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पंजाब केसरी

Mon, 11 Apr 2022

भारत ने एंटी टैंक मिसाइल 'हेलिना' का सफल परीक्षण किया, IAF की ताकत में हुआ इजाफा

भारत ने सोमवार को अपनी वायु शक्ति में और इजाफा किया। स्वदेशी रूप से विकसित एंटी टैंक गाइडेड मिसाइल (एटीजीएम), हेलिना का सफल परीक्षण किया। इस मिसाइल का परीक्षण ध्रुव एडवांस्ड लाइट हेलीकॉप्टर (एएलएच) से उच्च ऊंचाई पर सफलतापूर्वक किया गया। रक्षा मंत्रालय ने सोमवार को कहा कि ताजा लॉन्च के बाद अब हेलिकॉप्टर के साथ हथियारों के एकीकरण का मार्ग प्रशस्त हो गया है।

DRDO और वायुसेना ने मिलकर किया सफल परीक्षण

मिसाइल लॉन्च राजस्थान में पोखरण फायरिंग रेंज में किया गया। हेलिना या हेलीकॉप्टर आधारित नाग मिसाइल सात किमी दूर तक के लक्ष्य पर हमला कर सकती है। रक्षा मंत्रालय ने एक बयान में कहा कि इंफ्रारेड इमेजिंग सीकर सिस्टम द्वारा निर्देशित फायर एंड फॉरगेट मिसाइल ने सफलतापूर्वक उच्च ऊंचाई पर एक नकली टैंक लक्ष्य को निशाना बनाया। रक्षा अनुसंधान और विकास संगठन (DRDO), भारतीय वायु सेना और सेना ने संयुक्त रूप से इसका परीक्षण किया।

दिन और रात हर मौसम में हिट करने की क्षमता

DRDO के अनुसार, हेलिना सिस्टम में दिन और रात हर मौसम में हिट करने की क्षमता है और यह पारंपरिक और विस्फोटक प्रतिक्रियाशील कवच के साथ दुश्मन के टैंकों को मार गिरा सकती है। मिसाइल सीधे हिट मोड के साथ-साथ टॉप अटैक मोड दोनों में लक्ष्य को भेद सकती है। मंत्रालय ने कहा, "पोखरण में किए गए वेलिडेशन ट्रायल्स के क्रम में, उच्च ऊंचाई पर इस मिसाइल की सटीकता का प्रमाण ध्रुव पर इसके एकीकरण का मार्ग प्रशस्त करता है।"

भारत ने लगा रखा है प्रतिबंध

सेंटर फॉर एयर पावर स्टडीज के अतिरिक्त महानिदेशक एयर वाइस मार्शल अनिल गोलानी (सेवानिवृत्त) ने कहा कि सफल परीक्षण हमारे स्वदेशी हथियार निर्माण कौशल को दर्शाता है। अब हेलीकॉप्टर पर

मिसाइल को जोड़ने, सशस्त्र बलों में हथियार के प्रोडक्शन और संचालन पर ध्यान केंद्रित किया जाना चाहिए। बता दें कि हेलीकॉप्टर से लॉन्च होने वाली एंटी टैंक गाइडेड मिसाइल को भारत सरकार ने रक्षा विनिर्माण क्षेत्र में आत्मनिर्भरता को बढ़ावा देने के लिए आयात प्रतिबंध के तहत रखा है।

SANT की सीमा 10 किमी है

भारत द्वारा लॉन्च किए गए स्टैंड-ऑफ एंटी-टैंक (SANT) मिसाइल का सफलतापूर्वक परीक्षण करने के चार महीने बाद अब हेलिना का सफल परीक्षण आया। SANT की सीमा 10 किमी है। IAF के रूसी मूल के एमआई-35 अटैक हेलीकॉप्टरों को मिसाइल से लैस होने की उम्मीद है, ताकि उन्हें दुश्मन के टैंकों को एक बेहतर स्टैंड-ऑफ रेंज से नष्ट करने की क्षमता मिल सके। Mi-35 पर मौजूदा रूसी मूल की Shturm मिसाइल पांच किमी की रेंज में टैंकों को निशाना बना सकती है। नाग और हेलिना DRDO द्वारा विकसित मौजूदा टैंक रोधी मिसाइलें हैं। नाग मिसाइल को एक संशोधित पैदल सेना लड़ाकू वाहन से लॉन्च किया जाता है, जिसे नाग मिसाइल वाहक या नामिका कहा जाता है।

