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समाचार पत्रों के चयनित अंश
Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

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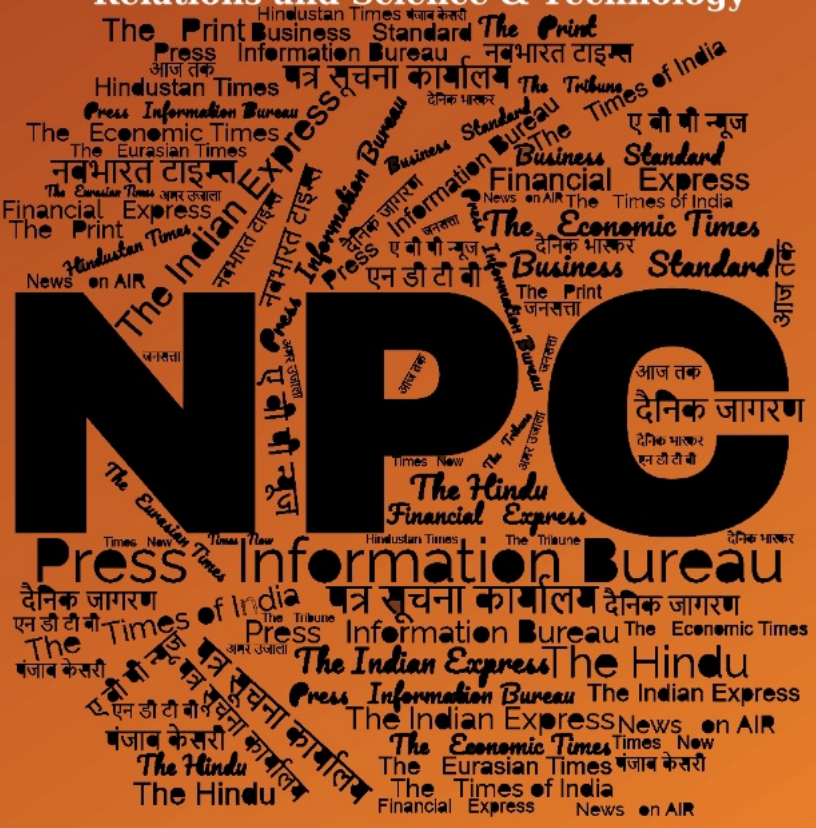

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हिन्दुस्तान

Fri, 29 Nov 2024

शोधकर्ताअनुदान पर नहीं, शोध समस्याओं पर ध्यान केंद्रित करें: डॉ एसके पांडेय

बिरला प्रौद्योगिकी संस्थान मेसरा (बीआईटी मेसरा) और **रक्षा अनुसंधान और विकास संगठन (डीआरडीओ)** की ओर सेबीआईटी मेसरा में 70 वीं वर्षगांठ पर, रक्षा क्षेत्र मेंएयरोस्पेस टेक्नोलॉजीज–एक अवलोकन विषय पर गुरुगुवार को संगोष्ठी का आयोजन किया गया।

इसमें एयरोस्पेस प्रौद्योगिकी मेंनवीनतम विकास और रक्षा क्षेत्र मेंइसके महत्व पर बात की गई। कार्यक्रम में एयरोस्पेस, रक्षा उद्योगों, शिक्षा जगत और वैज्ञानिक समुदाय के प्रमुख विशेषज्ञ एक साथ आए। डीआरडीओ और बीआईटी मेसरा के वरिष्ठ अधिकारियों नेछात्रों, शोधकर्ताओं को संबोधित किया, जिसमेंएयरोस्पेस प्रौद्योगिकी मेंनवीनतम प्रगति के बारेमेंअंतर्दृष्टि प्रदान की गई।

आयोजन बीआईटी मेसरा के अंतरिक्ष इंजीनियरिंग एवं रॉकेट्री विभाग की ओर सेकिया गया था। संगोष्ठी में डीआरडीओ में हुए विकास का पर बात की गई और संकाय सदस्यों के लिए वित्त पोषण के अवसरों पर भी चर्चा की गई। अध्यक्षता कुलपति प्रोफेसर इंद्रनील मान्ना नेकी।

मुख्य वक्ता **डॉ एसके पांडेय डीआरडीओ मुख्यालय/एआर एंडएं डीबी मेंएससी–एफ,** ने एआर एंडएं डीबी के साथ अनुसंधान के अवसरों पर जानकारी दी। कहा कि एआर एंडएं डीबी शैक्षणिक संस्थानों को एक विस्तारित शाखा के रूप मेंमानतेहैं। उन्होंनेशोधकर्ताओं को अनुसंधान समस्याओं पर ध्यान केंद्रित करनेका सुझाव दिया, न कि अनुदान पर। बीआईटी मेसरा के कुलपति प्रो इंद्रनील मन्ना ने एयरोस्पेस प्रौद्योगिकी मेंमहत्वपूर्णप्रगति पर जोर दिया।

उन्होंने बीआईटी की विभिन्न शैक्षणिक इकाइयों के बारेमेंबताया और डीआरडीओ की विशाल संख्या मेंप्रयोगशालाओं के बारेमेंभी चर्चाकी। सेवानिवृत्त डीआरडीओ वैज्ञानिक और एआरडीबी मेंसिस्टम और सिस्टम इंजीनियरिंग पैनल की वर्तमान अध्यक्ष डॉ रीना शर्मानेविमान प्रणाली जैसेएवियोनिक, उड़ान नियंत्रण, उपयोगिता, सेंसर, संचार आदि सेसंबंधित अनुसंधान और विकास को बढ़ावा देनेपर बात की।

आईआईटी कानपुर के प्राध्यापक डॉ बिशाख भट्टाचार्यनेमैकेनिकल इंजीनियरिंग परिप्रेक्ष्य सेबुद्धिमान स्वायत्त प्रणालियों के भविष्य के डिजाइन पर बात की। उन्होंनेमैकेनिकल इंजीनियरिंग के क्षेत्र की खोज पर जानकारी दी और छात्रों के लिए इसकी क्षमता पर बात की। डॉ एके सिंह, डीएमएसआरडीई, कानपुर के वैज्ञानिक–एफ नेएयरोस्पेस अनुप्रयोगों मेंउन्नत पॉलिमर कंपोजिट के उपयोग पर चर्चाकी।

एलआरडीई, बेंगलुरु मेंएससी–एफ श्री अमनदीप गर्गनेहवाई राडार पर अंतर्दृष्टि साझा की। संगोष्ठी मेंनवाचार को बढ़ावा देनेके लिए शिक्षा जगत और रक्षा अनुसंधान संगठनों के बीच सहयोग के महत्व पर बात की गई। बीआईटी मेसरा के एयरोस्पेस इंजीनियरिंग विभाग के अध्यक्ष डॉ प्रियांक कुमार नेविभाग मेंचल रहेअनुसंधान और विकास

परियोजनाओं पर बात की। इस कार्यक्रम मेंछात्रों को वास्तविक दुनिया मेंरक्षा क्षेत्र की चुनौतियों के बारेमेंजानकारी दी गई। इसमेंबड़ी संख्या मेंशोधार्थी और विद्यार्थी सम्मिलित हुए।

https://www.livehindustan.com/jharkhand/ranchi/story-70th-anniversary-seminar-on-aerospace-technologies-at-bit-mesra-with-drdo-experts-201732821832797.html

Hindustan Times

Thu, 28 Nov 2024

India successfully tests K-4 nuclear-capable missile from INS Arighaat

The Indian Navy on Thursday successfully conducted a test firing of the 3,500 km-range K-4 ballistic missile from its newly inducted nuclear-powered submarine, INS Arighaat. The test, conducted in the Bay of Bengal, marks a significant milestone in India's defence capabilities, particularly in enhancing its nuclear deterrence and validating the country's second-strike capability.

Defence sources told news agency ANI that the test results are being carefully analyzed. Following this, briefings will be provided to the top military and political leadership to assess the missile's performance. This trial is crucial for strengthening India's nuclear triad, ensuring the country's ability to retaliate in the event of a nuclear attack.

K-4 Ballistic Missile

The K-4 ballistic missile, designed to be launched from underwater platforms, is a key asset in India's arsenal. The Defence Research and Development Organisation (DRDO) had previously conducted extensive trials to prepare the missile for its full-range test, ensuring that it meets the stringent operational standards required for such strategic weapons.

