency, ORDAQA(A), Pune. The service use of GOCL produced CSS sets were cleared by RCMA (AA), Pune as a Certifying Agency.

M/s GOCL has already supplied 08 Nos of CSS after fulfilling all rigorous qualification and functional tests as applicable for Air-Borne systems. Further orders are being executed by the company.

Presently, CSS has been integrated on 25 Tejas, 12 HJT-36, 2 LCA Trainer and Naval versions and the two HTT-40 Aircraft. All aircraft are undergoing test flights with CSS onboard. HAL has approached for production and supply of 105 CSS sets for LCA and 75 CSS sets for HTT-40 aircraft within four years. ARDE and HEMRL are now capable of developing CSS for any Military Aircraft as required by Indian Air Force.

https://www.punekarnews.in/pune-arde-hemrl-develop-canopy-severance-system-for-lca-tejas-tot-awarded-to-m-s-gocl-hyderabad/

Business Standard

Tue, 22 June 2021

What is ASTRA missile?

Astra is an all-weather air-to-air missile developed by the Defence Research and Development Organisation (DRDO). The indigenously developed beyond-visual-range missile is the first air-to-air missile developed in India. The missile was built to engage and destroy aerial targets, which have high maneuverability and supersonic speed. The missile is capable of advanced air combat, which allows it to engage in multiple high-performance targets.

The missile will be integrated with Indian Air force's Su-30MKI and Mirage 2000, and MiG-29 and MiG-21 Bison fighter jet. The missile will also equip Hindustan Aeronautics Limited's (HAL's) Tejas fighter jets as well as the Indian Navy's Sea Harrier jet fighter.

Features and design

Astra is 3.6 m long and with a diameter of 178 mm weighing 154 kg. The missile uses an inertial guidance system driven by a fibre optic gyroscope with terminal guidance through active radar homing. Astra missile has a range of 10 to 110 km. It is equipped with electronic counter-countermeasures to allow functioning even during enemy attempts to block the seeker using electronic countermeasures. The missile can be launched in both autonomous and buddy mode operation. It can lock on to its target before or after it is fired.

Development of Astra missile

Preliminary work on the project started in 1990. The missile was being developed under Integrated Guided Missile Development Programme (IGMDP) of the Ministry of Defence (MoD). It was made public for the first time at the Aero India 1998. The Mk-1 variant of the missile was first tested in May 2003 and was officially sanctioned in 2004. A budget of Rs 955 crore was sanctioned and DRDO was tasked with leading the project with assistance from HAL and Electronics Corporation of India Limited. The missile underwent series of trials before completing final development trials in September 2017, after which it was cleared for production at Bharat Dynamics Limited's manufacturing facility in Bhanur, Telangana.

New variants of Astra missile

After Asta Mark 1, three new variants are being planned for the future — Astra IR close combat missile for shorter range of up to 80 km, Astra Mark 2 with a range of 160 km, and Astra Mark 3 with a maximum range of 350 km.

https://www.business-standard.com/about/what-is-astra-missile#collapse

Tue, 22 June 2021

IAF plans more EMB-145 based Netra 2.0 AWACS

Air Chief Marshal RKS Bhadauria, Speaking after reviewing the Combined Graduation Parade (CGP) at the Air Force Academy in Dundigal in Hyderabad, said that the Indian Air Force (IAF) is looking to procure more ERJ145 based Netra Airborne Early Warning and Control System developed by DRDO to beef up its Indigenous AWACS fleet capabilities which are grossly inadequate to fight a two-front war with Pakistan and China.

He confirmed that this will be over 6 Ex-Air India Airbus A320 that are being planned to be converted into Netra 2.0 AWACS platform using new upgraded Desi AESA Radar developed in India by DRDO. Three ERJ145 based Netra AEW&CS were procured by India and two are flying with IAF and one is still retained by DRDO to be used as Test Bed for the future program, which eventually might join IAF at a later stage.

Brazilian Embraer company previously faced corruption charges in India, related to alleged kickbacks involved in the original EMB-145 AEW&C deal, but IAF still has been procuring directly from the company all the spares required the maintain the present fleet, it's still not clear if IAF will be procuring additional EMB-145 platforms directly from the Embraer or from the commercial market. IAF also has plans for Six Airbus A330 based AWACS post-2030 with mast-mounted rotodome based on the indigenous radar for 360-degree coverage will also be pursued at a later stage.

https://www.eletimes.com/iaf-plans-more-emb-145-based-netra-2-0-awacs

The Indian EXPRESS

Tue, 22 June 2021

Parliamentary panel holds meeting on glaciers, seeks to streamline research, warning systems

The committee has been examining glacier management in the country — including the monitoring of glaciers and glacial lakes, particularly glacial lake outbursts leading to flash floods in the Himalayan region — since January this year

By Esha Roy

New Delhi: The Parliamentary Standing Committee on Water Resources, chaired by senior BJP MP Dr Sanjay Jaiswal, held a meeting on Monday in which the possibility of a convergence of data and early warning systems for avalanches and glacier management systems was explored.

The committee has been examining glacier management in the country — including the monitoring of glaciers and glacial lakes, particularly glacial lake outbursts leading to flash floods in the Himalayan region — since January this year. The standing committee will now look into the possibility of setting up an inter-nodal agency or mechanism to streamline research as well as warning systems.

The standing committee will now look into the possibility of setting up an inter-nodal agency or mechanism to streamline research as well as warning systems.

"Our last meeting took place in January. Even before the Chamoli avalanche took place. We wanted to look at the issue because of the frequent landslides and natural disasters in the Himalayas. But after Chamoli took place, the issue became urgent and of great importance," said a source.

Thirteen MPs turned up for Monday's meeting, and listened to presentations from the Ministry of Environment, Forests and Climate Change, the Department of Science and Technology, the Wadia Institute of Himalayan Geology — which has a glaciology centre — and DRDO's Defence Geo Informatics Research Establishment.

In the past, the standing committee has examined observations made by the Defence and Home ministries, as well the Ministry of External Affairs to examine how glacial activity in China could affect the country.

"There is a lot of work being done by different institutes in the country and a lot of data on the issue is collected. But all these institutes work in silos and there is no data sharing at all. We will see if it is possible to work towards a convergence of this data on a single platform which will not only help in understanding and monitoring glacial activity, but also help mitigate incidents such as (the avalanche in) Chamoli. We will consider the possibility of setting up an inter-nodal agency for more data sharing,'' a source said.

Members of the committee also discussed the role of state governments, and how this can shift from a mainly reactive role to a more proactive one in aiding mitigation of disasters.

With inadequate monitoring of glaciers in India right now, the panel discussed the possibility of establishing a separate Centre of Glaciology (currently only the Wadia institute has one department), the establishment of a network of automated weather stations across the Himalayas, the collection of hydrological data and a standardised protocol for local district officials and administration and the possibility of having hydropower project proponents establish their own early warning systems to disseminate warnings to the local population.

https://indianexpress.com/article/india/parliamentary-panel-holds-meeting-on-glaciers-seeks-to-streamline-research-warning-systems-7369685/

COVID 19: DRDO's Contribution

नवभारत टाइम्स

Tue, 22 June 2021

वाराणसी: कोरोना की तीसरी लहर से निपटने की तैयारी, DRDO अस्पताल में बनेगा 250 बेड का पीडियाट्रिक वार्ड

वाराणसी के बीएचयू में बना अस्थायी डीआरडीओ कोविड अस्पताल को कोरोना की थर्ड वेव के लिए तैयार करने की कवायद शुरू हो गई है। डीआरडीओ अस्पताल में 250 बेड का पीडियाट्रिक वार्ड तैयार किया जाएगा।

By Raghavendra Shukla, अभिषेक जायसवाल

हाइलाइट्स:

- *कोरोना की तीसरी लहर से जंग के लिए पीएम के संसदीय क्षेत्र वाराणसी में तैयारी जारी है*
- *बीएचयू के एम्फीथिएटर मैदान में बने पंडित राजन मिश्र डीआरडीओ कोविड अस्पताल को भी तैयार किया जाएगा*
- *डीआरडीओ अस्पताल में 250 बेड का पीडियाट्रिक वार्ड बनाया जाएगा*
- *अफसरों ने इसकी इसकी तैयारी भी शुरू कर दी है*

वाराणसी: कोरोना की तीसरी लहर से जंग के लिए पीएम के संसदीय क्षेत्र वाराणसी में तैयारी जारी है। बीएचयू के एम्फीथिएटर मैदान में बने पंडित राजन मिश्र डीआरडीओ कोविड अस्पताल को भी तैयार किया जाएगा। डीआरडीओ अस्पताल में 250 बेड का पीडियाट्रिक वार्ड बनाया जाएगा। अफसरों ने इसकी इसकी तैयारियां भी शुरू कर दी हैं। एनबीटी ऑनलाइन से बातचीत में वाराणसी के डीएम कौशल राज शर्मा ने बताया कि वाराणसी के डीआरडीओ अस्पताल में पीडियाट्रिक वार्ड बनाने के लिए प्लान तैयार किया गया है। दिल्ली में डीआरडीओ के सचिव को पत्र के जरिए इसका डिटेल प्लान सझा किया गया है।

200 बेड में होगी वेंटिलेटर की सुविधा

बीएचयू के डीआरडीओ अस्पताल में 250 बेड के पीडियाट्रिक वार्ड में 200 बेड पर वेंटिलेटर की व्यवस्था के साथ 50 ऑक्सिजन युक्त बेड तैयार किए जाएंगे। जुलाई के अंतिम सप्ताह में इसके लिए जरूरी उपकरण भी आ जाएंगे। उसके बाद इसे पूरी तरह से थर्ड वेव से जंग के लिए तैयार किया जाएगा।

शहर में तैयार होंगे कुल 650 बेड

डीएम कौशल राज शर्मा ने बताया कि वाराणसी में थर्ड वेब की संभावना के मद्देनजर शहर में कुल 650 बेड तैयार किए जा रहे हैं। इसमें डीआरडीओ अस्पताल के अलावा बीएलडब्ल्यू, बीएचयू अस्पताल और ईएसआई अस्पताल में 400 बेड बनाए जाएंगे। सभी अस्पताल भारत सरकार के अलग-अलग मंत्रालय के अधीन संचालित हैं। इन सभी को मंत्रालयों से हरी झंडी भी मिल गई है।

https://navbharattimes.indiatimes.com/state/uttar-pradesh/varanasi/varanasi-drdo-hospital-will-be-ready-for-third-wave-make-pediatric-ward-of-250-beds/articleshow/83708627.cms

FINANCIAL EXPRESS
Read to Lead

Tue, 22 June 2021

DRDO-DRL's 2DG drug for Covid-19 treatment gets delayed

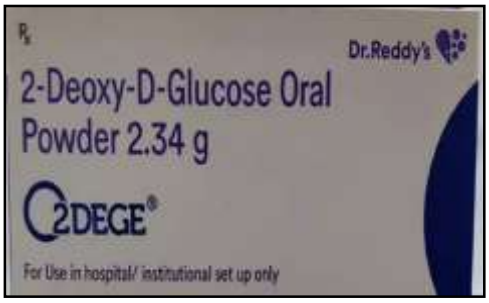
In an email response to Financial Express Online query, DRL's ccompany spokesperson says: "Dr Reddy's has not announced the commercial launch of 2-DG yet. We will continue to share updates as they become available."

