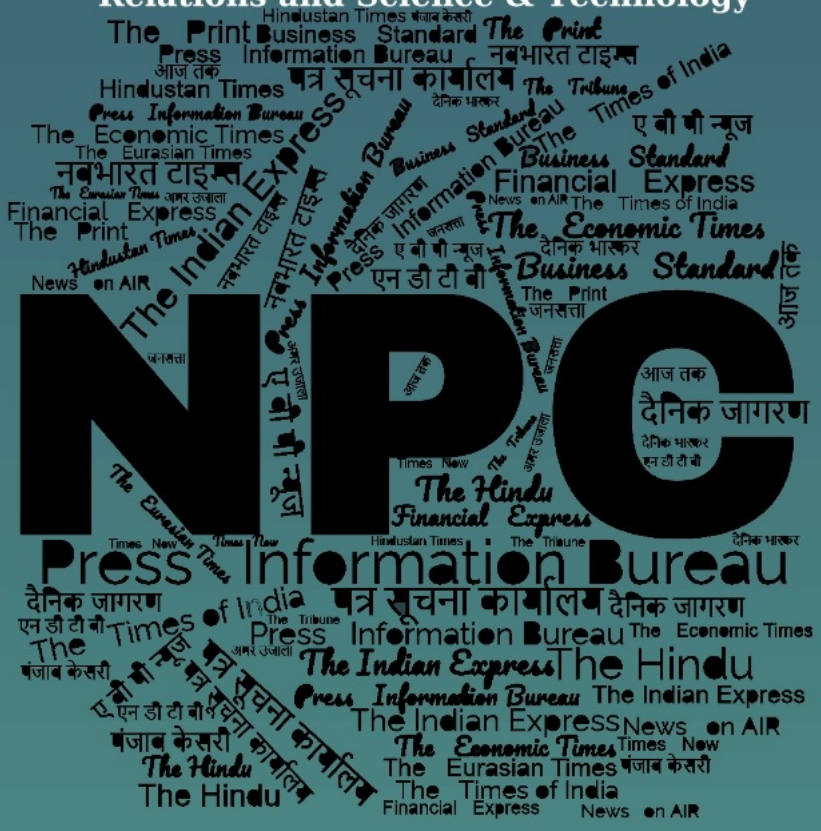
दिसंबर
Dec
2024

खंड/Vol. : 49 अंक/Issue : 232
17/12/2024

समाचार पत्रों से 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

A Daily service to keep DRDO Fraternity abreast with DRDO Technologies, Defence Technologies, Defence Policies, International Relations and Science & Technology



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

CONTENTS

Defence News

Defence Strategic: National/International

Press Information Bureau
Government of India

Ministry of Defence

Mon, 16 Dec 2024

Sri Lanka–India Exercise - 24 (SLINEX-24)

The bilateral naval exercise SLINEX 2024 (Sri Lanka–India Exercise) will be conducted from 17 to 20 Dec 24 at Visakhapatnam under the aegis of the Eastern Naval Command. The exercise will be held in two phases - the Harbour Phase from 17 to 18 December and the Sea Phase from 19 to 20 December. Initiated in 2005, SLINEX is a significant series of bilateral naval exercises that have strengthened maritime cooperation between India and Sri Lanka over the years.

Participating Units:

From India: Indian Naval Ship INS Sumitra, a Naval Offshore Patrol Vessel of the Eastern Fleet, along with a Special Forces team.

From Sri Lanka: SLNS Sayura, an Offshore Patrol Vessel, with an embarked Special Forces team.

The inaugural ceremony of the exercise is scheduled on 17 Dec 24, marking the beginning of the Harbour Phase. During this phase, participants will engage in professional and social exchanges to strengthen mutual understanding. The Sea Phase, commencing on 19 December, will feature joint exercises, including Special Forces operations, gun firings, communication drills, seamanship practices, navigation evolutions, and helicopter operations.