The successful test adds to the operational readiness of INS Arighaat, which was commissioned into the Indian Navy just months ago in August 2024. The submarine was inducted at the Vishakhapatnam-based Ship Building Centre and boasts advanced technology, including a more powerful missile system than its predecessor, INS Arihant.

The INS Arighaat is fitted with K-4 missiles capable of striking targets at distances over 3,500 kilometers, far surpassing the range of the K-15 missiles on INS Arihant, which has a strike range of around 750 km. This upgrade makes INS Arighaat a formidable addition to India's nuclear-powered submarine fleet, providing the country with greater flexibility and strength in its strategic defense posture.

India's nuclear submarine

India's nuclear submarine fleet includes the INS Arihant, the first indigenously built nuclear-powered ballistic missile submarine, which was commissioned in 2018. The third vessel in this

class is also set to be inducted into the Navy next year, further bolstering the nation's deterrence capabilities.

Defence Minister Rajnath Singh, while commissioning INS Arighaat, highlighted that the submarine is a testament to India's technological prowess and the 'Aatmanirbharta' initiative of the government.

The construction of INS Arighaat involved the use of advanced design and manufacturing technology, detailed research and development, utilisation of special materials, complex engineering and highly skilled workmanship.

It has the distinction of having indigenous systems and equipment that were conceptualised, designed, manufactured & integrated by Indian scientists, industry and Naval personnel.

The technological advancements undertaken indigenously on this submarine make it significantly more advanced than its predecessor, Arihant. The presence of both INS Arihant and INS Arighaat will enhance India's capability to deter potential adversaries and safeguard its national interests.

https://www.hindustantimes.com/india-news/india-successfully-tests-k-4-nuclear-capable-missile-from-ins-arighaat-submarine-101732781511255.html

THE HINDU BusinessLine

Thu, 28 Nov 2024

DRDO's tech fund boosts MSMEs and start-ups with bulk of sanctions

The Defence Research and Development Organisation (DRDO)'s Technology Development Fund (TDF) scheme, which is part of the 'Make in India' initiative, has sanctioned a total of 78 projects valued at ₹333.21 crore so far. A significant portion of this funding has been directed towards MSMEs and start-ups, according to a senior DRDO official.

The TDF scheme is designed to support the development of innovative defence technologies. Under the scheme, MSMEs and start-ups can submit project proposals, if selected, they can receive funding from DRDO. "Initially, the funding cap was ₹10 crore, but following consultations with MSMEs and feedback from the Raksha Mantri, the funding limit has been raised to ₹50 crore, said Manish Pratap Singh, Director, DYSL-CT, DRDO Young Scientist Laboratory, Chennai. He was speaking at a session on the "Role of MSMEs in Defence Manufacturing" at EEPC India's IESS XII event.

A key feature of the TDF scheme is that DRDO will cover 90 per cent of the project cost, with the remaining funding to be provided by the industry partner.

Singh explained the approval process for the TDF scheme, highlighting that it is highly transparent. The evaluation committee, including the Chairman, adopts an open-minded approach.

“We do not focus on bureaucratic formalities; instead, our primary focus is on the innovation of the technology and how well it aligns with defence needs. Our goal is to fund projects that have the potential to make a meaningful impact,” he added.

Singh also highlighted DRDO’s Dare to Dream, an initiative that invites individuals and small companies to submit innovative solutions for existing defence challenges. Winners of the contest can receive additional funding to develop their ideas into prototypes through the TDF. “This scheme provides an excellent opportunity for individuals or small companies with innovative ideas to showcase their solutions. There is no application fee, and the top winners receive cash prizes (₹10 lakh for first place, ₹6 lakh for second, and ₹5 lakh for third),” he added.

Additionally, Singh spoke about two government programmes—IDX (Innovative Defence Excellence) and Aditi—which have a combined budgetary support of ₹750 crore between FY24 and FY26, aimed at encouraging MSMEs to take advantage of emerging opportunities.

“In 2023, the government launched IDX, which promotes cutting-edge technologies. Under this scheme, MSMEs can receive up to ₹3 crore for innovative defence proposals. Recognising that this might not be enough, the government has also launched the Aditi scheme, which offers up to ₹25 crore in funding, with 50 per cent of the budget covered by the Ministry of Defence. The Aditi scheme will focus on developing 30 critical technologies aimed at import substitution,” he added.

https://www.thehindubusinessline.com/companies/drdos-tech-fund-boosts-msmes-and-start-ups-with-bulk-of-sanctions/article68922971.ece

Defence News

Defence Strategic: National/International

Press Information Bureau
Government of India

Ministry of Defence

Thu, 28 Nov 2024

Army Chief General Upendra Dwivedi Addresses 26th Doctrine And Strategy Seminar

General Upendra Dwivedi, Chief of the Army Staff (COAS) addressed participants of the 26th Doctrine and Strategy Seminar (DSS) in Mhow today. The two-day seminar, on the theme, ‘Need

for Adaptive Doctrines/ Operational Philosophy for Indian Army in view of recent Conflicts and Technology Infusion in Warfare', was conducted at the Army War College on 27th and 28th November 2024.

Aim of the seminar was to critically examine the validity of established doctrines, operational strategies, and tactics, techniques and procedures (TTPs) of the Indian Army in light of recent conflicts and induction of niche technology and recommend necessitated changes in doctrines, operational philosophies and TTPs to meet the challenges of future conflicts. Experts from the fields of Geo-Strategic affairs, Geo-Political affairs, Armed Forces, Defence Public Sector Undertakings and Industries expressed their views on various operational and logistics aspects and capability development of Armed Forces in the modern warfare environment.

The seminar was organised under three themes as follows: -

The Global Scan - Latest Trends and Technology Infusion in Warfare and Imperatives for the Indian Army: The first session focused on global scan to identify latest trends in military niche technology and analyse its impact on conduct of warfare, highlighted the doctrinal and tactical changes adopted by nations in their warfighting approach in recent conflicts and imperatives for Indian Army, analysis of the adversaries' warfighting concepts and their pursuit for niche technology and implications for India, and identification of the technologies being developed/ imported by the adversaries and their intended application against India including in sub conventional operations.

Warfighting Strategy - Impact on Conduct of Warfare - Rethinking Doctrine/ Strategy/ TTPs: The second session critically analysed the validity of existing doctrines/ strategy/ TTPs in conventional warfighting in mountains/ High Altitude Areas (HAA) with infusion of niche technology, conventional warfighting in plains and deserts along with recommended changes in doctrine/ strategy to meet the opportunities and challenges posed by infusion of niche military technology, and the impact of new age technology on CI/ CT operations and recommend changes in doctrine/ strategy and TTPs.

Technology as an Enabler – Human Resource (HR) and Logistics Aspects: The last session tried to identify the major impact on HR aspects as a fallout of integrating niche technology into the warfighting doctrines/ strategy and analyse the major impact of niche technology on logistic operations and need for restructuring the current Operational Logistics framework of the Indian Army.

During his talk, the COAS commended the in-depth analysis of strategic and operational issues, emphasising the critical need for transformation and adaptation in response to the evolving nature of warfare. The COAS stated that modern conflicts are increasingly focused on achieving political objectives through non-military means, with military strategies incorporating new technological advancements. He described contemporary warfare as a continuum of 5Cs - Competition, Crisis, Confrontation, Conflict, and Combat, blending statecraft and diplomacy with kinetic and non-kinetic actions.

The COAS highlighted the defining characteristics of 5th generation warfare, including non-kinetic military actions such as disinformation, cyber-attacks, and the use of artificial intelligence

and autonomous systems. He stressed that while newer forms of warfare are emerging, older generations remain relevant, with both non-contact and non-kinetic methods being integrated into military strategies.

Drawing lessons from the Russia-Ukraine war, the COAS identified key takeaways: the importance of Combined Arms Operations, leveraging asymmetric tactics, and enhancing Civil-Military Integration. These lessons underscore the need for military leaders to operate seamlessly within the broader DIME T framework. The COAS also pointed to the ongoing Decade of Transformation (2023-2032) as a step toward achieving this integrated approach.