By Huma Siddiqui

Wait for the 2-deoxy-D-glucose (2-DG), could get longer. This anti-COVID-19 therapeutic drug 2-deoxy-D-glucose (2-DG) was supposed to be available commercially mid-June, however, the Dr Reddy's Laboratories (DRL), Hyderabad, has no definitive date for this yet.

When will it be available commercially?

In an email response to Financial Express Online query, DRL's ccompany spokesperson says: "Dr Reddy's has not announced the commercial launch of 2-DG yet. We will continue to share updates as they become available."



During the surge in cases, those looking for the miracle drug were asked to be in touch with DRL which was sending directly to the hospitals on presentation of the prescriptions. (Photo source: IE)

Sharing more about the much awaited indigenous treatment for COVID-19, the company spokesperson adds, "2-DG is an oral antiviral drug that can be administered only upon prescription to hospitalised moderate to severe COVID-19 patients as adjunct (add on) therapy, alongside the existing standard of care. Details of the clinical trials and emergency use approval were released by the DRDO (Defence Research and Development Organisation) on May 8, 2021."

Role of DRL

The 2-DG has, according to DRDO, been jointly developed by Institute of Nuclear Medicine and Allied Sciences (INMAS), and Dr Reddy's Laboratories (DRL), Hyderabad.

This drug was officially released by defence minister Rajnath Singh last month.

During the surge in COVID-19 positive cases, on May 25, 2021, in an email response to a query about the availability of the miracle drug, the DRL company spokesperson had said, "commercial launch and supply of 2DG to major Government and private hospitals is expected to commence in mid-June."

Similar information was also shared on social media platforms too.

As reported earlier, the official spokesperson of Dr Reddy's in an email had mentioned that "2-DG is an oral drug. And this has to be administered upon prescription to the hospitalised moderate to severe COVID-19 patients. It will be in addition to the existing standard of care."

Availability at the pharmacies

During the surge in cases, those looking for the miracle drug were asked to be in touch with DRL which was sending directly to the hospitals on presentation of the prescriptions.

Once the drug is available commercially it will be supplied to the hospitals.

Will it be available OTC & pricing?

There is no clarity on this so far. The DRL spokesperson had told Financial Express Online that the pricing would be affordable and will be accessible to as many patients as possible.

Debate over the efficacy

DRDO official told Financial Express Online that DRL was the development partner with DRDO in the study on COVID-19 patients.

DRL has been a long -standing industry partner of DRDO for 2-DG clinical applications since 2004.

This drug has successfully completed the Phase-3 clinical trials for radiotherapy of brain tumor patients.

As reported earlier, no other institute was involved in the trials of this drug.

The story so far …

The official statement issued by the Ministry of Defence on May 8, 2021, said that the trials for the drug had started last April during the first wave of the global pandemic.

In an official statement issued by the Ministry of Defence (May 8, 2021), this drug has been jointly developed and produced by DRDO and DRL.

The statement said that the drug has undergone clinical trials, in which the scientists from INMAS had carried out experiments with the help of Centre for Cellular and Molecular Biology based in Hyderabad. And the results indicated that there was a faster recovery of hospitalized patients and it also reduced dependency on supplemental oxygen.

https://www.financialexpress.com/lifestyle/health/drdo-drls-2dg-drug-for-covid-19-treatment-gets-delayed/2275488/

अमर उजाला

Tue, 22 June 2021

जिला अस्पताल में स्थापित हुआ ऑक्सीजन प्लांट

सुल्तानपुर: सांसद मेनका गांधी की पहल पर जिला अस्पताल में डीआरडीओ ने ऑक्सीजन प्लांट तैयार कर दिया है।

कोरोना की तीसरी लहर से पहले बनकर तैयार ऑक्सीजन प्लांट से प्रतिदिन 960 लीटर ऑक्सीजन की आपूर्ति होगी। प्लांट बनाकर तैयार करने वाली कंपनी जिला महिला अस्पताल के चिल्ड्रेन वार्ड में पाइप लाइन बिछाने का काम कर रही है।

पूर्व केंद्रीय मंत्री व सांसद मेनका गांधी के प्रयास से जिला अस्पताल में ऑक्सीजन प्लांट लगाने की योजना बनाई गई थी। सांसद ने प्लांट लगाने के लिए डीआरडीओ से संपर्क किया था।

सांसद की पहल पर डीआरडीओ ने ऑक्सीजन प्लांट लगाने की जिम्मेदारी ट्राइडेंट कंपनी को सौंपी थी। पिछले दिनों से लगातार ऑक्सीजन प्लांट स्थापित करने के लिए कार्य चल रहा था। दो दिन पहले ही ऑक्सीजन प्लांट लगाने के लिए टैंक के साथ ही अन्य उपकरण जिला अस्पताल पहुंचे थे।

कंपनी से आए इंजीनियर दिन-रात काम में लगे थे। सोमवार को प्लांट करीब-करीब बनकर तैयार हो गया। प्लांट से जिला महिला अस्पताल में बनाए गए चिल्ड्रेन वार्ड में ऑक्सीजन सप्लाई के लिए पाइप लाइन बिछाई जा रही थी।

सांसद के प्रतिनिधि रणजीत कुमार ने बताया कि कोयंबटूर से ऑक्सीजन प्लांट पहुंचा था और करीब बनकर तैयार हो चुका है।

सांसद प्रतिनिधि ने बताया कि यूपीडा की ओर से पहले ही ऑक्सीजन प्लांट लगाने के लिए ट्राइडेंट कंपनी को भुगतान कर दिया गया था। सीएमएस डॉ. एससी कौशल ने बताया कि इस प्लांट से एक मिनट में 960 लीटर ऑक्सीजन उपलब्ध होगी।

https://www.amarujala.com/uttar-pradesh/sultanpur/oxygen-plant-established-in-district-hospital-sultanpur-news-lko583520348

जागरण

Tue, 22 June 2021

जींद के सिविल अस्पताल में आक्सीजन प्लांट का निर्माण कार्य शुरू, नहीं रहेगा संकट

तीसरी लहर से निपटने को लेकर स्वास्थ्य विभाग गंभीरता से काम कर रहा है। कोरोना की दूसरी लहर की तरह आक्सीजन संकट पैदा न हो इसलिए सिविल अस्पताल में आक्सीजन प्लांट का निर्माण कार्य सोमवार को शुरू हो गया।

जींद: कोरोना की संभावित तीसरी लहर से निपटने को लेकर स्वास्थ्य विभाग गंभीरता से काम कर रहा है। कोरोना की दूसरी लहर की तरह आक्सीजन संकट पैदा न हो, इसलिए सिविल अस्पताल में आक्सीजन प्लांट का निर्माण कार्य सोमवार को शुरू हो गया। अगले 10 दिनों में प्लांट बनकर तैयार हो जाएगा और उसके बाद आक्सीजन का उत्पादन शुरू हो जाएगा।

सिविल अस्पताल में आक्सीजन प्लांट स्थापित करने को लेकर सोमवार को एनएचएआइ के प्रोजेक्ट डायरेक्टर अभिजीत की अगुआई में एक टीम ने अस्पताल का दौरा किया। टीम ने सिविल अस्पताल में आक्सीजन प्लांट के लिए कई साइट देखी। आक्सीजन प्लांट को लेकर नियम यह है कि आक्सीजन प्लांट अस्पताल के आक्सीजन डिस्ट्रीब्यूशन सेंटर से 50 मीटर से ज्यादा दूरी पर नहीं हो और बिल्डिग से कम से कम पांच मीटर की दूरी पर जरूर हो। सिविल अस्पताल का आक्सीजन डिस्ट्रीब्यूशन सेंटर पुरानी बिल्डिग के पुराने एक्सरे रूम के पास बनाया गया है। इन तमाम चीजों को देखते हुए सोमवार को एनएचएआइ अधिकारियों ने यह तय किया कि अस्पताल की नई और पुरानी बिल्डिग के बीच बनी गैलरी के साथ आक्सीजन प्लांट स्थापित किया जाएगा।

डीआरडीओ देगा मशीनरी, एनएचएआइ बनाएगा ढांचा

सिविल अस्पताल में बनने वाले आक्सीजन प्लांट के लिए मशीनरी डीआरडीओ (डिफेंस रिसर्च एंड डेवलपमेंट आर्गेनाइजेशन) देगा। एनएचएआइ सिविल अस्पताल में आक्सीजन उत्पादन करने वाली मशीनरी के लिए ढांचा तैयार करेगा। प्लांट में बिजली की फिटिग लोक निर्माण विभाग की इलेक्ट्रिकल विग करेगी।