https://punjabkesari.com/india-news/successful-test-of-anti-tank-missile-helina/

नवभारत टाइम्स

Mon, 11 Apr 2022

हेलिना' एक झटके में तबाह कर सकती है दुश्मन का टैंक, सफल रहा गाइडेड मिसाइल का टेस्ट, जानिए इसकी खूबियां

भारतीय सेना (Indian Army) की ताकत अब पहले से और ज्यादा बढने वाली है। सोमवार को देश में विकसित हेलीकॉप्टर से एंटी टैंक गाइडेड मिसाइल 'हेलिना' का ऊंचाई वाले क्षेत्रों में सफलतापूर्वक परीक्षण किया गया। यह मिसाइल किसी भी परिस्थिति में दुश्मन को सबक सिखाने में कारगार है। भारत ने राजस्थान में पोखरण रेंज में सोमवार को दुनिया के सबसे उन्नत टैंक रोधी हथियारों में से एक हेलिना गाइडेड मिसाइल सिस्टम का सफलतापूर्वक परीक्षण किया गया है। इस मिसाइल को होम मेड एडवांस्ड लाइट हेलीकॉप्टर से लॉन्च किया गया। यह परीक्षण संयुक्त रूप से रक्षा अनुसंधान और विकास संगठन (DRDO) के वैज्ञानिकों, भारतीय सेना और भारतीय वायु सेना (Indian Air Force)की देखरेख में किया गया।

जानिए क्या है खूबियां

DRDO के अनुसार, हेलिना सिस्टम में दिन और रात हर मौसम में हिट करने की क्षमता है और यह पारंपरिक और विस्फोटक प्रतिक्रियाशील कवच के साथ दुश्मन के टैंकों को मार गिरा सकती है। मिसाइल

सीधे हिट मोड के साथ-साथ टॉप अटैक मोड दोनों में लक्ष्य को भेद सकती है। हेलिना एक तीसरी पीढ़ी की टैंक रोधी मिसाइल प्रणाली है, जिसे आधुनिक हल्के हेलिकॉप्टर पर स्थापित किया जा रहा है। हेलिना मिसाइल हर मौसम में हमला करने में सक्षम है। 45 किलो वजनी ये मिसाइल अपने साथ 8 किलो विस्फोटक लेकर हवा से जमीन पर मार करने में सक्षम है। हेलिना मिसाइल को ध्रुव हेलिकॉप्टर, एडवांस्ड लाइट हेलिकॉप्टर समेत अन्य लड़ाकू हेलिकॉप्टरों में तैनात किया जाएगा।

भारतीय सेना के संस्करण को हेलिना के नाम से जाना जाता है जबकि भारतीय वायु सेना के संस्करण को ध्रुवस्त्र कहा जाता है। उधर इससे एक दिन पहले, DRDO ने पोखरण रेगिस्तान से पिनाका Mk-1 रॉकेट सिस्टम के उन्नत संस्करण का सफलतापूर्वक परीक्षण किया। पिछले दो हफ्तों में अलग-अलग रेंज के लिए 24 रॉकेट सिस्टम दागे गए।

https://navbharattimes.indiatimes.com/india/anti-tank-guided-missile-helina-launched-from-an-indigenously-developed-helicopter-successfully-flight-tested-at-high-altitude-ranges-indian-air-force/articleshow/90778769.cms

The Indian EXPRESS

Mon, 11 Apr 2022

India carries out successful flight-test of anti-tank guided missile Helina in Pokhran

India on Monday successfully flight-tested Helina, an anti-tank guided missile (ATGM), in Pokhran. The test was part of user validation trials of the third generation ‘fire and forget’ class missiles developed by the Defence Research and Development Organisation (DRDO). The flight test was conducted by teams from DRDO, the Army and the Air Force.