Addressing national security challenges, the COAS discussed the complexities of Grey Zone operations, the two-front challenge, and the need for convergence of land operations, maritime and air strategies to protect India's interests in the Indo-Pacific region. With adversaries increasingly employing hybrid strategies, the Indian Army must adapt doctrines to counter multi-dimensional threats from both state and non-state actors.

The COAS emphasised that military doctrines must be flexible, enabling unity of effort while fostering individual judgment. Technology, including artificial intelligence, precision warfare, and cyber capabilities, must be integrated to support multi-domain operations. He stressed the need for military leaders to adapt quickly to technological challenges at the front lines and to foster institutional agility in developing and deploying new technologies.

On the role of leadership, the COAS highlighted its paramount importance in military adaptation. Strong and adaptive leadership is essential to overcome challenges in doctrine and technology. The COAS also advocated for a reduction in excessive doctrinal rigidity, urging greater agility, decentralisation, and rapid decision-making, particularly at the tactical level.

In conclusion, the COAS called for the development of adaptive doctrines that incorporate dynamic threat assessments, technology integration, realistic training, and wargaming. These doctrines should promote jointness, interoperability with allied nations, and seamless civilian-military synergy, leveraging innovations from the private sector for military applications.

https://pib.gov.in/PressReleasePage.aspx?PRID=2078589

Press Information Bureau
Government of India

Ministry of Defence

Thu, 28 Nov 2024

Indian Army Launches ‘Eklavya’ Online Digital Platform For Officers’ Training

General Upendra Dwivedi, Chief of the Army Staff (COAS), launched an online learning platform for the Indian Army nicknamed as “Eklavya” today. This initiative aligns with the Indian Army

propelling itself into the “Decade of Transformation” as envisioned by the COAS and also with Indian Army’s theme for 2024 as the “Year of Technology Absorption.”

The Eklavya software platform has been developed under the aegis of Headquarters Army Training Command with Army War College as the sponsor agency. The platform has been developed at zero cost through “Bhaskaracharya National Institute of Space Applications and Geoinformatics” (BISAG-N), Gandhinagar, along with support from Directorate General of Information Systems.

This platform has been hosted on the Army Data Network and features a scalable architecture. This enables Headquarters Army Training Command to seamlessly integrate any number of training establishments of the Indian Army, each capable of hosting an extensive range of courses. Student officers are permitted to register for multiple courses simultaneously. A total of 96 courses by 17 Category ‘A’ Training Establishments of the Indian Army have already been hosted on the platform.

There are three categories of courses hosted on the Eklavya platform. The first category is the ‘Pre-Course Preparatory Capsules’, which has study material for all offline physical courses being conducted at various Category ‘A’ training establishments. The aim is to shift the “basics” to the online courses so that physical courses have more and more contemporary content with a focus on the “application part”.

It will help to decongest the existing courses while generating time for adding emerging concepts as per the changing character of warfare. An important aspect is that the students can register for any course at any point of their service. That is, registration for online courses has been delinked from nomination on the physical courses.

The second category of courses are the “appointment or specific assignment-related courses”. Officers on getting posted to some of the specialist appointments have to learn the craft by getting on-the-job training (OJT) and therefore, it takes a finite amount of time for them to function with full efficiency in those appointments. Some of such appointments are in the domain of information warfare, defence land management, financial planning, discipline and vigilance, works, provost, veteran affairs etc.

Therefore, it will be beneficial for these officers to undergo an online capsule course in the respective domain as they receive their posting order. The courses in this category will also enable the officers to get domain specialisation in the field of their choice, which will further aid their employment planning.

The third category of courses is the “Professonal Development Suite” to include courses on Strategy, Operational Art, Leadership, Organisational Behaviour, Finance, Art of Reading, Power Writing, Emerging Technology etc.

The Eklavya also has the functionality of a searchable “Knowledge Highway”, wherein various journals, research papers and articles etc are uploaded under a single window. The platform will go a long way in encouraging continuous professional military education in the officers, decongest and enrich the existing physical course, preparing officers for specialist appointments and encouraging domain specialisation.

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Press Information Bureau
Government of India

Ministry of Defence

Thu, 28 Nov 2024

ICG organises 22nd National Maritime Search and Rescue Board meeting in Kochi

Defence Secretary inaugurates 11th National Maritime Search & Rescue Exercise

ndian Coast Guard (ICG) organised the 22nd National Maritime Search and Rescue (NMSAR) Board meeting on November 28, 2024 in Kochi, Kerala. The event also marked the commencement of the 11th edition of National Maritime Search and Rescue Exercise (SAREX-24), off the Kochi Coast on November 29, 2024. Defence Secretary Shri Rajesh Kumar Singh inaugurated the event and interacted with foreign delegates in attendance. He lauded the role played by ICG in providing SAR services in the Indian Search & Rescue Region and helping the fishing community at sea. He also assured all assistance from the government towards strengthening ICG.

The board meeting was chaired by Director General ICG & Chairperson of the NMSAR Board DG Paramesh Sivamani. In his address, he underscored the collective commitment to safeguarding lives at sea and the pivotal role of efficient maritime search & rescue operations in strengthening India's maritime safety framework.

National SAR Awards for 2023-24 were also presented during the meeting. These awards recognised the outstanding contributions to maritime safety and SAR operations. The awardees were:

- Merchant Vessel Category: MV Singapore Bulker (Panama-flagged vessel)
- Fishing Boat Category: Indian Fishing Boats Paramita 5, Geeta, and Bahubali
- Government-Owned SAR Unit Category: ICG Air Squadron 835 Sqn (CG)
- Ashore Unit Category: Indian National Centre for Ocean Information Services (INCOIS)

The meeting was attended by a diverse group of stakeholders, including representatives from the Indian Navy, Indian Air Force, ISRO, INCOIS, Airports Authority of India, Directorate General of Shipping, Customs, Coastal Police, Directorate General of Civil Aviation, Shipping Corporation of India, Indian Meteorological Department, Fisheries Department, Maritime Boards, Port Authorities, Coastal States/Union Territories, Border Security Force, Central Industrial Security Force, National Disaster Management Authority and other associated entities. Interactive sessions and presentations were held, promoting cooperation and reinforcing efforts to achieve the shared goal of maritime safety.

Established in 2002, the NMSAR Board convenes annually to discuss policy matters, formulate guidelines and procedures, and review the National Search and Rescue Plan. The 22nd NMSAR Board meeting focused on enhancing collaboration and coordination among stakeholders to further improve maritime safety. The meeting reaffirmed the critical importance of effective maritime search and rescue operations. It highlighted ongoing efforts to enhance India's maritime safety framework, underscoring the dedication of all participating agencies to ensuring safer and more secure maritime operations in Indian waters.

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Press Information Bureau
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Ministry of Defence

Thu, 28 Nov 2024

Fourth Meeting of Working Group on Military Cooperation under the India – Russia Inter Governmental Commission on Military and Military-Technical Cooperation successfully concludes in Moscow

The fourth meeting of the Working Group on Military Cooperation under the India – Russia Inter Governmental Commission on Military and Military-Technical Cooperation (IRIGC-M&MTC), concluded successfully in Moscow Russia. The meeting marked a significant milestone in advancing the long standing Strategic Partnership between the two countries.

The meeting was co-chaired by Lieutenant General JP Mathew, Chief of Integrated Defence Staff representing India and Lieutenant General Dylevsky Igor Nikolaevich, Deputy Chief of the Main Operational Directorate of the General Staff of the Russian Federation Armed Forces. The Working Group emphasised the importance of continued knowledge-sharing and collaboration in areas of strategic interest. It also agreed upon expanding joint exercises to further solidifying the operational synergy between the two forces. Both nations have conducted numerous joint exercises across land, air and sea domains. Exercises such as INDRA, AVIA INDRA and INDRA NAVY, have served as vital platforms for sharing best practices, refining joint operational tactics drills and procedures, and deepening mutual understanding.