1000 लीटर प्रति मिनट क्षमता का होगा आक्सीजन प्लांट

सिविल अस्पताल में स्थापित होने वाला आक्सीजन उत्पादन प्लांट एक मिनट में 1000 लीटर आक्सीजन का उत्पादन करेगा। यह प्लांट शुरू हो जाने के बाद जींद के सिविल अस्पताल की पुरानी बिल्डिग में कोरोना या दूसरे मरीजों के लिए आक्सीजन सिलेंडरों की कोई जरूरत नहीं रह जाएगी। नई बिल्डिग में पहले ही आटोमेटिक आक्सीजन प्लांट लगा हुआ है, जिससे पूरी बिल्डिग में आक्सीजन की आटोमेटिक सप्लाई होती है। इस प्लांट में पानीपत स्थित आइओसी की रिफाइनरी से आक्सीजन गैस टैंकर से लाकर भरी जाती है।

अगले 10 दिन में शुरू हो जाएगा आक्सीजन उत्पादन : डॉ. गोपाल

सिविल अस्पताल के एसएमओ डा. गोपाल गोयल ने कहा कि एनएचएआइ अधिकारियों ने सोमवार को सिविल अस्पताल का दौरा कर यहां आक्सीजन उत्पादन प्लांट स्थापित करने की साइट को अंतिम रूप

दिया। अधिकारियों ने कहा कि अगले 10 दिन में सिविल अस्पताल में आक्सीजन प्लांट स्थापित कर इसमें आक्सीजन का उत्पादन शुरू कर दिया जाएगा।

https://www.jagran.com/haryana/jind-construction-work-of-oxygen-plant-started-in-jind-civil-hospital-and-there-will-be-no-crisis-21761303.html

प्रेसनोट डॉट इन

Sun, 20 June 2021

बूंदी में डीआरडीओ लगाएगा 1000 एलपीएम का ऑक्सीजन प्लांट

By डॉ. प्रभात कुमार सिंघल

बूंदी 19 जून 2021 कोरोना की दूसरी लहर में ऑक्सीजन को लेकर हुई किल्लत और तीसरी लहर की आशंकाओं के बीच केंद्र सरकार ने मेडिकल ऑक्सीजन प्लांट की संख्या बढ़ाने की दिशा में प्रयास तेज कर दिए हैं। इसी क्रम में रक्षा मंत्रालय के अधीन रक्षा अनुंसधान एवं विकास संगठन (डीआरडीओ) जिला अस्पताल में ऑक्सीजन प्लांट का लगाएगा वहीं ऑक्सीजन जनरेशन प्लांट के सिविल व इलेक्ट्रिक का कार्य एनएचआई द्वारा कराया जाना है। जानकारी के मुताबिक 1000 एलपीएम क्षमता के इस ऑक्सीजन प्लांट से प्रतिदिन 200 से अधिक सिलेंडर का उत्पादन हो सकेगा। इस संबंध में एनएचआई ने बूंदी जिला अस्पताल में जगह उपलब्ध कराने के लिए जिला कलक्टर को पत्र लिखा है।

गौरतलब है कि पिछले दिनों संसदीय प्रवास के दौरान चिकित्सीय सुविधाओं का जायजा लेने बूंदी चिकित्सालय पहुंचे लोकसभा अध्यक्ष ओम बिरला ने कहा था कि बूंदी जिला जल्द ही आक्सीजन उपलब्धता के क्षेत्र में आत्मनिर्भर होगा। केंद्र सरकार के स्तर बूंदी में आक्सीजन प्लांट स्थापित होने के बाद जिले में आक्सीजन की कोई कमी नहीं रहेगी। इस दौरान बिरला ने जिला कलक्टर व अन्य अधिकारियों से मेडिकल कॉलेज के निर्माण कार्य के बारे में भी जानकारी ली थी साथ ही टेंडर व्यवस्था जल्द पूरी कर मेडिकल कॉलेज व इससे संबद्ध चिकित्सालय का निर्माण कार्य जल्द प्रारंभ करवाने के निर्देश दिए थे। गौरतलब है कि मेडिकल कॉलेज निर्माण की कार्यकारी एजेंसी द्वारा निर्माण से संबंधित प्रक्रिया पूरी कर ली गई है, बूंदी में मेडिकल कॉलेज का सपना जल्द पूरा होगा।

https://www.pressnote.in/Kota_News_442438.html

Greater Kashmir

Tue, 22 June 2021

Govt designates DRDO Hospital as major Covid facility

By Zehru Nissa

Srinagar: In a major reprieve to patients, J&K Government has started admitting COVID19 patients at the 500-bed DRDO facility here, in order to restart routine patient care at SKIMS Soura and SMHS Hospital after months of halt.

LG Manoj Sinha inaugurates 500-bedded DRDO hospital at Khanmoh in Srinagar on Wednesday, 9 June 2021.Image source: DIPR

"We are planning to start non-emergency and routine healthcare at SKIMS Soura and SMHS Hospital this week," Additional Chief Secretary Health and Medical Education, Atal Dulloo said. He said the Health and Medical Education Department had already started admitting patients at the new temporary 500-bed DRDO Hospital at Khanmoh and more patients were being shifted to the new facility. "It is a state-of-art advanced healthcare set-up, specifically designed for the requirements of COVID19 patients," he said. Dulloo said that manpower for providing optimum care and treatment had been designated for the hospital. "A lot of staff, especially doctors, were recruited last week. Now we are in the process of recruiting technical and other categories of staff on fast track," he said.

The Hospital, he said, would take over the operations for treatment of COVID19 patients in a full-fledged manner enabling the department to start routine operations at other major hospitals which had been designated as COVID19 facilities.

Medical Superintendent DRDO Hospital, Dr Abdul Rasheed Parra said the hospital admitted six patients recently as trial, two of them on oxygen support. "We discharged three patients after they recovered," he said. Dr Parra said the hospital was capable of taking a major load of COVID19 patients and called the facility a "game changer". He said the DRDO Hospital has 375 ward beds, all having oxygen ports that can deliver upto 15 litre per minute. In addition, there are 125 ICU beds, all ventilator supported which can provide high flow oxygen. "We have convertible systems and can increase oxygen capacity in ward beds too if needed," he said.

At SKIMS Soura, OPDs and admissions, except emergencies, for all departments were closed down on 07 April. SMHS Hospital followed the practice soon after when it allocated its multiple wards to COVID19. Currently, COVID19 has taken over both of these general and advanced specialty Hospitals that form the core of the tertiary healthcare in Kashmir division and for many districts in Pir Panchal. Dulloo said healthcare for all was necessary and since the number of patients requiring admission for infection of SARS-CoV2 had decreased alleviating the burden on hospitals, the Government was in a position to restart routine work "to a great extent".

Currently, 112 COVID patients are admitted at SMHS Hospital, 118 at SKIMS Soura and 24 at SKIMS Medical College Hospital Bemina.

https://www.greaterkashmir.com/todays-paper/govt-designates-drdo-hospital-as-major-covid-facility

Defence News

Defence Strategic: National/International

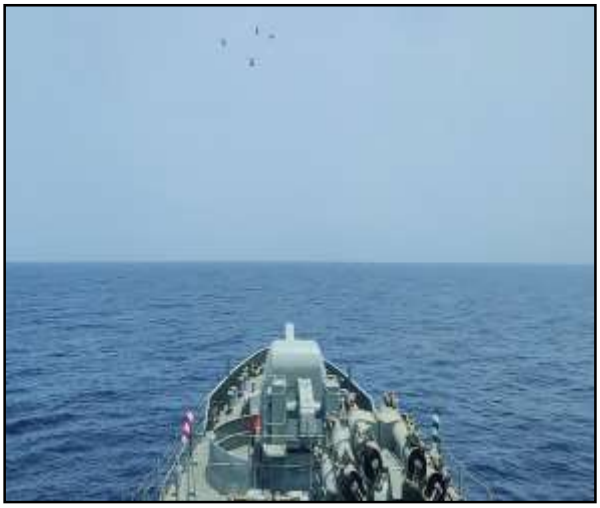
Press Information Bureau
Government of India

Ministry of Defence

Mon, 21 June 2021 2:27PM

EU-India Joint Naval Exercise

On 18-19 June 2021, the EU and India conducted a joint naval exercise in the Gulf of Aden. The exercise involved Indian Navy frigate INS Trikand, EU NAVFOR Somalia - Operation Atalanta assets, including Italian frigate Carabiniere (Atalanta's flagship) and Spanish frigate Navarra, French frigate Surcouf and French amphibious assault helicopter carrier Tonnerre. The exercise was based on the scenario of an anti-piracy operation. It included cross-deck helicopter landings, complex tactical evolutions at sea, live firing, a night-time joint patrol and a naval parade in the high seas off the coast of Somalia.



The EU and India are committed to a free, open, inclusive and rules-based order in the Indo-Pacific region, underpinned by respect for territorial integrity and sovereignty, democracy, rule of law, transparency, freedom of navigation and overflight, unimpeded lawful commerce, and peaceful resolution of disputes. They reaffirm the primacy of international law, including the United Nations Convention on Law of the Sea (UNCLOS).

In January 2021, the EU and India launched a dialogue on maritime security and agreed to deepen their dialogue and cooperation in this domain. The Indian Navy has been providing escort to World Food Programme chartered vessels, coordinated by EU NAVFOR Somalia - Operation Atalanta. The Indian Navy has previously participated in the Shared Awareness and Deconfliction (SHADE) conference, co-hosted by Operation Atalanta, whose assets conducted several joint exercises with Indian vessels in the past.