The flight trials were conducted from an indigenously developed Advanced Light Helicopter (ALH) and the missile was fired successfully, engaging a simulated tank target in the Pokhran desert ranges. The missile is guided by an Infrared Imaging Seeker (IIR) operating in the ‘lock on before launch’ mode. Helina has a maximum range of seven kilometers and has been designed and developed for integration on weaponized version of the ALH.

“In continuation to validation trials conducted at Pokhran, proof of efficacy at high altitudes paves the way for its integration on ALH. The trials were witnessed by senior Army commanders and senior scientists of DRDO,” said a press statement from the Ministry of Defence. Helina has been developed by Defence Research and Development Laboratory (DRDL), Hyderabad under the Missiles and Strategic Systems (MSS) cluster of the DRDO. Successful user trials of the missile have been conducted since 2018.

DRDO scientists said that the Helina missile system has all-weather, day and night capability and can defeat battle tanks with conventional armour as well as explosive reactive armour. It has

been developed for integration with choppers in both the Army and the Air Force. The Air Force version of Helina is sometimes referred to as Dhruvastra. Helina can engage targets both in direct hit mode as well as top attack mode. In the top attack mode, the missile is required to climb sharply after launch and travel at a certain altitude and then plunge on the top of the target. In the direct hit mode, the missile travels at a lower altitude, directly striking the target.

Defence Minister Rajnath Singh and DRDO Chairman Dr G Satheesh Reddy congratulated the teams involved in the development and trials of Helina. The DRDO has designed and developed a range of anti-tank missile technologies that include the Nag, Helina MPATGM, SANT and Laser Guided ATGM for MBT Arjun. Nag is a third-generation fire-and-forget missile developed for mechanized formations to engage heavily fortified enemy tanks. MPATGM stands for Man-Portable Anti-Tank Guided Missile which has a range of 2.5 kilometers, with fire-and-forget and top attack capabilities for infantry use.

SANT is a smart Stand-off Anti-Tank Missile being developed for launch from the Mi-35 Helicopter for the Air Force's anti-tank operations. ATGM for MBT Arjun is a laser-guided, precision-guided munition which is launched from the 120mm rifled gun of the Arjun tank to engage and defeat Explosive Reactive Armour-protected armoured targets.

https://indianexpress.com/article/india/india-flight-test-anti-tank-guided-missile-helina-pokhran-7864499/

United News of India
India's Multi Lingual News Agency

Mon, 11 Apr 2022

Need is to develop first-of-its kind products: Dr Satheesh Reddy

Dr G Satheesh Reddy, Secretary, DD R&D and Chairman, DRDO on Monday emphasized that there is an urgent need to gear up for the development of first of its kind products, embark on the next level of futuristic Research and bring in the much needed technological self-reliance for defence of the nation. Dr Reddy who felicitated Dr E Ravindra Reddy, renowned Pulmonologist, Kamineni Hospital on the occasion of 9th Annual Day of Centre for High Energy Systems and Sciences (CHESS), a premier laboratory of DRDO spearheading R&D in Directed Energy Systems said Directed Energy Systems and Anti-drone technologies are need of the hour and we need to accelerate the development of a range of Systems and further strengthen our Anti-drone capabilities to meet the numerous challenges as modern warfare has been continuously evolving. Dr Satheesh Reddy applauded Dr Ravindra Reddyand his team for their continuous medical supervision, treatment and support extended to Mr Gautam Shaw, an employee of CHESS, DRDO.