The Declaration on the India-Russia Strategic Partnership was signed in 2000, which was elevated to the level of Special and Privileged Strategic Partnership in 2010. The Working Group, a crucial forum for India-Russia defence cooperation, provides a platform to assess existing military engagements and identified new areas for collaboration to address evolving security challenges.

https://pib.gov.in/PressReleasePage.aspx?PRID=2078236

Press Information Bureau
Government of India

Ministry of Defence

Thu, 28 Nov 2024

Self-reliance & indigenous defence capabilities are the foundations to enduring peace, says CDS Gen Anil Chauhan

Chief of Defence Staff General Anil Chauhan today underscored that as India marches ahead on the path of progress and prosperity, self-reliance and indigenous defence capabilities are the foundations to enduring peace. The CDS was addressing the inaugural session of the Defence Partnership Days – organised jointly by the Centre for Joint Warfare Studies and Indian Military Review, on 28 November 2024, in New Delhi. The event was inaugurated by Gen Anil Chauhan along with Secretary (Defence Production) Shri Sanjeev Kumar.

The CDS said, “Today, India is at the centre stage of global optimism. We have become the fifth largest economy in the world. As we march ahead on the path of progress and prosperity, we believe that self-reliance and indigenous defence capabilities are the foundations to enduring peace. India’s security landscape necessitates a robust and self-reliant defence sector.”

Gen Anil Chauhan underscored that a common thread that binds all stakeholders is National Interest. The whole enterprise of indigenisation will not succeed if the glue of National Interest does not bind all the elements, he said. Talking about various reforms and initiatives by the Government in the defence sector, Gen Anil Chauhan said, “India has opened up its defence industry through reforms. It has opened it up for private industry, joint ventures, FDI, etc. But, we are yet to fully open up our minds. To really succeed, we will have to imbibe the ‘4I’s and be – innovative, inventive, indigenous and imaginative.”

Stating that the investments in defence manufacturing takes time to accrue returns, and the time gap in defence R & D is even longer, and also the outcome can also be uncertain, CDS suggested that the Defence Bank with earlier loan terms can be one option, in addition to funding in projects like iDEX and TDF.

He also suggested formulation of defence policies in emerging technologies like space, AI, quantum and autonomous systems that give direction to the industry as to how the services see the future unfolding.

Over 200 companies and 100 officers from the Ministry of Defence and Armed Forces, dealing with technology and procurement are participating in the two-day event.The event is designed to bring together government and business stakeholders, and to facilitate strategic engagements through a series of targeted business-to-government (B2G) and business-to-business (B2B) meetings. On the sidelines of the event, an exhibition by 75 companies is being organized to showcase what the industry has to offer for building the nation’s defence capabilities.

https://pib.gov.in/PressReleasePage.aspx?PRID=2078587

Press Information Bureau
Government of India

Ministry of Defence

Thu, 28 Nov 2024

President visits Defence Services Staff College, Wellington in Tamil Nadu

India is moving towards self-reliance to keep Armed Forces ready to meet future challenges: Smt Droupadi Murmu

“Need to secure national interests & be prepared for new security challenges like cyber warfare & terrorism”

President Smt Droupadi Murmu visited the Defence Services Staff College (DSSC), Wellington in The Nilgiris District, Tamil Nadu on November 28, 2024. Addressing the student officers and faculty, the President said the DSSC has made commendable contribution to training & educating the potential leaders of the Armed Forces of India and friendly countries & selected civilian officers. Over the past seven decades, it has played a major role in professionally grooming the middle level officers. It has the unique distinction of having a composite multi-service and multi-national group of student officers and a professionally enriched faculty.

The President was happy to note that women officers are now commanding various units in all the three services. She said that the increasing strength and role of women in all spheres is encouraging and inspiring for all, especially young girls. She expressed hope for witnessing more and more women joining the Armed Forces, where they can demonstrate exceptional capabilities and break new ground in uncharted territories.

The President said that India is rising and the world is acknowledging the growth in various sectors, including defence. India is moving towards indigenisation and self-reliance to keep the Armed Forces ready to meet the future challenges. The country is being developed as a major defence manufacturing hub, and is moving towards becoming a reliable defence partner & big defence exporter.

The President said: “In the fast-changing geopolitical environment, we need to be well-prepared to tackle any situation. We not only have to secure our national interests, but also prepare for new national security challenges like cyber warfare and terrorism. Updated knowledge and cutting-edge technologies based on intensive research are required to be applied.” She expressed confidence that this course will prepare student officers all for higher responsibilities and as strategists who can deal with complex situations in an effective manner.

The President appreciated the unique role of the institution in nurturing the future senior leadership of the Armed Forces. She appreciated the creativity, dedication and the focus with which training is being conducted at the College. She also complimented the student officers for having being

selected for the prestigious Staff Course at DSSC, and their rigourous efforts while undertaking this course.

The President also interacted with the Student Officers, including 38 from friendly countries, attending the course at the DSSC. She hailed the role of the International Student Officers in strengthening the mutual cooperation and relationship of their countries with India, and wished them a fruitful and successful stay at DSSC.

The President also laid a wreath at the War Memorial, and interacted with Ex-servicemen & Veer Naris.

The President felicitated the Veer Naris acknowledging the supreme sacrifice of their loved ones in the service to the Nation. She was accompanied by Minister of Backward Classes (Minister-in-Waiting) of Tamil Nadu Government Shri Siva V Meyyanathan and Commandant DSSC Lt Gen Virendra Vats.

Established in 1948, DSSC is a premier Tri-services institute with a mandate to train and hone their skills of selected middle-level officers of the Armed Forces of India and friendly countries. Since its inception, the College has trained more than 2,000 International Officers, and 24,000 Indian Officers have passed through its portals. The College alumni, over the years, have risen to become heads of States and Militaries across the world. The President appreciated the training activities being conducted at the College with special emphasis on initiatives undertaken on enhancing jointmanship amongst the officers of the Indian Armed Forces.

https://pib.gov.in/PressReleasePage.aspx?PRID=2078467

THE HINDU

Thu, 28 Nov 2024

IAF team in Egypt for 2nd edition of elite Tactical Leadership Programme

An Indian Air Force contingent of SU-30MKIs and personnel is in Egypt for the second edition of the month-long Tactical Leadership Programme (TLP) at Egyptian Air Force (EAF) Weapon School, along with the Air Forces of Jordan and Greece.

This is a unique exercise different from regular military exercises as it is done at the instructor level with sharing of best practices and interoperability at a much higher level. The IAF team is led by Gwalior-based Tactics and Air Combat Development Establishment (TACDE), which trains the top cream of fighter pilots.

The IAF team reached Egypt on Tuesday (November 26, 2024), sources confirmed. The TLP will see exchange of ideas in the domain of large force engagements involving complex and multi-aircraft missions deepening interoperability, sources said. In the maiden TLP in 2022, TACDE participated with three Sukhoi-30 MKI aircraft and six combat instructor pilots.

The induction and de-induction had involved flights of over six hours with mid-air refuelling support from the IAF and UAE Air Force. This time too, the IAF has deployed a IL-78 mid-air refueller for non-stop flight.

During the programme, IAF's SU-30MKI jets and pilots will hone their war fighting skills and refine tactics in missions by day and night, involving air to ground and air to air combat scenarios flying alongside Egyptian F-16, Rafale and Mig-29 aircraft as well as F-16s from Greece and Jordan.

India and Egypt have significantly deepened military to military cooperation over the years. Cooperation between the two Air Forces dates back to the 1960s when Gp. Capt. Kapil Bhargava, an IAF Test Pilot, test flew the Egyptian prototype of the Helwan HA-300 with Test Pilots from the Egyptian Air Force. This was followed by Indian Qualified Flying Instructors training young Egyptian pilots, a programme that continued into the 1980s.

https://www.thehindu.com/news/national/iaf-team-in-egypt-for-2nd-edition-of-elite-tactical-leadership-programme/article68923733.ece

THE ECONOMIC TIMES

Thu, 28 Nov 2024

'Great progress' made in implementing border agreement with India: Chinese military

The Chinese military on Thursday said that "great progress" has been made in implementing the border agreement with India to end the over four-year standoff at eastern Ladakh and termed the recent meeting between the defence ministers of the two sides as positive and constructive.

"We also look forward to harmonious dance between the Chinese dragon and Indian Elephant with concerted steps," Defence Ministry spokesman Sr Col Wu Qian said while addressing the monthly media briefing here.

He said Defence Minister Rajnath Singh and his Chinese counterpart Admiral Dong Jun had a positive and constructive meeting last week in Vientiane, the capital city of Laos, on the sidelines of a regional security conclave. The two sides are implementing the settlement reached between the two counties, he said, answering a question on the progress of the execution of the agreement reached between the two countries last month to end the standoff in eastern Ladakh.