The EU and India intend to strengthen their operational cooperation at sea, including joint naval exercises and port calls, and to protect the sea-lanes of communication. They also intend to boost maritime domain awareness in the Indo-Pacific through mutual coordination and exchanges. The EU and India reaffirm their interest to enhance their cooperation in the field of maritime security in the Indo-Pacific region.

https://pib.gov.in/PressReleasePage.aspx?PRID=1729021

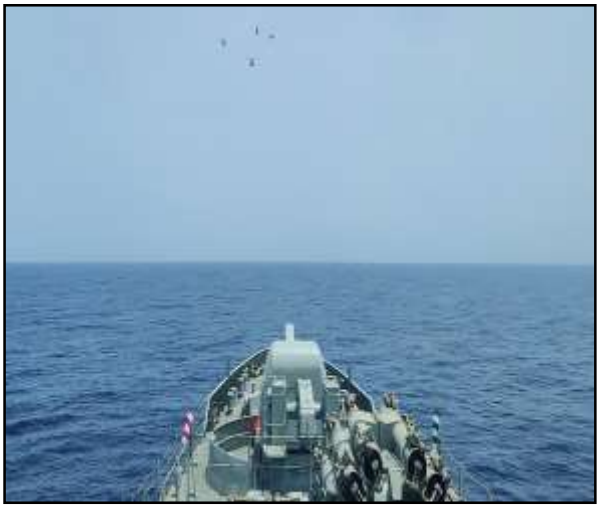
पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Mon, 21 June 2021 2:27PM

भारत-ईयू संयुक्त नौसैनिक युद्धाभ्यास

दिनांक 18-19 जून 2021 को यूरोपीय संघ और भारत ने अदन की खाड़ी में संयुक्त नौसैनिक अभ्यास किया। इस अभ्यास में भारतीय नौसेना फ्रिगेट आईएनएस त्रिकंद, यूरोपियन यूनियन नेवल फ़ोर्स सोमालिया -ऑपरेशन अटलांटा की परिसंपत्तियां शामिल थी, जिसमें इतालवी युद्धपोत कैराबिनियर (अटलांटा का फ्लैगशिप पोत) और स्पेनिश युद्धपोत नवारा, फ्रांसीसी युद्धपोत सुरकौफ और ज़ल-थल और नभ सभी के लिए कारगर फ्रांसीसी अटैक हेलीकाप्टर कैरियर टोनरे शामिल थे। यह अभ्यास एक समुद्री डकैती विरोधी अभियान के परिदृश्य पर आधारित था। इसमें क्रॉस-डेक हेलिकॉप्टर लैंडिंग, समुद्र में जटिल सामरिक युद्धाभ्यास, लाइव फायरिंग, रात के समय संयुक्त गश्ती और सोमालिया के तट के करीब खुले समुद्र में एक नौसैनिक परेड शामिल थी।



यूरोपीय संघ और भारत हिंद-प्रशांत क्षेत्र में एक स्वतंत्र, खुली, समावेशी और नियम आधारित व्यवस्था के लिए प्रतिबद्ध हैं, जो क्षेत्रीय अखंडता और संप्रभुता, लोकतंत्र, कानून के शासन, पारदर्शिता, नौवहन की स्वतंत्रता और ओवरफ्लाइट, बेरोक-टोक वैध वाणिज्य और विवादों के शांतिपूर्ण समाधान के सम्मान पर टिकी है। वे अंतर्राष्ट्रीय क़ानून पर युनाइटेड नेशन्स कन्वेंशन (यूएनसीएलओएस) ऑन लॉ ऑफ द सीज़ सहित अंतर्राष्ट्रीय कानून की प्रधानता पर बार बार जोर देकर इसकी पुष्टि करते हैं।

जनवरी 2021 में यूरोपीय संघ और भारत ने समुद्री सुरक्षा पर बातचीत शुरू की और इस क्षेत्र में अपनी बातचीत और सहयोग को गहरा करने पर सहमति जताई। भारतीय नौसेना ईयू नैवफ़ॉर सोमालिया-ऑपरेशन अटलांटा द्वारा समन्वित विश्व खाद्य कार्यक्रम के चार्टर्ड जहाजों को एस्कॉर्ट प्रदान कर रही है। भारतीय नौसेना ने पहले शेयर्ड अवेयरनेस एंड डिकॉन्फ्लिशन कॉन्फ्रेंस में भाग लिया है, जिसकी मेजबानी ऑपरेशन अटलांटा द्वारा की गई है, जिसकी परिसंपत्तियों ने अतीत में भारतीय जहाजों के साथ कई संयुक्त अभ्यास किए।

यूरोपीय संघ और भारत संयुक्त नौसैनिक अभ्यास और पोर्ट कॉल सहित समुद्र में अपने अभियान संबंधी सहयोग को मजबूत बनाने और संचार के समुद्री क्षेत्रों की रक्षा करने का इरादा रखते हैं। वे आपसी समन्वय और आदान-प्रदान के माध्यम से हिंद-प्रशांत क्षेत्र में समुद्री क्षेत्र जागरूकता को बढ़ावा देने का भी इरादा रखते हैं। यूरोपीय संघ और भारत हिंद-प्रशांत क्षेत्र में समुद्री सुरक्षा के क्षेत्र में सहयोग बढ़ाने के लिए अपनी रुचि की पुष्टि करते हैं।

https://pib.gov.in/PressReleasePage.aspx?PRID=1729144

Hindustan Times

Tue, 22 June 2021

Indian Army and Navy favour theatre commands, Air Force plays the lone ranger

While the Indian Army and Navy are in favour of military theatre commands, the Indian Air Force has issues over division of its air assets, nomenclature of commands, leadership of theatre commands and dilution of powers of Chiefs

By Shishir Gupta

Chief of Defence Staff General Bipin Rawat has called a meeting on Wednesday of the tri-services and other stake holders to understand their concerns over theatre commands and iron out differences before working towards the raising of maritime and air defence commands this year. The ministry of defence had accorded acceptance in principle to theatre commands in 2017 with Prime Minister Narendra Modi handing over the mandate of reorganization to Gen Rawat.

Prime Minister Narendra Modi talking to Gen Bipin Rawat before he took over as Chief of Defence Staff with the mandate of raising theatre commands.

Earlier this month, after a presentation, defence minister Rajnath Singh had asked Gen Rawat to call a meeting of stake holders and discuss all the issues threadbare before taking the theatre command concept to Cabinet Committee on Security (CCS) for final approval. Majority nations, including tiny Maldives to mighty US, function on theatre command concept with the idea of seamless integration among the land, sea and air forces for better coordination and response. While China has reorganized its seven military districts into five theatre commands, Pakistan has sought support of Beijing to help its forces also be reorganized under the same military concept.

Although there have been media reports indicating that the entire process may be delayed, the ministry of defence, Indian Army and the Indian Navy are totally in favour of activation of the theatre commands with the Indian Air Force ploughing a lonely furrow on even issues like naming of the commands. Since the end of 1999 Kargil war, the Indian Air Force has its own version of jointmanship and integration with the sole purpose of keeping its air assets undivided and protecting its own turf. The fact is that even today, official files pertaining to army are labelled as Integrated Headquarters, Army (Ministry of Defence). The Navy filed are labelled Integrated Headquarters, Navy, but the Air Force files are still labelled as air headquarters only. This speaks volumes about Air Force vision of integration of the three services.

A senior military commander explained the context and said: "Those in doubt are confused and outdated. Has corporatisation of ordnance factory boards come with 100 per cent consensus or is it based on efficient and better management of resources. Leadership in military is meant to take decisions in best interests of security ensuring optimum and efficient management of resources. Whatever is the best way for us to achieve the objective is the way forward."

Under the present theatre command concept, there will be three land-based commands - North comprising only of Jammu and Kashmir, and Ladakh, East comprising land area from Himachal to Arunachal Pradesh and West comprising of land area from Punjab to down south. Apart from this there will be an air defence command and a maritime theatre command with the Andamans and Nicobar Command under its jurisdiction. The maritime and air defence command will be raised by serving commander in chiefs after announcement this year and start functioning next year under the newly appointed theatre commanders. The theatre commanders will be selected from the serving commander in chiefs of the three services with air defence command going under an air marshal and maritime theatre command under a vice admiral without creation of any new posts.

With Pakistan on its west and China on its eastern flank, the northern command will remain a single unit under an army general as the theatre is expected to remain active on the Line of Control and the Line of Actual Control for time to come.

Apart from getting its air assets divided and issues like rotation among services for theatre commanders, the IAF's concern is the perceived dilution of powers of the air chief as the theatre commanders will be in-charge of operations and directly report to the Chairman, Chiefs of Staff Committee with three chiefs as members. This concept is similar to the US concept where the chief of staff is responsible only for procurement and training while the theatre commanders report to the defence secretary.

The present command structure in the Indian military is lop-sided with Indian Army having seven commands, a much smaller Indian Air Force having similar number and Indian Navy having three commands. This structure will be rationalized under the theatre command concept with the Indian Navy expected to get one more commander in chief position.

With the Chinese PLA already functioning as one integrated unit under the Western Theatre Command along the 3488 km Line of Actual Control (LAC), the Indian military needs to get its act together and move fast on theatre commands for a cogent and strong response to the adversary in future. India has no other options.

https://www.hindustantimes.com/india-news/indian-army-and-navy-favour-theatre-commands-air-force-plays-the-lone-ranger-101624245785895.html

THE HINDU

Tue, 22 June 2021

Army to get indigenous light helicopters by Dec. 2022

Lt. Gen. AK Suri takes over as DG, Army Aviation

By Dinakar Peri

New Delhi: The Army, which is facing a huge shortage of light utility helicopters with the ageing fleet of Cheetah and Chetak helicopters, will receive the first batch of six indigenous Light Utility helicopter (LUH) by the end of 2022, a defence source said. The LUH was designed and developed by Hindustan Aeronautics Limited (HAL).

In a separate development, Lt. Gen. Ajay Kumar Suri took over as the Director General (DG) and Colonel Commandant of the Army Aviation on Monday.

"The acceptance in principle was received two months back. The Army will receive the first batch of six LUHs by December 2022," the source stated. The LUH is meant to replace the ageing Cheetah and Chetak helicopters along with the Russian Ka-226T helicopters.

At Aero India in Bengaluru in February, the Army variant of the LUH received its Initial Operational Clearance (IOC).