In his insightful address, Dr Ravindra Reddy highlighted the importance of prioritising lung health, factors contributing to respiratory diseases, pandemic challenges, emerging interventions, unhealthy lifestyles,measures to promote lung health to achieve overall health and well-being. He also explained in brief about the Arteriovenous Malformation, a rare form of endobronchial tuberculosis and the successful recovery of Mr Gautam Kumar Shaw, employee of CHESS,

DRDO, Hyderabad who was treated under his supervision. Sharing the challenges, medical intervention and success story, Dr Ravindra Reddy mentioned that they made a detailed evaluation and among all TB patients, this kind of presentation is seen in only 0.5 per cent cases. Dr Jagannath Nayak, Outstanding Scientist &Director, CHESS highlighted the developments led by the lab in high technology intensive areas. Over 300 scientific, technical and other employees of DRDO participated in the event. UNI VV SY 1836.

https://www.uniindia.com/story/Need-is-to-develop-first-of-its-kind-products-Dr-Satheesh-Reddy

THE TIMES OF INDIA

Tue, 12 Apr 2022

Anti-drone tech need of the hour, says DRDO chief

Defence Research and Development Organisation (DRDO chairman G Satheesh Reddy on Monday said that 'directed energy systems' and anti-drone technologies were the need of the hour for the country."We need to accelerate the development of a range of systems and further strengthen our anti-drone capabilities to meet the numerous challenges as modern warfare has been continuously evolving," he said at the ninth annual day of the Centre for High Energy Systems and Sciences (CHESS), a premier laboratory of DRDO.

Commending the achievements and efforts of the scientific fraternity, Satheesh Reddy said there was an urgent need to gear up for the development of first-of-its- kind products, embark on the next level of futuristic research and bring in the much- needed technological self-reliance for the defence of the nation. Well-known pulmonologist Dr E Ravindra Reddy highlighted the importance of prioritising lung health. He explained to the DRDO the factors, especially unhealthy lifestyles, that contribute to respiratory diseases.

He also talked about the arteriovenous malformation, a rare form of endobronchial tuberculosis and the successful recovery of Gautam , an employee of CHESS, DRDO, Hyderabad who was treated under his supervision. challenges, medical intervention and success stories, Dr Ravindra Reddy mentioned that they made a detailed evaluation and among all TB patients, this kind of observation was seen in only 0.5% of cases. On the occasion, Dr Ravindra Reddy was felicitated by the DRDO chairman for his efforts in successful medical treatment of Gautam Shaw.

https://timesofindia.indiatimes.com/city/hyderabad/anti-drone-tech-need-of-the-hour-says-drdo-chief/articleshow/90787633.cms

DRDO On Twitter

DRDO
@DRDO_India

Flight test of indigenously developed helicopter launched Anti-Tank Guided Missile 'HELINA' carried out from Advanced Light Helicopter at high-altitude ranges along with participation of Indian Army and Indian Airforce.

@PMOIndia @DefenceMinIndia @SpokespersonMoD @adgpi @IAF_MCC

5:35 PM · Apr 11, 2022 · Twitter for iPhone

Defence News

Defence Strategic: National/International

Press Information Bureau
Government of India

Ministry of Defence

Mon, 11 Apr 2022 10:22 PM

Raksha Mantri & US Secretary of Defence review defence cooperation & regional security situation during bilateral talks in Pentagon

Shri Rajnath Singh invites US companies to India for manufacturing & maintenance of defence equipment

Raksha Mantri Shri Rajnath Singh, along with Defence Secretary Dr Ajay Kumar and a high-level delegation, held a meeting with Secretary of Defence of the United States of America Mr Lloyd Austin, accompanied by Chairman of the Joint Chiefs of Staff and other senior officials in Pentagon on April 11, 2022.The two Defence Ministers reviewed the entire gamut of bilateral defence cooperation and the regional security situation. Both Ministers acknowledged the salience of India-US defence partnership for peace, stability and prosperity in the Indo-Pacific and broader Indian Ocean Region.