"Now, we are making great progress," he said. The two ministers agreed to implement the important consensus reached between the top leaders and promote stable relations between the two countries, he added.

Wu said the two militaries should strictly abide by the recent common understandings reached by the two sides to de-escalate tensions at the border areas, make efforts to bring down the tensions and focus on enhancing mutual trust and exchanges between the two countries.

"We hope the two sides can seize the opportunity and build new momentum to make new progress in the military-to-military relations," he said.

On October 21, India and China firmed up an agreement on patrolling and disengagement of troops along the Line of Actual Control (LAC) in eastern Ladakh, in a breakthrough to end the standoff.

At their Kazan meeting, Prime Minister Narendra Modi and Chinese President Xi Jinping endorsed the India-China agreement on patrolling and disengagement along the LAC in eastern Ladakh and issued directions to revive various bilateral dialogue mechanisms, signalling attempts to normalise ties that were hit by a deadly military clash in 2020.

https://economictimes.indiatimes.com/news/defence/india-china-making-great-progress-in-implementing-border-disengagement-agreement-chinese-military/articleshow/115768166.cms

THE ECONOMIC TIMES

Thu, 28 Nov 2024

'Pakistan to earn USD 30 billion from defence exports in coming years'

Pakistan potentially stands to earn approximately USD 30 billion in coming years by exporting defence products and equipment to friendly countries, the Ministry of Defence said on Thursday.

Pakistan has signed 82 Memorandum of Understanding (MoUs) during the International Defence Exhibition and Seminar (IDEAS 2024) to export defence products and equipment including advanced drones, fighter jets, commercial and logistic ships, electronic warfare equipment, and radars, Ministry of Defence Production Secretary Lt Gen (Retd) Chiragh Haider told PTI.

Haider said the 12th edition of IDEAS held last week amidst tight security in Karachi was a big success and ended with a lot of potential export agreements.

Defence manufacturers and exhibitors from over 55 countries including the United States, Russia, China, Turkiye, Iran, Italy, the UK, and Azerbaijan sent delegations to take part in the exhibition.

"Pakistan has signed MOUs for potential export orders totalling USD 30 billion but keep in mind MoUs take time to mature and turn into projects, as testing, trial, and sometimes further modification occurs," Haider said. Haider said the MOUs could and should translate into potential export orders in coming years.

The Defence Secretary said Pakistan has achieved defence exports worth USD 1.3 billion over the past three years since the previous edition of IDEAS in 2022.

Defence Export Promotion Organisation (DEPO) Director General Major General Asad Nawaz Khan said most of the MOUs were inked with six public sector entities, including Heavy Industries Taxila (HIT), Pakistan Ordnance Factory (POF) in Wah, Pakistan Aeronautical Complex (PAC)

Kamra, The National Radio and Telecommunication Corporation (NRTC), and Global Industrial and Defence Solutions Pakistan (GIDS Pakistan).

He said Pakistan and China have also signed defence equipment agreements. Pakistan showcased its Haider Main Battle Tank (MBT) and new mediumaltitude long-endurance Shahpar III drone aside from Al-Khalid and Al-Zarrar tanks and the latest model of the Super Mushshak Aircraft at IDEAS.

https://economictimes.indiatimes.com/news/defence/pakistan-to-earn-usd-30-billion-from-defence-exports-in-coming-years/articleshow/115769278.cms

THE ECONOMIC TIMES

Thu, 28 Nov 2024

Russia's Satan 2 missiles dubbed as most destructive weapon on earth. Here's all about it

Russia plans to deploy its RS-28 Sarmat intercontinental ballistic missile, also known as "Satan 2," despite challenges and failed tests. This missile, a critical part of Russia's nuclear arsenal, has sparked global attention for its devastating potential.

Whatis the Sarmat Missile?

The RS-28 Sarmat is a next-generation intercontinental ballistic missile (ICBM) designed to replace the Soviet-era R-36 ICBMs, commonly referred to as "Satan" by NATO. Known as "Satan 2," the Sarmat is set to become the backbone of Russia's silo-based strategic deterrent and is considered one of the most powerful nuclear weapons globally.

The Sarmat missile can carry up to 15 nuclear warheads, arranged as Multiple Independently Targetable Re-Entry Vehicles (MIRVs), allowing it to strike multiple targets simultaneously. Measuring 116 feet in length and weighing 220 tonnes, the missile boasts a range of 6,200 to 11,180 miles, enabling it to target regions across the U.S. or Europe.

The missile's short initial launch phase reduces the time available for enemy surveillance systems to track it. Coupled with a top speed exceeding 12,000 mph, it can reach distant European targets in as little as three minutes, making it highly effective in surprise strikes.

First test-launched in April 2022, the Sarmat officially entered combat service in 2023. Announced by President Vladimir Putin in 2018 alongside other advanced weapons like the Kinzhal and Avangard hypersonic missiles, the Sarmat represents Moscow's response to the U.S. Prompt Global Strike system.

The ICBM reportedly can wipe out parts of the earth the size of Texas and France and is capable of targeting major cities of the UK and other European nations. The missile has been designed with stealth technology, means that it can be fired at a target without being detected by enemy radars.

The Sarmat reportedly could deliver warheads 2,000 times as powerful as the atom bombs dropped on Hiroshima and Nagasaki in 1945.

Putin claims the missile is unmatched globally, with all components manufactured domestically, ensuring independence from foreign suppliers.

https://economictimes.indiatimes.com/news/defence/russias-satan-2-missiles-dubbed-as-most-destructive-weapon-on-earth-heres-all-about-it/articleshow/115773820.cms

THE ECONOMIC TIMES

Thu, 28 Nov 2024

All about Russia's Oreshnik ballistic missile that West cannot intercept

Russian President Vladimir Putin announced the successful combat test of a new intermediate-range ballistic missile, dubbed Oreshnik, during a strike on Dnipro, Ukraine, this month. Putin claims Western air defenses cannot intercept the missile.

The Oreshnik, meaning "hazel tree" in Russian, was tested "in a non-nuclear hypersonic configuration" and hit its target, according to Putin. He described the missile as a “precision weapon”, not a weapon of mass destruction, stating, “there is no nuclear warhead, and that means there is no nuclear contamination after its use.” However, military experts suggest the missile could potentially carry nuclear warheads.

Warheads and Capabilities

The missile can carry "dozens of homing warheads," with destructive elements inside reaching temperatures of 4,000 degrees Celsius, comparable to the Sun’s surface. Putin emphasized its capability to penetrate deeply protected targets without causing nuclear contamination. Despite being used with a conventional warhead in Dnipro, experts suggest Oreshnik could also be fitted with nuclear warheads.

Both Putin and missile forces commander Sergei Karakayev noted that a mass strike with Oreshnik could rival the power of nuclear weapons.

Speed and Defense Evasion

With a top speed exceeding Mach 10, Oreshnik is hypersonic, maneuverable, and impossible to intercept using current air defense systems, according to Putin. Ukrainian military intelligence reported that the missile covered 800 kilometers to Dnipro in just 15 minutes, achieving a terminal speed of over Mach 11.

Range and Development

As an intermediate-range missile, Oreshnik can strike targets across Europe. Developed under Putin’s orders in 2023, it is described as a modern innovation rather than a Soviet-era upgrade.

Serial production has reportedly begun, although Ukrainian intelligence believes only a few prototypes exist.

https://economictimes.indiatimes.com/news/defence/all-about-russias-oreshnik-ballistic-missile-that-west-cannot-intercept/articleshow/115774878.cms

THE ECONOMIC TIMES

Thu, 28 Nov 2024

India, Russia explore joint production of Sukhoi engine

India and Russia are exploring the possibility of jointly manufacturing engines for Sukhoi fighter jets, people familiar with the matter said, adding that the chairman and managing director of state-run Hindustan Aeronautics Limited (HAL), DK Sunil, is visiting Russia ahead of defence minister Rajnath Singh's Moscow visit from December 8-10.

Sunil is in Russia reportedly for clinching a deal for licensed manufacturing of 240 AL-31FP aero engines for Su-30MKI fighter jets presently in service with the Indian Air Force. The twin-engine Su-30MKI are due for upgrade to enhance their operational lives.