Over the years, SLINEX has expanded in scope, enabling both navies to enhance interoperability and share best practices. The 2024 edition aims to further reinforce the strong maritime ties between India and Sri Lanka while promoting a safe, secure, and rules-based maritime environment.

https://pib.gov.in/PressReleasePage.aspx?PRID=2084913

Press Information Bureau
Government of India

Ministry of Defence

Mon, 16 Dec 2024

Steel Cutting Of First Next Generation Missile Vessel (NGMV) For Indian Navy At Cochin Shipyard Limited, Kochi

'Steel Cutting' ceremony of the first ship of Next Generation Missile Vessel (NGMV), was held at Cochin Shipyard Limited (CSL) on 16 Dec 24, Kochi in the presence of Cmde S Parthiban, Warship Production Superintendent, Kochi. Contract for construction of six NGMVs was concluded with CSL in March 2023 with induction of the ships in the Indian Navy planned from 2027 onwards.

The NGMVs are planned to be installed with state-of-the-art weapon and sensors, which would significantly enhance the combat capabilities of the Indian Navy as a Future Ready and Combat Ready Force. The construction of the ships reinforces India's commitment to build a strong and modern Navy, capable of operating in the complex maritime environment of the Indian Ocean Region.

The ships are envisaged as high-speed vessels with a formidable array of weapon and sensors including Surface to Surface Missile System, Anti-Missile Defence Systems, Air Surveillance and Fire Control Radars. All the major role defining equipment have been indigenously developed and manufactured, underscoring the Nation's prowess and are in consonance with GoI initiative of an 'Aatmanirbhar Bharat'.

https://pib.gov.in/PressReleasePage.aspx?PRID=2084901

Press Information Bureau
Government of India

Ministry of Defence

Mon, 16 Dec 2024

CENJOW collaborates with Military College of Material Management to strengthen research on quality assurance, control, user trials of munitions for Indian Army

In a positive step bolstering indigenisation capabilities, the Centre for Joint Warfare Studies (CENJOWS), the tri-services think tank under HQ Integrated Defence Staff, Ministry of Defence

signed a Memorandum of Understanding (MoU) with the Military College of Material Management (MCMM), an Indian Army training establishment located at Sita Pahari, Jabalpur. The inking of the MoU will lead to the establishment of the 'MCMM Chair of Excellence' at CENJOWS, streamlining research on establishing standardised protocols and processes for quality assurance, control, user trials of munitions for Indian Army. The MoU was signed by Lt Gen Sanjay Sethi, Commandant MCMM and Maj Gen (Dr) Ashok Kumar, DG CENJOWS in New Delhi in the presence of Lt Gen JP Mathew, Chief of Integrated Defence Staff.

Speaking on the occasion, Maj Gen (Dr) Ashok Kumar emphasised the significance of leveraging research to infuse development for policy-oriented recommendations that would establish grounds for standardisation for the tri-services. Lt Gen Sanjay Sethi, highlighted a shared vision for both the institutions to generate synergies for a self-reliant India.

Key Areas of Collaboration:

- **Collaborative Research:** The study will focus on developing comprehensive QA/QC protocols, enhancing procurement and contracting frameworks, establishing standardised methodologies to streamline assistance and creating inspection, proof, and certification standards specific to the Indian Army.
- **Capacity Building:** The MCMM and CENJOWS will organise workshops, seminars and discussions for various stakeholders to provide momentum for fostering indigenisation.
- **Knowledge Creation:** The study will document the efforts fostering indigenisation and Aatmanirbharta, while meeting tri-services requirements.

https://pib.gov.in/PressReleasePage.aspx?PRID=2084893

Press Information Bureau
Government of India

Ministry of Railways

Mon, 16 Dec 2024

Gati Shakti Vishwavidyalaya and Indian Navy sign MoU for Logistics related Education, Research and Training

MoU Signed to Enhance Logistics Expertise, Executive Trainings and Support National Development Plans

The Partnership Will be a Major Stride Towards Atmanirbhar Bharat And Enhancing Operational Efficiency

Indian Navy Leverages Gati Shakti Vishwavidyalaya Expertise for Cutting-Edge Logistics Solutions

Gati Shakti Vishwavidyalaya, Vadodara has signed a Memorandum of Understanding (MoU) with the Indian Navy in New Delhi today. The MoU aims at enhancing logistics-related education, research, and training for the Indian Navy.