They discussed ways to deepen Major Defence Partnership (MDP) and to work together to advance quality and scope in bilateral defence cooperation. They reviewed Military-to-Military engagements, information sharing, enhanced logistics cooperation, and ability of the Armed Forces to cooperate closely under compatible communication arrangements. In this context, closer cooperation of Special Operation Forces came up prominently.The two Ministers discussed ways for closer collaboration between Defence Industries. The Raksha Mantri underlined the need of co-development, co-production between India and US companies and invited US companies to India for manufacturing and maintenance of defence equipment.

https://pib.gov.in/PressReleasePage.aspx?PRID=1815811

THE ECONOMIC TIMES

Mon, 11 Apr 2022

Rajnath invites US defence companies to invest in India, support 'Make in India'

Defence Minister Rajnath Singh on Monday urged American companies to come and invest in India and support the 'Make in India' programme. "I have talked to American companies for Make in India and aerospace and world programme. I have invited them for these programmes," Singh told reporters at a joint news conference with External Affairs Minister S Jaishankar along with their American counterparts Defence Secretary Lloyd Austin and Secretary of State Tony Blinken.

"We are talking to US companies for co-development and co-production. We are proposing it to them. We have asked the US companies to work in the UP and Tamil Nadu corridor and invest in that area," he said at the conclusion of the India-US 2+2 ministerial, the first of the Biden administration. "I have insisted that India would focus on co-developmental productions and all the investors should come to India. They are welcome. And because in India they can develop the 'Make in India' because we want to build and make everything in India," Singh told reporters in response to a question.

Earlier, in his opening remarks at the 2+2 ministerial, Singh said that India places the highest priority upon the strategic partnership with USA. "Major defence partnership is one of the most important pillars of India-US strategic relations," he said. "As the largest country and the centre to Indian Ocean, and as a democracy, India has critical roles to play in the Indian Ocean region and in the wider Indo-Pacific following the Act East and the Neighbourhood First policy," he said. India played preeminent role in the region, from the Tsunami in 2004 and during the COVID pandemic. "We have signed eight different defence-related agreements between our two countries in last few years, including a Space Situational Awareness Agreement for unclassified domain, which is being signed today," he added. Despite the pandemic, India-USA military engagements increased with higher capability in communication, closer information sharing, and enhanced mutual logistic support, he said adding that this is a reflection of their growing depth and scale of the defense partnership. "In a decade, our defense suppliers from USA rose from negligible to a cumulative around of over USD 20 billion.

We look forward to US companies investing in India and support the Make In India programme," he said."We look forward to further enhancing the depth and the scope of our defense cooperation to give effect to our shared vision of a free, open, inclusive, and a rules-bound Indo-Pacific and the Indian Ocean region," he said. India, he said, is working with the US to double up capabilities across conventional and emerging defense domains. "We have made good progress in a number of defense cooperation activities since the visit of Secretary Austin to India in March 2021".

https://m.economictimes.com/news/defence/rajnath-invites-us-defence-companies-to-invest-in-india-support-make-in-india/amp_articleshow/90789096.cms

Mon, 11 Apr 2022

HAL, IAI to develop B767 multi mission tanker

Israel Aerospace Industries (IAI) and Hindustan Aeronautics Limited (HAL) have signed an agreement to transform passenger Boeing 767s to Multi Mission Tanker Transports (MMTTs). In a statement to *Janes*, IAI said that the MMTT is based on "pre-owned B767 aircraft". The Memorandum of Understanding (MoU) signed between the two companies on 6 April will cover not only conversion of the passenger aircraft to MMTTs but also conversion to freighters.

According to IAI, "The MMTT conversion is based on long years of accumulated know-how and experience in aircraft conversions." Boaz Levy, president and CEO of IAI, added in a statement that the project will utilise "local [India] resources to manufacture and market the platform". HAL expects the project to provide India's defence ecosystem with new capabilities and cost-effective solutions in the market. The company added that the project could bolster the 'Make in India' campaign.

However, a timeframe for the project's start has not yet been fixed. An HAL source said that the "nitty-gritty details of the arrangement are still being worked out". IAI also declined to specify when the project will begin. A spokesperson said that the company is working "with HAL on the programme to provide the Indian [Ministry of Defence (MoD)] with the best value solution per their requirements".