New DG

Since November 2019, Lt. Gen. Suri, then as a Major General, was the Additional Director General and officiating as the DG, Army Aviation. He was commissioned into the Army in June 1985 as an artillery officer and was awarded wings to fly a combat helicopter in June 1990 and transferred to the permanent cadre of the Army Aviation in February 1999. He is the 5th Director General and 13th Colonel Commandant of the Army Aviation Corps.

Lt. Gen. AK Suri . File.

Lt. Gen. Suri has over 6000 hours of total service flying. He has flown all types of helicopters in the Army's fleet. He also served as Air Operations officer at the United Nations peace keeping mission in Sierra Leone.

The LUH is a 3-ton class helicopter with glass cockpit for reconnaissance and surveillance roles and as a light transport helicopter. It has been extensively test-flown at various geographic conditions, including high altitude.

Following the IOC, HAL has moved to the next phase of integrating and flight-testing of mission and role equipment on the LUH. There is a tentative order of 200 LUH from the Army and the Air Force.

https://www.thehindu.com/news/national/army-to-get-indigenous-light-helicopters-by-dec-2022/article34889892.ece

नवभारत टाइम्स

Tue, 22 June 2021

चीन की नाक के नीचे पहुंचा नौसेना का ऐरावत, साउथ चाइना सी में योग से दिया कड़ा संदेश

By Shailesh Shukla

हाइलाइट्स:

- ***चीनी ड्रैगन को भारतीय नौसेना ने अंतरराष्ट्रीय योग दिवस पर एक कड़ा संदेश दिया है***
- ***इंडियन नेवी के युद्धपोत ऐरावत पर सवार जवानों ने वियतनाम के कैमरान्ह बे में योग किया***
- ***नौसेना ने बताया कि इस युद्धपोत को वियतनाम के कैमरान्ह बे इलाके में तैनात किया गया है***

कैमरान्ह बे (वियतनाम): साउथ चाइना सी से लेकर अरब सागर तक फुफकार रहे चीनी ड्रैगन को भारतीय नौसेना ने अंतरराष्ट्रीय योग दिवस पर एक कड़ा संदेश दिया है। इंडियन नेवी के युद्धपोत आईएनएस ऐरावत पर सवार जवानों ने वियतनाम के कैमरान्ह बे इलाके में योग किया। नौसेना ने बताया कि इस युद्धपोत को कैमरान्ह बे इलाके में तैनात किया गया है। भारतीय युद्धपोत ऐसे समय पर साउथ चाइना सी पहुंचा है जब चीन का अपने पड़ोसी देशों के साथ विवाद काफी बढ़ गया है। साथ ही चीनी जहाजों की घुसपैठ लगातार हिंद महासागर में बढ़ती जा रही है।

दक्षिण चीन सागर पहुंचा आईएनएस ऐरावत

भारत ने चीन को दिखा दिया है कि अगर वह उसके प्रभाव के क्षेत्र हिंद महासागर में घुसपैठ कर सकता है तो भारतीय जंगी जहाज भी साउथ चाइना सी की गहराईयों को नापने के लिए कभी भी पहुंच सकते हैं। इससे पहले भारत ने गलवान घाटी हिंसा के बाद अपने एक युद्धपोत को दक्षिण चीन सागर में तैनात कर दिया था। इस युद्धपोत को उस इलाके में तैनात किया गया है, जहां चीन की पीपल्स लिबरेशन आर्मी की नौसेना ने किसी भी अन्य फोर्स की मौजूदगी पर ऐतराज जताया था।

भारतीय युद्धपोत की तैनाती से बेचैन हो गई थी चीनी नौसेना

दक्षिण चीन सागर में भारतीय नौसेना के युद्धपोत की तत्काल तैनाती से चीनी नौसेना में बेचैन हो गई थी। चीनी नौसेना ने भारतीय पक्ष के साथ डिप्लोमैटिक लेवल की बातचीत में भारतीय युद्धपोत की उपस्थिति के बारे में शिकायत की थी। सूत्रों के मुताबिक दक्षिण चीन सागर में अमेरिकी नौसेना ने भी अपने विध्वंसक और फ्रिगेट तैनात किए थे। तैनाती के दौरान भारतीय युद्धपोत लगातार अपने अमेरिकी

समकक्षों के साथ संपर्क बनाए हुए था। किसी भी सार्वजनिक चकाचौंध से बचने के लिए पूरे मिशन को बहुत ही गोपनीय तरीके से अंजाम दिया गया था।

यही नहीं भारतीय नौसेना ने अंडमान और निकोबार द्वीप समूह के पास मलक्का स्ट्रेट्स में चीनी नौसेना की गतिविधि पर नजर रखने के लिए अपने फ्रंटलाइन जहाजों को तैनात किया था। चीनी नौसेना इसी रास्ते से हिंद महासागर में प्रवेश करती है। इसके अलावा कई चीनी जहाज भी तेल या मर्चेंट शिपमेंट्स के साथ अन्य महाद्वीपों से आकर इसी रास्ते से गुजरते हैं। भारतीय नौसेना ने इसके जरिए ड्रैगन को संदेश दिया था कि वह पूर्वी या पश्चिमी मोर्चे पर विरोधियों द्वारा किसी भी दुस्साहस का जवाब देने में पूरी तरह से सक्षम है।

दक्षिणी चीन सागर को लेकर चीन का पड़ोसियों से गंभीर विवाद

चीनी नौसेना के जहाजों की मलक्का स्ट्रेट्स से लेकर हिंद महासागर में होने वाली मूवमेंट पर नजर रखने के लिए भारतीय नौसेना अंडरवाटर जहाजों, अन्य मानवरहित सिस्टमों और सेंसरों को तुरंत हासिल कर तैनात करने की योजना बना रही है। इसके अलावा भारतीय नौसेना जिबूती इलाके के आसपास मौजूद चीनी जहाजों पर भी नजर बनाए रखे हुए है। नौसेना ने राष्ट्रीय हितों के लिए आसपास के इलाके में अपने असेट्स तैनात किए हैं।

दरअसल, चीन के लिए दक्षिण चीन सागर उसकी दुखती रग है। चीन का दावा है कि दक्षिणी चीन सागर का अधिकांश हिस्सा उसके क्षेत्र में आता है। इसी वजह से उसका वियतनाम, मलेशिया, इंडोनेशिया और फिलीपीन्स जैसे देशों के साथ गंभीर विवाद चल रहा है। इसी तनाव को देखते हुए अमेरिकी नौसेना लगातार इस इलाके में गश्त लगाती रहती है ताकि अगर जरूरत पड़े तो ड्रैगन के दुस्साहस का तत्काल कठोरता के साथ जवाब दिया जा सके।

दक्षिण चीन सागर इसलिए खास

दरअसल, दक्षिण चीन सागर में जिस क्षेत्र पर चीन की नजर है वह खनिज और ऊर्जा संपदाओं का भंडार है। चीन का दूसरे देशों से टकराव भी कभी तेल, कभी गैस तो कभी मछलियों से भरे क्षेत्रों के आसपास होता है। चीन एक 'U' शेप की 'नाइन डैश लाइन' के आधार पर क्षेत्र में अपना दावा ठोकता है। इसके अंतर्गत वियतनाम का एक्सक्लूसिव इकनॉमिक जोन (EEZ), परासल टापू, स्प्रैटली टापू, ब्रूने, मलेशिया, इंडोनेशिया, फिलिपीन और ताइवान के EEZ भी आते हैं। हेग स्थित एक ट्राइब्यूनल ने फिलिपील द्वारे दर्ज किए गए केस में 2016 में कहा था कि चीन का इस क्षेत्र पर कोई ऐतिहासिक अधिकार नहीं है और 1982 के UN Convention on the Law of the Sea के बाद इस लाइन को खत्म कर दिया गया था।

वियतनाम को तेल उत्पादन में घाटा

वर्ष 2019 में चीन और वियतनाम के जहाज कई महीनों तक वियतनाम के EEZ में आमने-सामने रहे जब चीन के रिसर्च वेसल ने ऐसी जगह का सीस्मिक सर्वे (Sesmic Survey) किया जिसमें वियतनाम के तेल के ब्लॉक भी आते हैं। तनावपूर्ण स्थिति की वजह से वियतनाम के तेल उत्पादन पर असर पड़ा है। साथ ही यहां काम करने वाले रूस के Rosneft और स्पेन के Repsol के ऑपरेशन पर भी असर पड़ा है। कंसल्टंसी फर्म Wood Mackenzie के रिसर्च डायरेक्टर ऐंड्रू हारवुड का कहना है, 'हम देख रहे हैं कि वियतनाम में तेल और गैस निवेश की दिलचस्पी में कमी आई है। तनाव बढ़ने से हालात सुधरेंगे नहीं।'

https://navbharattimes.indiatimes.com/world/asian-countries/indian-navy-ins-airavat-deployment-to-camranh-bay-vietnam-south-china-sea-message-to-china/articleshow/83712121.cms

The Indian EXPRESS

Tue, 22 June 2021

China has become a maritime power. It's time India caught up

Naval power will play a decisive role in India-China rivalry. But India needs greater vision, realistic targets and proper implementation to achieve its maritime goals

By Arun Prakash

While early signs of China's "maritime awakening" had emerged with its 2004 Defence White Paper (DWP), most China-watchers were sceptical when Hu Jintao declared at the 2012 Party Conference that China aimed to become "a maritime great power". Scepticism gave way to apprehension as it became clear that Hu's announcement was underpinned by a time-bound programme for acquiring the full gamut of maritime capabilities. Today, China has not only overtaken the US Navy in numbers, it is also the world's top ship-producing nation, with the largest merchant navy, coast-guard and fishing fleet/maritime militia in the world.

The competition between China and India in the economic and military spheres, no matter how asymmetric, makes it inevitable that the two will remain rivals in the Asian strategic space.