The agreement, signed by Vice Admiral Deepak Kapoor (Controller of Logistics, Indian Navy) and Prof. Manoj Choudhary (Vice-Chancellor, Gati Shakti Vishwavidyalaya), represents a major milestone in bolstering India Navy’s logistics capabilities and operational efficiency.

The collaboration is set to strengthen the Indian Navy's logistical framework by focusing on supply chain management, multimodal transportation, and sustainability in logistics. It also aligns with national development initiatives such as the PM Gati Shakti National Master Plan 2021 and the National Logistics Policy 2022.

The MoU facilitates the exchange of expertise and case studies in areas such as AI applications, predictive analytics, and blockchain technology to elevate logistics practices. A specified number of Indian Navy officers will also have the opportunity to pursue academic degrees at Gati Shakti Vishwavidyalaya (GSV), alongside management development programs designed exclusively for them.

Building on its existing partnerships with the Indian Army and Indian Air Force, Gati Shakti Vishwavidyalaya now caters to the education and research needs of all three defence services. The university's central focus on transportation and logistics places it at the forefront of skill development and innovation in this critical sector.

Vice Admiral Deepak Kapoor emphasized that this collaboration would empower the Navy with advanced logistics capabilities and practical insights, while Gati Shakti Vishwavidyalaya benefits from the Navy’s operational expertise. Prof. Manoj Choudhary highlighted the role of efficient logistics in mobilizing forces quickly and underscored the university's commitment to fulfilling its national mandate through innovation and collaboration.

Gati Shakti Vishwavidyalaya, established in 2022 as a central university under the Ministry of Railways, is dedicated to creating world-class talent in the logistics and transportation sectors. With Shri Ashwini Vaishnaw, Union Minister for Railways, Information & Broadcasting, and Electronics & IT, as its first Chancellor, the institution continues to lead the way in addressing India's logistics challenges.

Rear Admiral Rajat Kapoor and senior officials from the Ministry of Railways, Indian Navy, and Gati Shakti Vishwavidyalaya were present at the signing ceremony, marking a significant step forward in advancing India’s defence and logistics capabilities.

https://pib.gov.in/PressReleasePage.aspx?PRID=2084954

Mon, 16 Dec 2024

Exercise Himshakti: माइनस 35 डिग्री तापमान में सेना ने दिखाई आर्टिलरी की ताकत

भारतीय सेना (Indian Army) के फायर एंड फ्यूरी कॉर्प्स (Fire And Fury Corps) ने हिमशक्ति युद्धाभ्यास में अपनी फायरपावर का प्रदर्शन किया. जिसमें चीन से सटी लाइन ऑफ एक्चुअल कंट्रोल पर आर्टिलरी फायरिंग की गई. 14500 फीट की ऊंचाई पर जहां ऑक्सीजन कम हो जाता है, वहां सैनिकों की ताकत हिमालय से भी ज्यादा होती है. तापमान भले ही माइनस 35 डिग्री हो लेकिन हौसला 100 फीसदी प्लस रहता है.

दुरूह परिस्थितियों में भी हमारे गनर्स ने अभ्यास के दौरान बेइंतहा दम, जज्बे और प्रोफेशनलिज्म को दिखाया. ये एक्सरसाइज उस समय की जा रही है, जब कुछ समय पहले ही भारत और चीन ने देपसांग के मैदानों और डेमचोक में डिसइंगेजमेंट एग्रीमेंट किए. इन इलाकों में बहुत समय से संघर्ष होता आ रहा था. जो अब रुक गया है.

इन दोनों इलाकों में पेट्रोलिंग शुरू हो चुकी है. दोनों देशों ने अपने सैनिकों को कम किया है. साथ ही सैन्य ढांचों को भी हटाया है. हिमशक्ति अभ्यास में फायर एंड फ्यूरी कॉर्प्स ने अपने तोपों से हिमालय की चोटियों पर निशाना साधकर बता दिया कि कारगिल जैसी जंग हो या छिपे हुए दुश्मन. किसी को भी हमारे बारूदी गोले छोड़ेंगे नहीं.