Recently, HAL secured a contract worth ₹26,000 crore (about $3.1 billion) for the supply of 240 AL-31FP engines for Su-30MKI fighter jets, which are integral to India's air force fleet.

India and Russia may also explore joint production ofjet engines in India, including transfer of technology from Russia, according to the people.

During his visit Singh will hold his maiden Inter Governmental Commission meeting with Russia's new defence minister, besides receiving the frigate manufactured in Russia's Kaliningrad for the Indian Navy. He will receive the stealth frigate Tushil, the first of the four state-of-the-art frigates being made for the Indian Navy.

https://economictimes.indiatimes.com/news/defence/india-russia-explore-joint-production-of-sukhoi-engine/articleshow/115781629.cms

#SWARAJYA

Thu, 28 Nov 2024

What The K-4 Missile Test Means For India's Nuclear Submarine Force

India's strategic capabilities took a significant leap forward with the maiden test of its K-4 submarine-launched ballistic missile (SLBM) from an operational SSBN on 27 November. India

had previously tested the missile at least twice, launching it from an underwater pontoon. The nuclear-capable missile, boasting a range of 3,500 km, was launched from INS Arighat, India's second operational nuclear-powered ballistic missile submarine (SSBN), which entered service earlier this year. This development represents a major upgrade to India's nuclear triad, providing a robust second-strike capability that deters adversaries while addressing operational constraints.

A nuclear triad refers to the ability to deliver nuclear weapons through three platforms: land-based intercontinental ballistic missiles (ICBMs), air-delivered bombs or cruise missiles, and submarine-launched ballistic missiles (SLBMs).

This diversification ensures that a nation's nuclear deterrent remains credible even if one or two legs of the triad are compromised in a preemptive strike. For India, the triad is essential to maintaining strategic stability and deterring aggression from nuclear-armed adversaries like China and Pakistan. Until now, India's SSBN fleet relied on the K-15 SLBM, which has a limited range of 750 km. The K-15 restricted India's ability to strike key targets in Pakistan and China without significant risk. To overcome the missile's limited range, Indian SSBNs would need to operate in proximate waters, such as the Arabian Sea or South China Sea, exposing them to detection and counter-strike by adversary forces.

The successful K-4 test fundamentally alters this dynamic. With a range extending to 3,500 km, an SSBN equipped with K-4 missiles can target high-value assets in most of China, including Beijing, as well as any location in Pakistan, while safely operating from secure bastions in the northern Bay of Bengal. This operational advantage reduces vulnerability to anti-submarine warfare (ASW) efforts and enhances survivability, a critical factor for ensuring credible deterrence under India's no-first-use doctrine. The K-4's range and deployment bolster the credibility of India's second-strike capability, which is fundamental to its nuclear doctrine of massive retaliation.

In a hypothetical scenario where China executes a counter-force strike to neutralize India's land-based nuclear arsenal, the survival of sea-based assets becomes paramount. Equipped with K-4 SLBMs, Indian SSBNs can operate securely from bastions in the Bay of Bengal, ensuring their ability to deliver a devastating retaliatory strike.

This credible sea-based deterrent forces adversaries to account for an assured second strike, effectively deterring any first-use or counter-force misadventures by making such attacks prohibitively costly and strategically futile. The K-4 thus strengthens the invulnerability of the sea leg, ensuring the triad's balance and the efficacy of India's nuclear posture. India is actively working on extending its SLBM capabilities.

The K-5, with a range of 5,000 km, is under development, promising to bridge the gap between regional and intercontinental strike capability. Simultaneously, efforts to field the K-6, a 6,000 km-range SLBM with MIRV (multiple independently targetable reentry vehicle) capability, are underway at DRDO's Advanced Naval Systems unit in Hyderabad.

https://swarajyamag.com/defence/what-the-k-4-missile-test-means-for-indias-nuclear-submarine-force

THE WEEK

Thu, 28 Nov 2024

No Meteor missiles for Indian Air Force's Su-30MKI, Tejas Mk1A, Tejas MkII fighter jets?

The plans of the Indian Air Force (IAF) to equip its fighter jets with highly advanced missiles may be hitting a roadblock as MBDA, a European defense consortium, behind Meteor missile, a cutting-edge, active radar-guided, beyond-visual-range air-to-air missile (BVRAAM), is not keen on India's fighter jets having this missile.

This would mean that the IAF's Su-30MKI, Tejas Mk1A, and the upcoming heavier more advanced Tejas MkII would not be equipped with Meteor missiles.

Currently, only the Rafale fighter jets of IAF are equipped with Meteor, which offers significant advancements over traditional air-to-air missiles especially in terms of range and effectiveness in complex combat scenarios.

Although IAF is interested in integrating Meteor missiles on to the home-made Tejas fighter jets and Su-30MKI, the European consortium's intention to make the European fighter jets more attractive when India holds the open tender for the Multi-Role Fighter Aircraft (MRFA) project to procure 114 fighter jets to address the dwindling fighter squadron strength of IAF appears to be the reason for this development.

Reports suggest that the consortium wants to make Gripen E and Eurofighter Typhoon, touted to be the world's most advanced swing-role combat aircraft, more desirable during the bidding process as these are equipped with Meteor.

Designed to engage a wide array of aerial threats, from agile fighter jets to small unmanned aerial vehicles (UAVs) and cruise missiles, Meteor can reach speeds exceeding Mach 4.

Billed as a "game changer", the air-to-air Meteor missile can strike with pinpoint precision from beyond the horizon in stressful situations, giving forces that are employing it a strategic edge. It is capable of engaging air targets autonomously, day or night, in all weather and even in harsh electronic warfare environments.

The inability of the IAF to integrate Meteor missiles on its fighter jets may give further push to India's indigenous Astra Mk3 air-to-air missile programme.

https://www.theweek.in/news/defence/2024/11/28/no-meteor-missiles-for-indian-air-forces-su-30mki-tejas-mk1a-tejas-mkii-fighter-jets.html

THE WEEK

Thu, 28 Nov 2024

India in focus as Pakistan, China discuss regional security and counter-terrorism

Military officials of Pakistan and China held talks on counter-terrorism and regional security amid unease following the recent attacks on Chinese nationals.

General Zhang Youxia, Vice Chairman of the Central Military Commission (CMC) China and one of Beijing's top military leaders, who is in Pakistan along with a high-level delegation, held a one-on-one meeting with Army Chief Gen Asim Munir on Wednesday. Following the meeting between the two, there were delegation-level discussions focused on matters of mutual interest, regional security dynamics, measures for regional stability, and enhancing bilateral defence cooperation.

General Zhang spoke about Pakistan's ongoing counter-terrorism efforts, which remain a major topic of discussion between the two countries in the wake of incidents of frequent attacks on Chinese nationals working in Pakistan.

General Munir spoke about the resilience of Pakistan-China relations, highlighting their ability to withstand shifts in international and regional dynamics, and thanked Beijing for its unwavering support for Pakistan. He affirmed that this historic partnership has withstood the test of time and is poised to grow further.

General Zhang praised Pakistan's dedication to the strategic partnership and reaffirmed China's commitment to strengthening the enduring bilateral relationship, according to a statement.

According to a report in Dawn, Beijing is reportedly seeking a more proactive role in ensuring the safety of its citizens in Pakistan, but the Foreign Office has emphasised that counter-terrorism cooperation between the two countries is based on mutual respect for each other's sovereignty.

Under the regional stability head, China and Pakistan exchanged views about India's role in the region and the developments in Afghanistan, particularly the presence of terrorist groups, according to the Dawn report.

Meanwhile, over 300 Chinese troops arrived in Pakistan to take part in the joint China-Pakistan anti-terrorism exercise, Warrior-VIII. The opening ceremony for the drills was held on Wednesday. The joint drill, which will continue till mid-December, aims to enhance joint counter-terrorism operational capabilities.

https://www.theweek.in/news/defence/2024/11/28/india-in-focus-as-pakistan-china-discuss-regional-security-and-counter-terrorism.html

Press Information Bureau
Government of India

Ministry of Science & Technology

Thu, 28 Nov 2024

"IIT Ropar Expands Footprint in Northeast India: iHub-AWaDH Establishes Eighth CPS Lab at CCCT, Sikkim, to Drive Skill Development in Cyber-Physical Systems"

IIT Ropar's iHub-AWaDH, an initiative under the National Mission on Interdisciplinary Cyber-Physical Systems (NM ICPS), Department of Science and Technology, Government of India, collaborated with the Centre for Computers and Communication Technology (CCCT), Chisopani, Sikkim—a leading educational institution in India, known for excellence in education, research, and innovation. CCCT is the oldest polytechnical college in Sikkim, celebrating its silver jubilee, and was the first Wi-Fi campus in the state. Together, we have established the AWaDH CPS Lab, which focuses on providing quality education, promoting innovation, and elevating technical skills among students.