The competition between China and India in the economic and military spheres, no matter how asymmetric, makes it inevitable that the two will remain rivals in the Asian strategic space. Having weathered the Covid-19 pandemic with limited economic impact, China has reaffirmed its revanchist agenda via its refusal to resume the status quo ante in Eastern Ladakh. An economically strong, expansionist, and militaristic China will use the Maritime Silk Route initiative to expand its sphere of influence and ensure dominance in the Indo-Pacific. The PLA Navy's crucial role in this endeavour, clearly spelt out in China's 2019 DWP, relies on its formidable maritime/industrial capabilities.

In this context, the yawning gap between the maritime capabilities of China and India is shown by this example. China laid down its first indigenous aircraft-carrier in 2015 and commissioned it in 2018 — an astonishing industrial/technological feat. Work on India's first indigenous aircraft-carrier commenced in 2009 and in 2021, the ship awaits completion. The roots of this debility are not far to seek. India launched its first "maritime modernisation" plan, bearing the catchy title of "Sagarmala" in 2003, almost simultaneously with China. But its focus was limited to port development and road/rail connectivity.

Politicians, however, assumed that Sagarmala was a panacea for all of India's maritime shortcomings and sold it to the public as such. The exclusive focus of successive governments on port development has led to gross neglect of other critical components of India's maritime capability. These include merchant shipping, shipbuilding, ship repair, seabed exploration and fisheries etc; all of which have implications for India's maritime security as well as its "blue economy". It is instructive to follow the trajectory of Sagarmala because it is illustrative of India's "sea blindness" as well as political myopia and bureaucratic ineptitude.

Sagarmala, in its first avatar, was announced in August 2003 by the Vajpayee-led NDA government with the stated objective of ensuring that all major ports would be connected to the Golden Highway Quadrilateral through a network of expressways, facilitating country-wide goods traffic to-and-from ports. It was abandoned within months, following the declaration of the general election.

The UPA government, which won office in 2004, replaced Sagarmala with the National Maritime Development Plan (NMDP) in 2005. While the stated aim of the NMDP-2005, much like that of Sagarmala, was to "develop India's maritime sector", it was actually confined to

modernisation of port infrastructure and enhancement of rail-road connectivity to these ports. To fulfil these goals, the NMDP included 276 projects at an investment of Rs 1,00,339 crore.

Progress of the plan, however, remained tardy. Seven years after its commencement, the Lok Sabha was informed that only 82 of the 276 projects had been completed, while 30 had been dropped and 66 were still in the planning stage. In 2011, the UPA government decided to abandon the NMDP-2005 and replaced it with a new 10-year plan titled Maritime Agenda 2010-2020 (MA-2020). While the Sagarmala-2003 and NMDP-2005 were focused mainly on port modernisation and enhancing rail-road connectivity, MA-2020, ostensibly, had a much broader scope. It envisaged an outlay of Rs 5 lakh crore to achieve quantum jumps in shipping tonnage, shipbuilding, and coastal trade, apart from ports, cargo-handling and other capacities.

However, a reading of the MA-2020 document served to seriously undermine its credibility on two counts. Firstly, it had set extremely unrealistic targets; aiming to increase in just 7-8 years shipbuilding capacity by five times and enhancing cargo throughput in Indian ports by four times. Secondly, it showed clear signs of confusion in the ministry, citing itself as "a roadmap to guide this ministry" in one place, while stating elsewhere that it was "more an agenda for consideration, rather than agenda for action". Predictably, MA-2020 failed to achieve anything of substance before it was overtaken by the next plan.

The NDA government that came to power in 2014 followed the earlier practice, and having terminated MA-2020, revived the Sagarmala project. Like all its predecessors, Sagarmala-2015 also focusses on modernising ports and enhancing connectivity. This version of Sagarmala held out greater hope because it had a structured, progress-monitoring framework. However, data from the Ministry of Shipping's Sagarmala Project Tracker, updated until September 2019, shows a project completion rate no better than past trends. Tellingly, while the plan aimed to create 40 lakh direct jobs and 60 lakh indirect jobs, in 2019, the government admitted that only 10,000 jobs had been created.

Initiating programmes with inappropriate aims, choosing unrealistic targets, abandoning/renaming projects and not ensuring faithful implementation are the reasons underlying the dismal state of our maritime capability. It is time India evolved a National Strategy for the maritime sector that charts a 50-year path and receives Parliament's approval to ensure survival through changes of government.

Nations which were lagging behind India a few decades ago have surged ahead because of their vision and dynamism in the vital maritime arena. Today, India's major ports are overloaded and inefficient, our shipbuilding industry is moribund, the merchant fleet is inadequate and growing at a snail's pace, seabed exploitation has yet to take off, the fishing industry is backward, and human resources are lacking everywhere.

All eyes are focused seawards, and naval power is going to play a decisive role in the India-China rivalry. But navies remain hollow without the backing of a strong maritime sector. If "atmanirbharta" has relevance anywhere, it is here.

(The writer is a retired Chief of Naval staff)

https://indianexpress.com/article/opinion/columns/india-china-rivalry-maritime-power-navy-7367947/

PHYS.ORG

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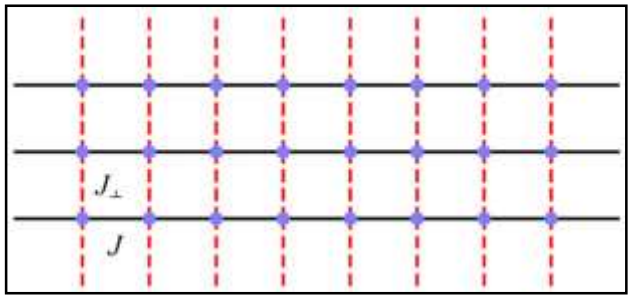
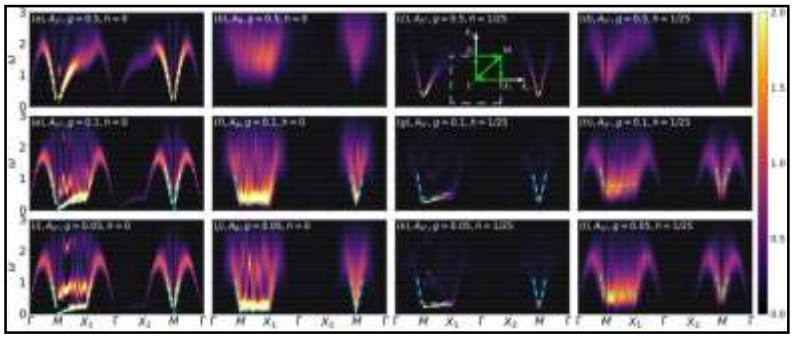
PhD student obtains the Higgs mode via dimensional crossover in quantum magnets

In 2013, François Englert and Peter Higgs won the Nobel Prize in Physics for the theoretical discovery of a mechanism that contributes to our understanding of the origin of mass of subatomic particles, which was confirmed through the discovery of the predicted fundamental particle by the A Toroidal LHC Apparatus (ATLAS) and the Compact Muon Solenoid (CMS) experiments at The European Organization for Nuclear Research (CERN)'s Large Hadron Collider in 2012. The Higgs mode or the Anderson-Higgs mechanism (named after another Nobel Laureate Philip W Anderson), has widespread influence in our current understanding of the physical law for mass ranging from particle physics—the elusive "God particle" Higgs boson discovered in 2012 to the more familiar and important phenomena of superconductors and magnets in condensed matter physics and quantum material research.

The Higgs mode, together with the Goldstone mode, is caused by the spontaneous breaking of continuous symmetries in the various quantum material systems. However, different from the Goldstone mode, which has been widely observed via neutron scattering and nuclear magnetic resonance spectroscopies in quantum magnets or superconductors, the observation of the Higgs mode in the material is much more challenging due to its usual overdamping, which is also the property in its particle physics cousin—the elusive Higgs boson. In order to weaken these damping, two paths have been suggested from the theoretical side, through (1) quantum critical points and (2) dimensional crossover from high dimensions to lower ones. For (1), people have achieved several remarkable results, whereas there are few successes in (2).



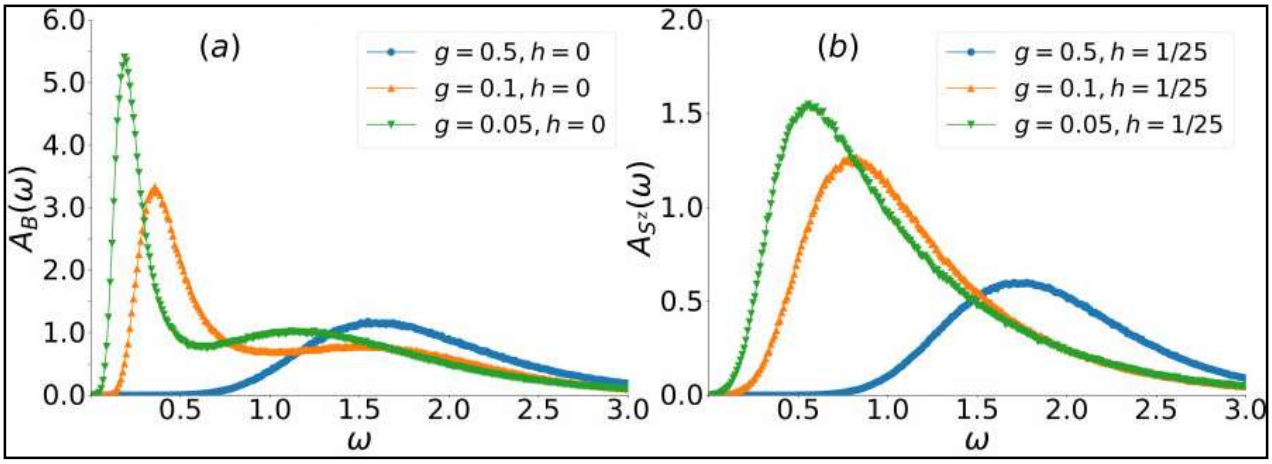
Graph 1. Coupled spin chains with nearest-neighbour spin intrachain interaction (solid black line) and interchain interaction (red dashed line). Credit: The University of Hong Kong



Graph 2. The spectra of the Goldstone mode, the Higgs mode, and the scalar mode changes with the coupled spin chains that tends to a quasi-1D limit. The first and the third columns are for the Goldstone mode. The second tells the scalar mode while the fourth is the Higgs mode. Credit: The University of Hong Kong

To fulfill this knowledge gap, from 2020,Mr Chengkang Zhou, then a first-year Ph.D. student, Dr. Zheng Yan and Dr. Zi Yang Meng from the Research Division for Physics and Astronomy of the University of Hong Kong (HKU), designed a dimensional crossover setting via coupled spin chains. They applied the quantum Monte Carlo (QMC) simulation to investigate the excitation spectra of the problem. Teaming up with Dr. Hanqing Wu from the Sun Yat-Sen University, Professor Kai Sun from the University of Michigan, and Professor Oleg A Starykh from the University of Utah, they observed three different kinds of collective excitation in the quasi-1D limit, including the Goldstone mode, the Higgs mode and the

scalar mode. By combining numerical and analytic analyses, they successfully explained these excitations, and in particular, revealed the clear presence of the Higgs mode in the quasi-1D quantum magnetic systems. All these results can not only help to find the key model parameters of the material, but also reveal a picture of how dimension matters in the condensed material. These research findings are published in *Physical Review Letters*.