साथ ही यह भी दिखाया गया कि हमारी सेना कितनी फ्यूचर रेडी है. किसी भी समय जंग के लिए एकदम तैयार है. ये ड्रिल इसलिए भी महत्वपूर्ण हैं क्योंकि जल्द ही राष्ट्रीय सुरक्षा सलाहकार अजित डोभाल चीन में महत्वपूर्ण स्पेशल रिप्रेजेंटेटिव लेवल मीटिंग्स के लिए जा रहे हैं. वो वहां चीन के विदेश मंत्री वांग यी से मिलेंगे.

डोभाल यी के साथ सीमा के संबंध में भी चर्चा करेंगे. गलवान में झड़प के बाद पहली बार स्पेशल रिप्रेंजेटेटिव लेवल मीटिंग हो रही है. फायर एंड फ्यूरी कॉर्प्स को टॉप गन गनर्स कहा जाता है. उन्होंने जो फायर पावर दिखाई है, उससे पता चलता है कि सर्दी के इस खतरनाक मौसम में भी वो हिमालय की गर्मी बढ़ा सकते हैं.

https://www.aajtak.in/defence-news/story/indian-army-demonstration-of-firepower-rptc-2122378-2024-12-16

THE TIMES OF INDIA

Mon, 16 Dec 2024

US Warship Docks in Cambodia amid China Naval Base Concerns

A US warship docked in Cambodia on Monday, just kilometres away from a Chinese-renovated naval base, in the first American military port call to one of Beijing's closest regional allies in eight

years.Washington's relationship with Phnom Penh has been deteriorating for years, with China pouring billions of dollars into infrastructure investment under Cambodia's former leader Hun Sen.

AFP reporters saw Cambodian navy personnel welcoming the USS Savannah's arrival to the southern port city of Sihanoukville on Monday.

The ship's commanding officer Daniel A Sledz said "it is great to be back, returning US presence here after eight years", adding that his crew were "very pleased" to be hosted by Cambodia.

The US embassy posted a statement on social media on Monday saying the combat ship is on a "goodwill visit" that aims to "boost US-Cambodia coordination and response to shared maritime security challenges".

Cambodia's defence ministry said on Friday that the five-day visit aims to "strengthen and expand friendship" and "promote bilateral cooperation".

Since 2022, China has been funding the renovation of the Ream naval base, some 30 kilometres (20 miles) from Sihanoukville, which was originally built partly using US funds.

Washington has said the Ream base could give Beijing a key strategic position in the Gulf of Thailand near the disputed South China Sea, which China claims almost in its entirety.

Cambodian leaders have repeatedly denied that the base is for use by any foreign power.

Chinese warships first docked at the 363-metre (1,190-foot) pier in December last year. Two berthed at Sihanoukville port in May as part of Beijing's biggest joint military drills with Cambodia.

The Chinese military unveiled machine gun-equipped "robodogs" this year at the annual joint exercises, known as the "Golden Dragon" drills.

In early 2017, Cambodia scrapped similar joint exercises with US forces that had been held for the previous seven years.

Cambodia's defence ministry said 27 US navy vessels have visited the nation since 2007, although the USS Savannah's visit with 103 crew members was the first docking in eight years.

The ship's senior officers will meet with the Ream base's commander.On Monday, Beijing responded to the US warship's visit to Sihanoukville saying "such exchanges and collaborations in security and defence should contribute to promoting regional peace and stability, rather than the opposite."

US defense secretary Lloyd Austin visited Cambodia in June to reset ties with the staunch China ally.