As the lush hills of Sikkim frame the backdrop, AWaDH has inaugurated this first-of-its-kind AWaDH CPS Lab in Northeast India at CCCT Chisopani. The event, steeped in a spirit of collaboration and hope, brought together dignitaries from across India. The inaugural event featured an inauguration ceremony, graced by the Chief Guest Mr. Sarsij Saurabh, General Manager, BSNL Sikkim; in the august presence of Dr. Suman Kumar, Associate Professor, IIT Ropar; Dr. Radhika Trikha, Chief Executive Manager, AWaDH; Mr. M. Ravi Kumar (IFS, Director, MSME); Mr. L. D. Sharma, Chief Education Officer, Soreng; Mr. Samdup Bhutia (Director, Skill Development); Mr. Gyan Prasad Sharma, Chief Education Officer, Namchi; Arun Tamanj, Associate Director, SDD, and a guided tour of the facility by our Project Manager Deshraj Dhiman along with technical team. The lab aims to serve as a comprehensive platform for education, research, prototyping, testing, and collaboration.

Dr. Radhika Trikha delivered an engaging presentation highlighting the groundbreaking work being undertaken at the Cyber-Physical Systems (CPS) Lab. This initiative is designed to empower young graduates, postgraduates, researchers, faculty, and startups to delve into the realm of Cyber-Physical Systems (CPS) and incorporate these interventions into their daily activities.

Lab Features and Impact: The lab features cutting-edge IoT kits developed by IIT Ropar, providing a 24*7 plug-and-play module for hands-on experimentation and exploration of the IoT

landscape. The lab will serve as a foundation for creating an AWaDH Replica in Northeast India, catering to R&D, education, startup support, and joint consultancy and advisory projects.

The lab is equipped with state-of-the-art resources, including Voltera V one, Gateway, BLE Development Kit, BLE Node, Low Power Camera Module, Air Sense, Weather Pro and AI & ML workstations developed by Terafac Technologies Pvt Ltd, and various sensors to measure environmental activities. Notably, the lab is set to play a crucial role in integrating CPS into the course curriculum of Centre for Computers and Communication Technology,(CCCT) Chisopani, Sikkim Acting as a hub for CPS training in the Sikkim region, it opens doors for educational and skill development initiatives. The inaugural event marked the beginning of joint training programs, tailored explicitly as 'train the trainers' and 'train the students' modules, providing both theoretical and hands-on training in CPS.

https://pib.gov.in/PressReleasePage.aspx?PRID=2078622

Press Information Bureau
Government of India

Ministry of Science & Technology

Thu, 28 Nov 2024

IIT Guwahati is going to witness India's Largest Science Festival from November 30

Theme of this year's IISF is "Transforming India into an S&T driven Global Manufacturing Hub"

India International Science Festival (IISF) is going to be celebrated at Indian Institute of Technology Guwahati during 30 Nov. to 3 Dec. 2024. The Council of Scientific and Industrial Research (CSIR) is the nodal department for this year IISF and a constituent laboratory of CSIR namely National Institute for Interdisciplinary Science and Technology (CSIR-NIIST, Thiruvananthapuram) is coordinating the whole festival. IISF is a unique festival of science society engagement which was initiated in the year 2015 and the very first IISF was organised at IIT Delhi. Vijnana Bharati, a science movement of India conceptualized this science festival. North East India will witness this festival for the first time. To date, India International Science Festival has been the largest science event in the country with a participation of thousands of people who come together annually to foster scientific collaboration, inspire young minds and propel economic growth through scientific approaches.

This year in 2024, IISF is being organized at IIT Guwahati, Assam from November 30th – December 4th, 2024. The theme of this 10th edition of IISF is "Transforming India into an S&T driven Global Manufacturing Hub". It reflects the government's aim to merge science and technology with industrial growth, making India global leader in manufacturing.

IISF Organizers and Organizing Partners

The Ministry of Science and Technology (MoS&T), through their departments viz. Department of Science & Technology (DST), Council of Scientific & Industrial Research (CSIR), Department of Biotechnology (DBT) and Ministry of Earth Science (MoES) is responsible for conducting this mega annual event. Along with government organizations Vijnana Bharati has been a consistent organizing partner of IISF since the inception of this event.

The other organizations that took active part in IISF are office of Principal Scientific Advisor (PSA) to Govt. of India, Department of Space (DoS), Department of Atomic Energy (DAE), Directorate of Defence Research & Development (DDR&D), Ministry of New And Renewable Energy (MNRE), Ministry of Health & Family Welfare (MoH&FW), Department of Agricultural Research and Education (DARE), Ministry of Environment, Forest and Climate Change (MoEFCC), Ministry of Ayush, Ministry of Electronics and Information Technology (MeitY), Ministry of Rural Development (MoRD), and many other concerned ministries, their departments, councils and organizations.

The IISF-2024 is being coordinated by the CSIR, convened by CSIR-NIIST and partnered by all the major ministries and scientific departments of the Government of India in collaboration with Vijnana Bharati.

Thematic Events of IISF-2024

IISF has various themes that aim to indulge scientific and common people for diverse scientific discussions and activities. Here, everyone gets a chance to engage and learn scientific approaches due to the themes that have been planned after keeping in mind the needs of various stakeholders. For IISF some new themes have been added as per the need of North East India and here a little information is been given about all themes.

To begin with, IISF 2024 has one special event “Chandrayaan - The Museum of the Moon” where an artistic model by British artist Dr. Luke Jerram will be placed among the attendees to showcase and celebrate India’s success of Chandrayaan Mission. The model is a replica of the moon that measures about seven meters in diameter and will showcase the real like imagery of lunar surface where Chandrayaan was landed on August 23, 2023.

Mega Science and Technology Exhibition will showcase accomplishments and success stories of India in the field of Science, Technology, Engineering, and Mathematics (STEM). In the expo various technologies developed by Indian Scientific and R&D Institutions across the country kept on display for all four days of the festival to show and educate students, scientists, and the general public.

Make in India, Make for the World event aims to attract national as well as international organizations involved in manufacturing, technology, and logistics to discuss about things required to make India a global manufacturing hub. The New Nalanda known earlier as Student Science Village will enable interaction of students and teachers. The event aims to ignite students’ interest in STEM through interactive exhibits, demonstrations, educational games and challenges.

Pragya Bharat event will discuss New Frontiers in S&T that are needed to make India Viksit Bharat by 2047. The event aims at promoting cutting edge research across various scientific

disciplines like AI, Biotechnology, Cybersecurity, Robotics, Quantum Computing etc. which can make India developed and self-reliant.

Nari Shakti - Women's Development to Women-led Development in S&T event will focus on active participation of women in STEM and Entrepreneurship and discuss about various schemes provided by Government of India to empower women in S&T.

S&T Hackathon - Ideas for Viksit Bharat event is designed to encourage school and college students to develop innovative solutions related to science and technology, focusing on Viksit Bharat Sankalp. Teams comprising of students and mentors will be allowed to participate in the competition and winners will get attractive prizes whereas final participants will get special benefits like internships, project positions etc.

Young Scientists Conclave intends to bring together young researchers, scientists and innovators below the age of 45 years belonging to academia, research and industry fraternities. It enables young researchers to be aware of the scientific policies of India and the recent developments in science and technology of India including infrastructure development, funding opportunities etc.

Thought Leaders Round Table - Minister - Secretary - Councils - CEO Conclave will bring the leaders and policy makers like Central and State Government Ministers, Departmental Secretaries, S&T Councils and CEOs of Industries on one platform. The event will have discussions on important issues and establish collaborations for making big changes in public and private sectors that can align with the goal of Viksit Bharat.