This is not the first time that IAI has offered a B767 conversion to India. Following India's cancellation of Airbus A330 Multi Role Tanker Transport (MRTT) programme in June 2016, IAI told *Janes* during Aero India 2017 that it was offering its B767-300ER-based MMTT.

https://www.janes.com/defence-news/news-detail/hal-iai-to-develop-b767-multi-mission-tanker

Tue, 12 Apr 2022

HAL signs contract with Nigerian army for phase-II training on chetak helicopter

A phase-II flying training contract was signed between Hindustan Aeronautics Limited (HAL) and the Nigerian Army, informed the officials on Monday. The agreement has been signed for imparting phase-II flying training on Chetak Helicopter for six officers of Nigerian Army Aviation and marks the continuation of the contract signed in April 2021 for imparting Phase-I flying training to six Nigerian Army aviation officers, which was successfully executed in December last year.

The contract was signed by BK Tripathy, General Manager, Helicopter Division and Commodore Anthony Victor Kujoh, Defence Adviser, High Commission of Nigeria in India at a

programme held at Helicopter Division recently. General Manager-Helicopter Division, BK Tripathy, said the platforms such as Advanced Light Helicopter (ALH) and Light Utility Helicopter (LUH), with a wide range of capabilities, can be of great strength for the Nigerian Army. "Nigeria would not only like to further enhance the business relationship with HAL for training but also towards asset acquisition", said Commodore Kujoh. The Phase-II flying training on Chetak Helicopter is scheduled to commence today and is planned to be completed by December 2022. As part of the training, 70 hours of flying training would be imparted for each Nigerian Army Aviation Officer.

http://www.indiandefensenews.in/2022/04/hal-signs-contract-with-nigerian-army.html?m=1

Science & Technology News

Tue, 12 Apr 2022

First Ever "Made In India" commercial aircraft to start flying today

The first-ever "Made in India" civil dornier aircraft will start flying from today and will provide air connectivity to remote towns of Arunachal Pradesh. In what would be a red letter day in the history of Indian aviation, this will further boost air connectivity of North Eastern Region with the rest of the country. The first ever "Made in India" 17-seater dornier aircraft would be pressed into its maiden service linking five remote towns of Arunachal Pradesh to Assam's Dibrugarh.

The aircrafts will be used to give air connectivity to remote places of eastern Arunachal Pradesh.

Ministry of Civil Aviation (MoCA) has approved a Scheme- "Providing air connectivity and Aviation infrastructure in North Eastern Region (NER)" to promote air connectivity in the states of North Eastern Region and, if requires, to develop infrastructure for air connectivity. As a part of this scheme, two important development will take place on tomorrow - First flight of Hindustan Aeronautics Limited (HAL) - Made in India- Dornier Do-228 from Dibrugarh in Assam to Pasighat town in Arunachal Pradesh by Alliance Air, making it India's only first commercial airline to fly Indian made aircraft for civil operations and inauguration of first FTO (Flying Training Organization) for North Eastern Region at Lilabari, Assam.

Both events will attended by the Civil Aviation Minister, Jyotiraditya Scindia and the Chief Ministers of Assam and Arunachal Pradesh, Himanta Biswa Sarma and Pema Khandu will also be present. According to HAL sources, the 17-seater non-pressurized Dornier 228 with an AC cabin is capable of day and night operations. The light transport aircraft will facilitate regional

connectivity in northeastern states. These two aircraft were handed over to Alliance Air on last Thursday and one has been shifted to Dibrugarh airport, the newest hub for Alliance air.

The aircrafts will be used to give air connectivity to remote places of eastern Arunachal Pradesh including some areas close to China and Myanmar borders. The Advanced Landing Grounds (ALG) maintained by Indian Air Force will be used for landing, official added. Alliance Air will initially be flying from Dibrugarh to Pasighat. And in the next 15 to 20 days, it will fly to Tezu and then to Ziro, both towns in Arunachal Pradesh. All of this will happen in the first phase.In the second phase, it will connect Vijaynagar, Mechuka, Along and other places will be linked, a top official of Ministry of civil aviation said. All these places in eastern Arunachal Pradesh needed 1-5 days of travel to reach the nearest airports of Dibrugarh and Lilabari in Assam, officials further added.