Cambodia's foreign minister Prak Sokhonn and the US embassy's Bridgette Walker last week hailed the "reinvigoration" of military ties between the two countries.

https://timesofindia.indiatimes.com/world/rest-of-world/us-warship-docks-in-cambodia-amid-china-naval-base-concerns/articleshow/116363872.cms

THE ECONOMIC TIMES

Mon, 16 Dec 2024

India and Sri Lanka to finalise defence cooperation agreement, strengthen security ties: PM Modi

Prime Minister Narendra Modi has said that India and Sri Lanka has decided to soon conclude defence cooperation agreement. He said that both nations have decided to have cooperation on hydrography.In his joint statement with Sri Lankan President Anura Kumara Dissanayake, PM Modi said that both nations believe that Colombo Security Conclave is an important platform for regional peace, security and development.

He said, "We completely agree that our security interests are interlinked. We have decided to conclude the defence cooperation agreement soon. Cooperation on hydrography has also been agreed upon. We believe that the Colombo Security Conclave is an important platform for regional peace, security and development. Under this, cooperation will be enhanced on topics like maritime security, counter-terrorism, cyber-security, fight against smuggling and organised crime, humanitarian assistance and disaster relief."

Highlighting people-to-people ties between India and Sri Lanka, PM Modi said, "The people-to-people relations between India and Sri Lanka are linked to our civilisations. When Pali language was given the status of "Classical Language" in India, it was celebrated in Sri Lanka too."

He welcomed Sri Lankan President to India and expressed happiness that he chose New Delhi for his first foreign visit after assuming office. PM Modi announced that the two nations have adopted a futuristic vision.

Welcoming Sri Lankan President to India, PM Modi said, "I welcome President Dissanayake to India. We are happy that you (Anura Kumara Dissanayake) chose India as his first foreign visit. This visit will bring a new speed and energy to the ties. For our partnership, we have adopted a futuristic vision."

Speaking about economic cooperation, he said, "In our economic cooperation, we have laid emphasis on investment-led growth and connectivity. We have decided that physical, digital and energy connectivity will be important pillars of our partnership. Work will be done for establishing electricity grid connectivity and multi petroleum pipeline. Pace will be given to Sampur Solar Power Plant. LNG will be supplied for Sri Lankan Power plants. To boost bilateral trade, both sides will try to conclude the Ekta soon."

PM Narendra Modi said that India has so far provided 5 billion dollars in line of credit and grant assistance to Sri Lanka and added that the cooperation has reached all 25 districts of Sri Lanka."

India has so far provided 5 billion dollars in line of credit and grant assistance to Sri Lanka. We have cooperation in all 25 districts of Sri Lanka and the selection of our projects is always based on the development priorities of the partner countries. Taking our development cooperation

forward, we have decided that grant assistance will be given for the rehabilitation of the signalling system of the Maho-Anuradhapura railway section and Kankesanthurai Port," he said.

Announcing monthly scholarship for 200 students in the universities of Jaffna and Eastern province from next year, PM Modi said, "Under education cooperation, from next year, monthly scholarships will be given to 200 students in the universities of Jaffna and Eastern Province. In the next 5 years, 1500 civil servants of Sri Lanka will be trained in India. Along with housing, renewable energy and infrastructure, India will also cooperate for the development of agriculture, dairy and fisheries in Sri Lanka. India will also participate in the unique digital identity project in Sri Lanka."

The two leaders made the joint statement after holding talks in the Hyderabad House in Delhi. The two leaders warmly greeted each other and were engaged in talks as they proceeded to hold the meeting.

The Sri Lankan President is on a three-day state visit to India from December 15 to December 17. This is the first bilateral visit of Dissanayake to India after assuming office in September.

https://economictimes.indiatimes.com/news/defence/india-and-sri-lanka-to-finalise-defence-cooperation-agreement-strengthen-security-ties-pm-modi/articleshow/116363896.cms

THE ECONOMIC TIMES

Mon, 16 Dec 2024

India-China NSAs to take Ladakh talks forward

The special representatives of India and China will meet in Beijing this week, with national security adviser Ajit Doval travelling to the Chinese capital on Tuesday-Wednesday, in what would be the first meeting between NSAs under the SR mechanism after a hiatus of four years.