Graph 3. Frequency dependence of the spectrum of the Higgs mode (b) and the scalar mode (a) evolve with the dimension reduction. In this dimensional reduction, a sharp peak is emerging, which means the signal of the scalar mode and the Higgs mode becomes stronger. Credit: The University of Hong Kong

Background

Quantum materials are embedded in our daily life, such as various electronic components, computer chips, and solar panels. With the fast development of science and technology, the understanding and manipulation of the quantum many-body interactions in the materials are playing a more and more important role. Such a tendency has already shown its first sign. For example, the 2D quantum moiré materials, such as the magic angle twisted bilayer graphene, have attracted much attention and show their novel performance in realizing superconductivity in Carbon-based instead of the traditional silicon-based materials. Moreover, quantum computer tech, which is based on the theory of superconductivity and even topology is rapidly developing to build more efficient computer chips beyond Moore's law. Along with these efforts, the research on quantum magnets is one of the most important objects, in which the detection of the Higgs mode and the Goldstone modes can reveal the underlying model parameters of the material.

However, since the interaction of billions of electrons must be considered, it is hard to point out a clear picture of several quantum many-body systems via quantum mechanics directly. Therefore, numerical methods, such as the QMC simulation, have become useful techs to study quantum many-body systems. These numerical methods can tell us useful information and properties of quantum many-body systems and show the micro mechanism of these systems. This information would stimulate the development of the theory as well as guiding the experimental design, which would help the scientists and engineers to find out more novel quantum materials and components.

The Higgs mode via dimensional crossover

To study the micro mechanism in quantum many-body systems, numerical physicists usually come up with a simple model based on theoretical understanding and experimental data. Then, they apply numerical simulation methods to study the model in reasonable parameters region. Such a research procedure has been used in the investigation of the Higgs mode in the quantum magnets, yet its observation is still challenging due to its usual overdamping feature. From the quantum-theoretical side, scientists have suggested two paths. The first is through the quantum critical point. In this path, there are several remarkable results, including the signal of the Higgs mode has been observed in $C_9H_{18}N_2CuBr_4$. But the second path, which is throughthe dimensional crossover towards 1D, is still full of blank and calling for more study, partly because it is hard to find out a quantum many-body system with dimensional reduction. Such a dimensional reduction weakens the long-range order of the system and, therefore, inhibits the Higgs mode's overdamping feature.

The research team from The University of Hong Kong, the Sun Yat-Sen University, the University of Michigan and The University of Utah managed to fulfill these blanks by numerically simulating a dimensional-crossover quantum spin model, coupled spin chains (see Graph 1).

The research team came up with coupled spin chains model by introducing the interchain interaction. By reducing the strength of these interchain interactions (changing the value of$J_\perp$ in Figure 1 toward 0), the model would change from a 2D system to a quasi-1D system. The research team used the QMC method simulating the model and developed an effective method to measure the spin- and the bond- correlation functions. They not only observed the Higgs mode via a dimensional crossover but also find the scalar mode, which is predicted by the sine-Gordon theory. These results make coupled spin chains an attractive candidate system for studying collective quantum dynamics theoretically and experimentally.

The Higgs mode and the scalar mode spectrum

With the help of the Tianhe- II and III supercomputers, the research team studiedthe coupled spin chains in the quasi-1D limit and observed the evolution of the spectrum of Goldstone mode(Figure 2 (g) and (k)), the Higgs mode(Graph 2 (h) and (l)), and the scalar mode(Figure 2 (f) and (j)). Figure 2 shows the obtained spectra from the QMC simulations, where the blue dashed line represents the dispersion relation according to the combination of the mean-field theory and the sin-Gordon theory model. As one can see in Figure 2, the numerical results fit well with the theory prediction, which means the research team has managed to catch the signal of the Higgs mode. These signal is very helpful to design corresponding experiments to observe the Higgs mode via a dimensional crossover, like neutron scattering and nuclear magnetic resonance spectroscopy. Such exciting results also will contribute to our understanding of the Higgs mode in dimensional reduction.

In order to describe the emergence of the Higgs mode and scalar mode, the research team also plotted out the frequency dependence of them (see Graph 3), where g is a factor telling how close the model to the quasi-1D is. When g=1, the coupled spin chains are in a 2D system, and with g=0, the coupled spin chains are in a 1D system. By comparing the frequency dependence of the spectrum with different g, one can find a sharp peak emerging as g reduces, which means the signals of the Higgs mode and the scalar mode are becoming stronger and stronger.

The novel physics phenomenon via dimensional crossover

In the framework of modern physics, symmetry and dimension are two of the most important factors that determine the properties of quantum many-body physics. And the phenomenon caused by dimension reduction is a key topic in quantum magnetic systems. The finding of the research team provided an attractive model and data support, which help us to understand what an essential role the dimension plays in our world and stimulate the development of the next-generation quantum material and components.

More information: Chengkang Zhou et al, Amplitude Mode in Quantum Magnets via Dimensional Crossover, *Physical Review Letters* (2021). DOI: 10.1103/PhysRevLett.126.227201

Journal information: *Physical Review Letters*

https://phys.org/news/2021-06-phd-student-higgs-mode-dimensional.html

Tue, 22 June 2021

Physicists create platform to achieve ultra-strong photon-to-magnon coupling

A team of scientists from NUST MISIS and MIPT have developed and tested a new platform for realization of the ultra-strong photon-to-magnon coupling. The proposed system is on-chip and is based on thin-film hetero-structures with superconducting, ferromagnetic and insulating layers. This discovery solves a problem that has been on the agenda of research teams from different countries for the last 10 years, and opens new opportunities in implementing quantum technologies. The study was published in the highly ranked journal *Science Advances.*

Igor Golovchanskiy with a chip under investigation in his hands. Credit: Andrey Zmeev, MIPT Press Office

The last decade has seen significant progress in the development of artificial quantum systems. Scientists are exploring different platforms, each with its own advantages and disadvantages. The next critical step for advancing quantum industry requires an efficient method of information exchange between platform hybrid systems that could benefit from distinct platforms. For example, hybrid systems based on collective spin excitations, or magnons, are being developed. In such systems, magnons must interact with photons, standing electromagnetic waves trapped in a resonator. The main limiting factor for developing such systems is the fundamentally weak interaction between photons and magnons. They are of different sizes, and follow different dispersion laws. This size difference of a hundred times or more considerably complicates the interaction.

Scientists from MIPT, together with their colleagues, managed to create a system with what is called the ultra-strong photon-to-magnon coupling.

Vasily Stolyarov, deputy head of the MIPT Laboratory of Topological Quantum Phenomena in Superconducting Systems, commented, "We created two subsystems. In one, being a sandwich from superconductor/insulator/superconductor thin films, photons are slowed down, their phase velocity is reduced. In another one, which is also a sandwich from superconductor/ferromagnetic/superconductor thin films, superconducting proximity at both interfaces enhances the collective spin eigen-frequencies. The ultra strong photon-to-magnon coupling is achieved thanks to the suppressed photon phase velocity in the electromagnetic subsystem."

Igor Golovchanskiy, leading researcher, senior researcher at the MIPT Laboratory of Topological Quantum Phenomena in Superconducting Systems, head of the NUST MISIS Laboratory of Cryogenic Electronic Systems, explained, "Photons interact very weakly with magnons. We managed to create a system in which these two types of excitations interact very strongly. With the help of superconductors, we have significantly reduced the electromagnetic resonator. This resulted in a hundred times reduction of the phase velocity of photons, and their interaction with magnons increased by several times."

This discovery will accelerate the implementation of hybrid quantum systems, as well as open up new possibilities in superconducting spintronics and magnonics.

More information: Igor A. Golovchanskiy et al, Ultrastrong photon-to-magnon coupling in multilayered heterostructures involving superconducting coherence via ferromagnetic layers, *Science Advances* (2021). DOI: 10.1126/sciadv.abe8638

Journal information: *Science Advances*

https://phys.org/news/2021-06-physicists-platform-ultra-strong-photon-to-magnon-coupling.html

PHYS.ORG

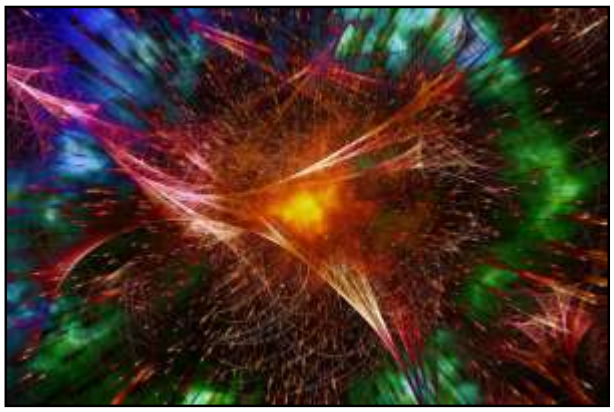
Tue, 22 June 2021

Common perovskite superfluoresces at high temperatures

By Tracey Peake

A commonly studied perovskite can superfluoresce at temperatures that are practical to achieve and at timescales long enough to make it potentially useful in quantum computing applications. The finding from North Carolina State University researchers also indicates that superfluorescence may be a common characteristic for this entire class of materials.