Development of North Eastern Region (NER) is not only of strategic importance, but, is a part of India's growth story. Connectivity in North Eastern Region is very essential and Under "Ude Desh Ka Aam Nagrik (UDAN)", the Regional Connectivity Scheme (RCS), Ministry of Civil Aviation (MoCA) has identified North Eastern Region as a priority area. This has helped in enhancing inter and intra connectivity for the North Eastern Region.

In this regard, new airports are getting developed and old airports are getting upgraded. Considering the hilly terrain, helicopter operations under UDAN scheme have been given focus for connectivity. Dornier is originally a german aircraft first deployed by the long-defunct regional airline Vayudoot to service over 100 airports across India till the early 1990s. In 1981, HAL acquired the production license for the aircraft from the manufacturers and assembled 125 of them at its Kanpur facility for both civilian and military purposes. Since 2009, Swiss aerospace engineering and defence company RUAG has been manufacturing the upgraded Do-228 New Generation (NG), with the fuselage, wings and tail being sourced from HAL. The Dornier 228 NG used for commercial operations is the first aircraft made entirely in the country. It is a far improved version as compared to its predecessors.

https://www.ndtv.com/india-news/first-ever-made-in-india-commercial-aircraft-to-start-flying-tomorrow-2879176

NewsOnAIR

Tue, 12 Apr 2022

New materials and processes for carbon could show new light on global warming challenge, says Ministry of Science and Technology

A group of scientists from Indian Institute of Chemical Technology, IICT, Hyderabad have designed a hybrid material that can absorb greenhouse gas methane and convert it to clean hydrogen. They have simulated a process of capturing carbon dioxide and converting it to high purity hydrogen from non-fuel grade bioethanol. These scientists have also designed a facility that can test such materials and help further carbon capture research at the institute.

Ministry of Science and Technology in a statement today said that these new materials and processes for carbon capture and utilization could show new light on global warming challenge.

https://newsonair.com/2022/04/11/new-materials-and-processes-for-carbon-could-show-new-light-on-global-warming-challenge-says-ministry-of-science-and-technology/

Mon, 11 Apr 2022

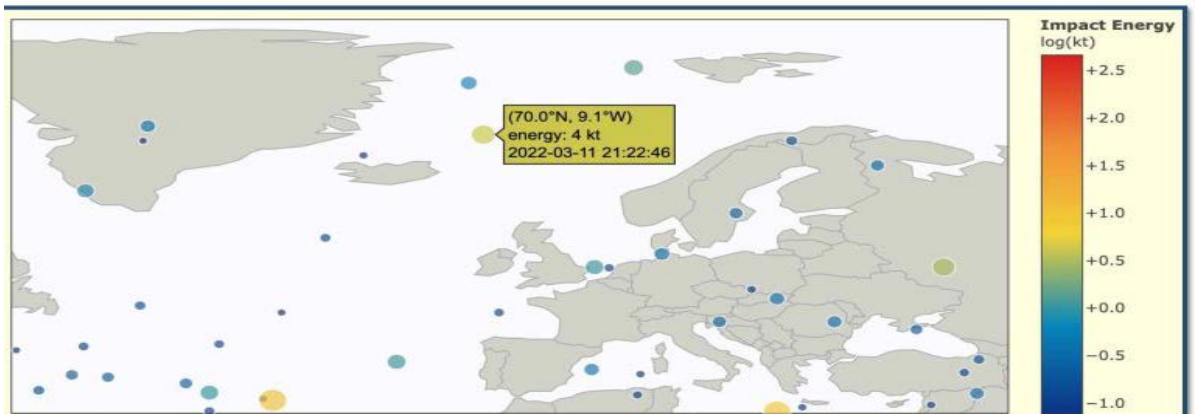
US space force releases decades of "fireballs" data to NASA for planetary defense studies