NSA Doval's China visit is expected to be followed by external affairs minister S Jaishankar and foreign secretary Vikram Misri's trip to Washington DC later this month, to engage with the team of President-elect Donald Trump ahead of the inauguration, it has been learnt.

The SR meeting in Beijing will be followed by a foreign secretary-deputy minister level meeting to fine-tune the way forward in the relationship after the disengagement along the border in Ladakh.Last week, Jaishankar informed Parliament that the Indian military would be going to all patrolling points of Depsang in Ladakh and to the eastward limit which have historically been India's patrolling limit.

The SR-level meeting will focus on de-escalation and the larger boundary question besides various aspects of geopolitics. The SR mechanism was set up when Atal Bihari Vajpayee was the prime minister and was aimed at addressing the boundary dispute.

The 32nd meeting of the Working Mechanism for Consultation & Coordination on India-China Border Affairs (WMCC) was held here earlier this month to prepare for the next edition of the SR mechanism meeting.

The two sides positively affirmed the implementation of the most recent disengagement agreement, which completed the resolution of the issues that emerged in 2020, officials said. This was the first WMCC meeting since the border agreement and the Kazan meeting.

The NSAs last met in St Petersburg this year on the sidelines of the BRICS NSA meet. But that was not in the SR mechanism format.

https://economictimes.indiatimes.com/news/defence/india-china-nsas-to-take-ladakh-talks-forward/articleshow/116375322.cms

THE WEEK

Mon, 16 Dec 2024

China's plan to cripple US Navy's CEC network revealed: PLA report shows weak links in the high-tech US system

The electronic warfare unit of China's People's Liberation Army (PLA) has come out with a list of targets for a possible coordinated attack on the US aircraft carrier strike groups, in the event of a conflict. The US military radars, sensors, and communication systems may come under fire from the electronic warfare weapons of China.

According to media reports, this was revealed in the latest issue of the magazine *Defence Industry Conversion in China*, supervised by the State Administration of Science, Technology and Industry for National Defence.

"This information can provide references for the development of electronic countermeasures technology and related equipment in China's future naval battlefields," an electronic countermeasures expert with the PLA wrote in the report, according to *South China Morning Post*.

The report looked into the US Navy's Cooperative Engagement Capability (CEC) system. According to the US Navy, the CEC is a real-time sensor netting system that enables high-quality situational awareness and integrated fire control capability. It is designed to enhance the anti-air warfare capability of US Navy ships, US Navy aircraft, and US Marine Corps Composite Tracking Network units by the netting of geographically dispersed sensors to provide a single integrated air picture.

"It is formed through the networking of phased array radars, which relies on wireless communication links. When the opposing force employs electronic interference, the wireless links are prone to disconnection or disruption," the report in the magazine read.

Platforms such as drones can move near the radar and create a sense of false targets, majorly reducing the detection accuracy and effectiveness of the CEC system.

The other targets identified by the PLA include E-2C Hawkeye early warning aircraft and US military signal transponders which could be exploited to gain access to the military network of the US.

The CEC networks could be manipulated by mimicking a friendly response with the correct signaling method. Besides, continuous access requests can be made to overwhelm one of the CEC nodes with identification tasks, disrupting its operation, the report noted.

https://www.theweek.in/news/defence/2024/12/16/chinas-plan-to-cripple-us-navys-cec-network-revealed-pla-report-shows-weak-links-in-the-high-tech-us-system.html

Mon, 16 Dec 2024

How INS Nirdeshak, to be commissioned soon, is set to enhance maritime dominance of Indian Navy in Indian Ocean Region

The Indian Navy will, on Wednesday, commission its latest survey ship, INS Nirdeshak, designed to conduct hydrographic surveys, help in navigation, and support maritime operations.

'Nirdeshak', the second ship of the Survey Vessel (Large) Project, is a testament to India's increased focus towards self-reliance in defence as it has over 80 per cent indigenous content.

The ship, built at GRSE Kolkata, with a displacement of approximately 3,800 tonnes, is powered by two diesel engines and is equipped with state-of-the-art hydrographic and oceanographic survey equipment.