Superfluorescence is an example of quantum phase transition—when individual atoms within a material all move through the same phases in tandem, becoming a synchronized unit.



Credit: Pixabay/CC0 Public Domain

For example, when atoms in an optical material such as a perovskite are excited they can individually radiate light, create energy, and fluoresce. Each atom will start moving through these phases randomly, but given the right conditions, they can synchronize in a macroscopic quantum phase transition. That synchronized unit can then interact with external electric fields more strongly than any single atom could, creating a superfluorescent burst.

"Instances of spontaneous synchronization are universal, occurring in everything from planetary orbits to fireflies synchronizing their signals," says Kenan Gundogdu, professor of physics at NC State and corresponding author of the research. "But in the case of solid materials, these phase transitions were thought to only happen at extremely low temperatures. This is because the atoms move out of phase too quickly for synchronization to occur unless the timing is slowed by cooling."

Gundogdu and his team observed superfluorescence in the perovskite methyl ammonium lead iodide, or MAPbI3, while exploring its lasing properties. Perovskites are materials with a crystal structure and light-emitting properties useful in creating lasers, among other applications. They are inexpensive, relatively simple to fabricate, and are used in photovoltaics, light sources and scanners.

"When trying to figure out the dynamics behind MAPbI3's lasing properties, we noticed that the dynamics we observed couldn't be described simply by lasing behavior," Gundogdu says. "Normally in lasing one excited particle will emit light, stimulate another one, and so on in a geometric amplification. But with this material we saw synchronization and a quantum phase transition, resulting in superfluorescence."

But the most striking aspects of the superfluorescence were that it occurred at 78 Kelvin and had a phase lifetime of 10 to 30 picoseconds.

"Generally superfluorescence happens at extremely cold temperatures that are difficult and expensive to achieve, and it only lasts for femtoseconds," Gundogdu says. "But 78 K is about the temperature of dry ice or liquid nitrogen, and the phase lifetime is two to three orders of magnitude longer. This means that we have macroscopic units that last long enough to be manipulated."

The researchers think that this property may be more widespread in perovskites generally, which could prove useful in quantum applications such as computer processing or storage.

"Observation of superfluorescence in solid state materials is always a big deal because we've only seen it in five or six materials thus far," Gundogdu says. "Being able to observe it at higher temperatures and longer timescales opens the door to many exciting possibilities."

The work appears in *Nature Photonics* and is supported by the National Science Foundation (grant 1729383). NC State graduate students Gamze Findik and Melike Biliroglu are co-first authors. Franky So, Walter and Ida Freeman Distinguished Professor of Materials Science and Engineering, is co-author.

More information: Gamze Findik et al, High-temperature superfluorescence in methyl ammonium lead iodide, *Nature Photonics* (2021). DOI: 10.1038/s41566-021-00830-x

Journal information: *Nature Photonics*

https://phys.org/news/2021-06-common-perovskite-superfluoresces-high-temperatures.html

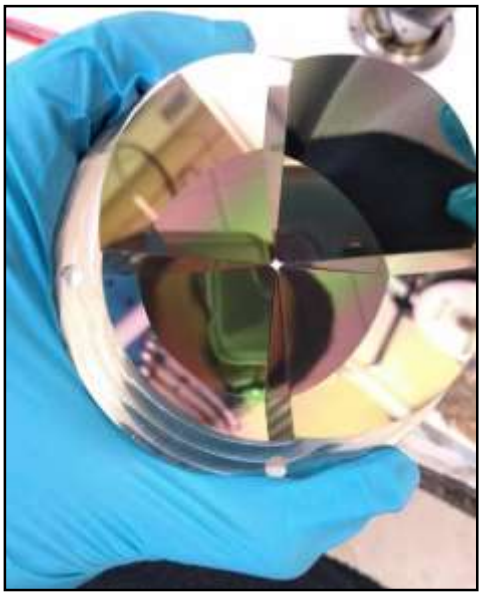
Tue, 22 June 2021

New cold atom source lays groundwork for portable quantum devices

Although quantum technology has proven valuable for highly precise timekeeping, making these technologies practical for use in a variety of environments is still a key challenge. In an important step toward portable quantum devices, researchers have developed a new high-flux and compact cold-atom source with low power consumption that can be a key component of many quantum technologies.

"The use of quantum technologies based on laser-cooled atoms has already led to the development of atomic clocks that are used for timekeeping on a national level," said research team leader Christopher Foot from Oxford University in the U.K. "Precise clocks have many applications in the synchronization of electronic communications and navigation systems such as GPS. Compact atomic clocks that can be deployed more widely, including in space, provide resilience in communications networks because local clocks can maintain accurate timekeeping even if there is a network disruption."

In The Optical Society (OSA) journal *Optics Express*, S. Ravenhall, B. Yuen and Foot describe work carried out in Oxford, U.K. to demonstrate a completely new design for a cold atom source. The new device is suitable for a wide range of cold-atom technologies.



Researchers designed a cold atom source that uses four mirrors arranged like a pyramid and placed in a way that allows them to slide past each other like the petals of a flower. This creates an adjustable hole at the top of the pyramid through which the cold atoms are pushed out. This image depicts the device. Credit: Christopher Foot, Oxford University

"In this project we took a design we made for research purposes and developed it into a compact device," said Foot. "In addition to timekeeping applications, compact cold-atom devices can also be used for instruments for gravity mapping, inertial navigation and communications and to study physical phenomena in research applications such as dark matter and gravitational waves."

Cooling atoms with light

Although it may seem counterintuitive, laser light can be used to cool atoms to extremely low temperatures by exerting a force that slows the atoms down. This process can be used to create a cold-atom source that generates a beam of laser-cooled atoms directed toward a region where

precision measurements for timekeeping or detecting gravitational waves, for example, are carried out.

Laser cooling usually requires a complicated arrangement of mirrors to shine light onto atoms in a vacuum from all directions. In the new work, the researchers created a completely different design that uses just four mirrors. These mirrors are arranged like a pyramid and placed in a way that allows them to slide past each other like the petals of a flower to create a hole at the top of the pyramid through which the cold atoms are pushed out. The size of this hole can be adjusted to optimize the flow of cold atoms for various applications. The pyramid arrangement reflects the light from a single incoming laser beam that enters the vacuum chamber through a single viewport, thus greatly simplifying the optics.

The mirrors, which are located inside the vacuum region of the cold-atom source, were created by polishing metal and applying a dielectric coating. "The adjustability of this design is an entirely new feature," said Foot. "Creating a pyramid from four identical polished metal blocks simplifies the assembly, and it can be used without the adjustment mechanism."

Better measurements with more atoms

To test their new cold-atom source design, the researchers constructed laboratory equipment to fully characterize the flux of atoms emitted through a hole at the apex of the pyramid.

"We demonstrated an exceptionally high flux of rubidium atoms," said Foot. "Most cold-atom devices take measurements that improve with the number of atoms used. Sources with a higher flux can thus be used to improve measurement accuracy, boost the signal-to-noise ratio or help achieve larger measurement bandwidths."

The researchers say that the new source is suitable for commercial application. Because it features a small number of components and few assembly steps, scaling up production to produce multiple copies would be straightforward.

More information: Sean Ravenhall et al, High-flux, adjustable, compact cold-atom source, *Optics Express* (2021). DOI: 10.1364/OE.423662

Journal information: *Optics Express*

https://phys.org/news/2021-06-cold-atom-source-groundwork-portable.html

Tue, 22 June 2021

Gut Bacteria in humans could help fight Covid-19, new research reveals

To investigate this hypothesis, the researchers screened dominant bacteria inhabiting the gut for activity against SARS-CoV-2

Certain commensal bacteria that reside in the human intestine produce compounds that can inhibit SARS-CoV-2, the virus causing Covid-19, researchers have found. Previous clinical findings have shown that some patients with moderate to severe Covid-19 have gastrointestinal symptoms, while others showed signs of infection solely in the lungs. “We wondered whether gut resident bacteria could protect the intestine from the invasion of the virus," said Mohammed Ali, a doctoral student at Yonsei University in Seoul. To investigate this hypothesis, the researchers screened dominant bacteria inhabiting the gut for activity against SARS-CoV-2. Their search revealed that Bifidobacteria, which have previously been shown to suppress other bacteria such as Helicobacter pylori (H pylori) and have proven active against irritable bowel syndrome, had such activity, said Ali.

H pylori can cause sores, called ulcers, in the lining of the stomach and also lead to stomach cancer.

The investigators also used machine learning to search for potential illness-fighting compounds in databases containing microbially produced molecules, discovering some that might also prove useful against SARS-CoV-2. “To train our model, we leveraged previous coronavirus datasets in which several compounds were tested against targets from coronaviruses," said Ali.

Image for representation, Credits: Reuters

“This approach seems to be significant as those targets share features in common with SARS-CoV-2."

Ali observed that many existing antibiotics and cancer therapies are compounds that bacteria use to compete with each other within the gastrointestinal tract, and that these were initially purified from microbial secretions.

“Finding microbes that secrete anti-coronavirus molecules will be a promising method to develop natural or engineered probiotics to expand our therapeutics prevention techniques, to provide a more sustainable way to combat the viral infection," said Ali.

The research will be presented at the World Microbe Forum, taking place online from June 20 to 24.

https://www.news18.com/news/buzz/gut-bacteria-in-humans-could-help-fight-covid-19-new-research-reveals-3872228.html