Hosted by JPL's Center for Near Earth Object Studies, the data can be used by the science community to better understand how asteroids break up when entering the atmosphere.
An agreement between NASA and the U.S. Space Force recently authorized the public release of decades of data collected by U.S. government sensors on fireball events (large bright meteors also known as bolides) for the benefit of the scientific and planetary defense communities. This action results from collaboration between NASA's Planetary Defense Coordination Office (PDCO) and the U.S. Space Force to continue furthering our nation's efforts in planetary defense, which include finding, tracking, characterizing, and cataloguing near-Earth objects (NEOs). The newly released data is composed of information on the changing brightness of bolides as they pass through Earth's atmosphere, called light curves, that could enhance the planetary defense community's current ability to model the effects of impacts by larger asteroids that could one day pose a threat to Earth.

Bolides, very bright meteors that can even be seen in daylight, are a regular occurrence – on the order of several dozen times per year – that result when our planet is impacted by asteroids too small to reach the ground but large enough to explode upon impact with Earth's atmosphere. U.S. government sensors detect these atmospheric impact events, and the bolide data is reported to the NASA Jet Propulsion Laboratory's Center for Near Earth Object Studies (CNEOS) fireballs database, which contains data going back to 1988 for nearly one thousand bolide events. Now, planetary defense experts will have access to even more detailed data – specifically, light curve information that captures the optical intensity variation during the several seconds of an object's breakup in the atmosphere. This uniquely rich data set has been greatly sought after by the scientific community, as an object's breakup in Earth's atmosphere provides scientific insight into the object's strength and composition based on what altitudes at which it breaks up and disintegrates. The approximate total radiated energy and pre-entry velocity vector (i.e., direction) can also be better derived from bolide light curve data.

"The growing archive of bolide reports, as posted on the NASA CNEOS Fireballs website, has significantly increased scientific knowledge and contributes to the White House approved National Near-Earth Object Preparedness Strategy and Action Plan" said Lindley Johnson, planetary defense officer at NASA Headquarters. "The release of these new bolide data demonstrates another key area of collaboration between NASA and the U.S. Space Force and

helps further the pursuit of improved capabilities for understanding these objects and our preparedness to respond to the impact hazard NEOs pose to Earth."



This screen capture from NASA JPL CNEOS's fireball webpage depicts data collected by U.S. government sensors of a small 2-meter asteroid named 2022 EB5 impacting Earth's atmosphere on March 11, 2022. Recently a small asteroid approximately 2 meters in size, so small it posed no hazard to Earth, was detected in space as it approached Earth and impacted the atmosphere southwest of Jan Mayen, a Norwegian island nearly 300 miles (470 kilometers) off the east coast of Greenland and northeast of Iceland. While this asteroid, designated 2022 EB5, was much smaller than objects NASA is tasked to detect and warn about, CNEOS continued to update NASA's PDCO with impact location predictions as observations were collected leading up to 2022 EB5's impact, offering the planetary defense community a real-word scenario to test NEO tracking capabilities and give confidence that the impact prediction process and models are adequate for timely and accurate notification of the potential impact of a larger object, should one be discovered on a trajectory toward Earth. Like other bolide events, 2022 EB5's impact was detected by U.S. government sensors and reported by the U.S. Space Force units, confirming the time and location predicted by CNEOS, and added to NASA's archive of these events at JPL CNEOS.

Another notable bolide event in this released data set is of a meteor that was detected on January 8, 2014. This object gained the interest of the scientific community, as it has been posited it could have interstellar origin due to the detected event's high velocity within the atmosphere. Further analysis carried out under U.S. Space Command's purview confirmed the object's high velocity impact, but the short duration of collected data, less than five seconds, makes it difficult to definitively determine if the object's origin was indeed interstellar.

NASA established the PDCO in 2016 to manage the agency's ongoing efforts in planetary defense. NASA has been directed to discover 90% of NEOs larger than 140 meters (459 feet) in size. The agency is diligently working to achieve this directive and has currently found approximately 40% of near-Earth asteroids larger than that size.

https://scitechdaily.com/us-space-force-releases-decades-of-fireballs-data-to-nasa-for-planetary-defense-studies/