It represents the reincarnation of the erstwhile 'Nirdeshak', which served the Indian Navy with distinction for 32 years until its decommissioning on December 19, 2014, a defence ministry spokesperson said.

"With an endurance of over 25 days at sea and a top speed exceeding 18 knots, INS Nirdeshak is set to enhance India's maritime capabilities. It will play a pivotal role in mapping the nation's waters and strengthening India's strategic presence in the Indian Ocean Region through its foreign cooperation surveys."

The Navy also unveiled the crest of the INS Nirdeshak—'the Pathfinder of the Seas'—which symbolises the virtues of India's maritime sovereignty and technological prowess.

At its heart, lies the proud symbol of India's territorial integrity serving as the backdrop to a hydrographic survey ship cutting through waves, harnessing the advanced satellite-based navigation and communication systems, and state-of-the-art sub-surface sensors to chart the underwater terrain with precision, the Navy said.

The commissioning ceremony at Naval Dockyard, Visakhapatnam will be presided over by Minister of State for Defence Sanjay Seth. The ceremony will be hosted by the Flag Officer Commanding-in-Chief, Eastern Naval Command.

https://www.theweek.in/news/defence/2024/12/16/how-ins-nirdeshak-to-be-commissioned-soon-is-set-to-enhance-maritime-dominance-of-indian-navy-in-indian-ocean-region.html

THE HINDU

Mon, 16 Dec 2024

India aims to achieve 100% indigenous Naval platforms: ENC chief

The second 'Regional Defence MSME Conclave' was held here on Monday, December 16. It was organised by the Society of Indian Defence Manufacturers (SIDM) and the Confederation of Indian Industry (CII) in partnership with the Department of Defence Production, Union Ministry of Defence.

Eastern Naval Command (ENC) Flag Officer Commanding-in-Chief Vice-Admiral Rajesh Pendharkar, during this keynote address, emphasised India's ambition to achieve 100% indigenous naval platforms, reflecting the nation's commitment to self-reliance in defence.

Achieving this vision requires fostering a culture of innovation, enhancing Research & Development (R&D), and embracing emerging technologies like AI, IoT, robotics, and additive manufacturing, he said. He added that collaboration among Micro, Small and Medium Enterprises (MSMEs), academia, and large defence manufacturers will be pivotal in this journey.

APIIC Vice-Chairman and Managing Director and AP State Industries Director M. Abhishikth Kishore spoke about the initiatives of the State Government to build an industry ecosystem such as the Special Industry Cluster.Hindustan Shipyard Ltd. Chairman and Managing Director Commodore Hemant Khatri said that the shipbuilding industry needs skilled professionals to ensure that vessels meet global standards.

Founded in 2017 under the aegis of CII, the SIDM represents over 700 defence manufacturers, promoting policy advocacy, capacity building, and international cooperation. The conclave was the first of its kind to be held in Visakhapatnam, bringing together over 200 participants from MSMEs, officials from the Indian Navy and other key stakeholders to discuss the roadmap for expanding MSME participation in India's defence ecosystem.

Representatives from Hindustan Aeronautics Ltd., L&T, Bharat Dynamics Ltd., Hindustan Shipyard Ltd, Ship Building Centre, Naval Dockyard, SIDBI and GeM engaged in fruitful meetings with regional MSMEs, paving the way for stronger supply chain integration.

A Tech Expo showcased cutting-edge innovations in underwater systems, anti-corrosion solutions, unmanned marine technologies, and advanced surveillance systems for MSMEs to demonstrate their technological prowess to key stakeholders and potential collaborators.

https://www.thehindu.com/news/cities/Visakhapatnam/india-aims-to-achieve-100-indigenous-naval-platforms-enc-chief/article68992753.ece

ThePrint

Mon, 16 Dec 2024

Azerbaijan wants Indian weapons, New Delhi ignores request through friendly country

Amid its ongoing conflict with Armenia which has been buying several weapons and defence systems from India, Azerbaijan has via a third country indicated it wants to purchase weapons from New Delhi to balance the scales, ThePrint has learnt.