The Gurukula - Aspiring Educators and Teachers Workshop earlier known as The National Science Teachers Workshop aiming at the professional development of science teachers by equipping them with innovative teaching methodologies, modern tools and strategies to effectively impart scientific knowledge to students.

Mission Start-up event offers the opportunity to Start-ups and supporting enablers like incubation centres. Start-ups in this event can showcase their products and services to the investors and associates which in turn help them grab the further opportunities under Start-up India mission and other initiatives available in the country.

Reimagining Bharat Exhibition - Transformation through New Age Technologies aims to showcase emerging technologies and prototypes/models developed by Governmental Agencies and Departments. The S&T areas targeted for this event are not limited to fundamental and applied sciences, agriculture, healthcare, space, education, strategic sectors, robotics, etc.

Sagarika – The Tale of Earth Sciences event as name suggest aims to engage and educate people on different areas of earth science such as meteorology, oceanography, ecology etc. Through this event, IISF desires to raise public awareness on environmental issues.

Science beyond Borders event is aimed at fostering international collaboration, partnerships and exchange of dialogues among scientists, researchers and institutions to address global challenges in S&T.

Vigyanika event celebrates Science Literature Festival which aims to promote science literacy and effective science communication strategies in Indian languages. The interactions done through

keynote lectures, panel discussions and scientific sessions among S&T authors, Vigyan Kavi Sammelan, Science Drama and arts, and related competitions.

Fusion Forum – The Atomic Assembly event will discuss the current perspectives, future benefits, and pressing challenges in implementing nuclear energy in India for various sectors like Generation of power, nuclear medicine, agriculture, Additive manufacturing etc.

Student - Scientist Interaction Program - Face to Face with New Frontiers in Science mediates interaction and short discussion based sessions of students/researchers with experts of various disciplines of S&T to inspire students to pursue science and research career.

National Social Organizations and Institutions Meet (NSOIM), well understand the role of social organizations promotion of S&T and thus provides them platform to discuss scientific interventions and sustainable models for societal development and nation-building.

Vision Sansad aims at bringing together key leaders like Directors, Vice Chancellors, Presidents and Senior Leaders from every possible science institution of the country where discussions can take place strategies for advancing scientific research, collaboration and policy development to address current challenges and shaping the future of Indian science in an inclusive manner.

Science Safari Science through Games and Adventures provides a platform to display science-based toys and games and also workshops are being organized to let the teachers learn the ways these toys used for teaching purposes. S&T Media Conclave will bring media personnel, journalists, communicators and general public on a platform where they can discuss the challenges and opportunities of communicating science to a wide audience, best ways of science communication and preventing misinformation, and strategies to enhance collaboration between scientific community and media.

Saga of Science Chronicles is an evening event that will tell the history and recent developments of Indian science and scientists through LED light show that will happen during 7:30 pm – 9:30 pm during each day of IISF 2024.

Science Odyssey of the North East will address the challenges that hinders the growth of science and technology in North East and discuss the ways of promotion of science and technology of North East.

The Taste of the Hills- North East Food Street will showcase the food heritage of North East and let the people eat and enjoy their traditional food items. The Food Street will remain open throughout IISF 2024. North East Symphony- North East Cultural Fest will portray North East India’s diverse traditions, customs, and arts through experience of music, dance, crafts, and traditional practices. The fest is staged during the whole duration of IISF 2024.

IISF 2024, promises to be a landmark event in promoting science and technology. With the current theme it seeks to celebrate India's scientific achievements and foster collaboration across various sectors. The event will feature diverse activities, engaging both scientific professionals and the general public. It is open for all and free so one has to attend the event to see India’s scientific achievements.

https://pib.gov.in/PressReleasePage.aspx?PRID=2078322

DECCAN HERALD

Thu, 28 Nov 2024

Autonomy from humans? Robots learn to share skills with each other independently

With the advent and rapid advancement of modern science, spearheaded by an Artificial Intelligence (AI) revolution, humanity is staring at a crossroads never seen before in the field of technology.

Landmarks have been crossed and milestones have been breached in robotics and machine learning in the past few years. With each passing year, robots are getting increasingly complex, as they are being designed to perform myriad tasks and functions.

Amid such constant buzz surrounding AI and robotics, scientists at the University of California in Berkeley, USA have come up with a ground-breaking technology. This unique and rather mind-bending technology, developed by the reaserchers, allows robots to automatically share their skills and expertise amongst different models in a completely autonomous manner - without any intervention of humans, reports Interesting Engineering.Also Read:AI robot kidnaps 12 bots from showroom in ChinaKnown as RoVi-Aug, this framework streamlines robotic training by doing away with the necessity for human involvement in the learning process of robots.

This technology (RoVi-Aug) can work instantaneously with new robots with by virtue of the ability to be trained by enhanced and updated data, which has been reaffirmed after multiple physical tests. In contrast to others, it learns multi-robot tasks, adjusts policy, and omits additional test-time procedures. This increases the effectiveness of skill transfer between the robots and increases success rates by as much as 30 per cent.

The UC Berkeley team involved in this project has revealed that this method is a big step toward creating robots that are more autonomous, independent, and adaptive.Scaling more data enhances robots' capacity to acquire dependable and broad skills, according to research. However, compared to sophisticated AI models for language and vision, robot data is much lesser. Diverse and practical real-world robot data collection is time-consuming, labor-intensive, and difficult to balance for flexible training.

To improve cross-robot learning, existing models, such as the Open-X Embodiment (OXE) project, aggregate data from 60 robot datasets. By sharing experiences, this method enhances the skills of robots.However, such technologies also come with a lot of challenges and uncertainties. The threats related to potential dangers of AI are being discussed more and more. How much autonomy is too much autonomy? Such questions cannot be ignored with rising concerns related to the rise of AI.

https://www.deccanherald.com/science/autonomy-from-humans-robots-learn-to-share-skills-with-each-other-independently-3295720

Thu, 28 Nov 2024

India's First Liquid Tree: The Algae That Breathes Life Into Our Cities

India's first Liquid Tree has been installed in Noida. The innovative creation combines nature and technology to tackle two pressing challenges—air pollution and carbon emissions—by mimicking the role of mature trees.This installation, a collaborative effort between DS Group and climate-tech startup Liquid Trees, uses a photo-bioreactor filled with 1,600 liters of microalgae solution to clean the air and produce oxygen.

What is a Liquid Tree?

The Liquid Tree, often referred to as a "tree in liquid form," is a transparent cubical structure containing a green, algae-based solution. The microalgae inside absorb carbon dioxide and release oxygen through photosynthesis, much like traditional trees.However, unlike a regular tree, which can take years to mature, microalgae get to work within weeks. This makes the Liquid Tree an ideal solution for urban environments where space constraints make large-scale tree planting difficult.

Why Microalgae?

Microalgae, the first oxygen-producing organisms on Earth, are uniquely suited for the job. According to Abhinav Palaparthy, spokesperson for Liquid Trees India, these microorganisms are "the original trees of the planet," capable of delivering quick results in pollution-heavy areas.

Here's what makes microalgae remarkable:

- Each Liquid Tree captures the equivalent carbon dioxide of six mature trees.
- Unlike traditional trees, which need years to grow, these installations are ready in weeks.
- Compact and easy to install, they fit well in congested cities.

How It Works

The installation at Noida is more than just a functional structure—it's also a symbol of the urgent need for environmental solutions. The Liquid Tree not only reduces harmful particulate matter but also produces oxygen and supports a circular economy by using harvested algae as plant fertilizer.Rajiv Kumar, Vice Chairman of DS Group, explained, "This is a step toward addressing the dual crises of climate change and poor air quality. It serves as both a practical tool and a visual reminder of the importance of green innovation."

Pollution Problem

With major cities like Delhi and Noida battling severe air pollution, solutions like the Liquid Tree could offer much-needed relief. Traditional tree planting often faces challenges in densely packed urban areas, but Liquid Trees provide a faster and more space-efficient alternative.Imagine these installations in key locations like traffic junctions, shopping malls, or public parks. They could clean the air and raise awareness about environmental action simultaneously.

What's Next?

The Liquid Tree in Noida is the first of its kind in India, but its creators are optimistic about scaling the technology. If widely adopted, these structures could transform urban landscapes, offering cleaner air and a greener environment.

https://www.news9live.com/science/indias-first-liquid-tree-noida-pollution-solution-2761560