However, the request, which came through a very friendly country, was ignored by India. It is learnt that New Delhi has made it clear to the friendly country that India will decide its bilateral relations and priorities, and does not want any other country to be a middleman.

People familiar with the matter told ThePrint that Baku never directly broached the subject with New Delhi, neither officially nor unofficially. Instead, a third country approached India, saying that if the South Asian country wanted to export its indigenous weaponry and was looking for a long-term partner, it could look towards Azerbaijan.

People familiar with the matter told ThePrint that Azerbaijan was open to matching the current deals signed by its rival Armenia with India. Yerevan has in recent years turned to India to beef up its armed forces—amid its conflict with Azerbaijan—and purchased rocket-launchers, artillery guns, ammunition, sniper rifles, anti-tank missiles.

Armenia is looking at the possibility of procuring Astra missiles to strengthen its fleet of Sukhoi Su30 fighter aircraft, as reported by ThePrint earlier. For India, Armenia has not only been a consistent defence partner, it is also viewed as a political partner in the region and has close ties with France.

Another Indian strategic partner—Greece—may send its obsolete Russian weaponry to Armenia to help boost its defence capabilities, as a part of a potential axis with India in the region. Yerevan has also been a strong supporter of India's position on Jammu and Kashmir. India, France and Greece are all looking towards supporting Armenia's security capabilities. In comparison, Azerbaijan is perceived to be a part of a growing grouping of countries including Türkiye and Pakistan.

Since 2017, Baku, Ankara and Islamabad have been focusing on deepening trilateral cooperation. In July this year, the leaders of the three countries held a trilateral summit on the margins of the

Shanghai Cooperation Organisation (SCO) Summit in Kazakhstan, while Baku has as recently as 2023 backed Islamabad's position on Jammu and Kashmir.

Armenia and Azerbaijan have been fierce rivals since the territorial dispute in Nagorno-Karabakh. Following the dissolution of the Soviet Union in 1991, the ethnic Armenians in the region declared themselves as the "Republic of Artsakh", which received no recognition from any country in the world, including Armenia.

The two countries fought two wars over it, with Azerbaijan using loitering munitions and drones purchased from Turkey to great effect during the 2020 conflict. In September 2023, Baku, through a swift military operation, regained the territory of Nagorno-Karabakh. Economic & business ties amid geopolitical jockeying

Diplomatic ties aside, Baku remains an important tourist destination for Indians, and has received investment from India's Oil and Natural Gas Corporation (ONGC) in its oil fields and pipelines. Azerbaijan is the largest economy in the South Caucasus region, with a gross domestic product of $75.6 billion. In 2023, economic trade between Azerbaijan and India stood at $1.435 billion, which is the largest in the region for New Delhi. India is Azerbaijan's seventh largest trading partner and the third largest destination for Azeri crude oil.

Earlier this year, ONGC Videsh Limited (OVL)—the wholly owned subsidiary of ONGC—increased its stake in the Azeri-Chirag-Gunashli (ACG) oil fields and Baku-Tbilisi-Ceyhan (BTC) pipeline, buying out the stake of Norway's Equinor for $60 million. The recent purchase adds to its already existing stake of around 2.36 per cent in the ACG oil fields, first purchased by OVL in 2013 for $1 billion. Around 70 percent of OVL's parent company—ONGC—is owned by the Government of India either directly or indirectly.

In 2017, the consortium of partners in the ACG oil fields announced an extension of the production sharing agreement (PSA) with Azeri government till 2049. In comparison, trade between India and Armenia stood at $134 million in 2023, which is roughly one-tenth of the economic partnership between New Delhi and Baku during the same period.

There are currently no direct flights between India and Armenia, while there are 14 weekly flights connecting Baku with New Delhi and Mumbai. The visa regime in Azerbaijan has also made it a tourist hotspot for Indians. Between January and December 2023, roughly 1,17,000 Indians visited the country. In the first ten months of 2024, that number grew to about 2,01,000, ThePrint has learnt.

https://theprint.in/diplomacy/azerbaijan-wants-indian-weapons-new-delhi-ignores-request-through-friendly-country/2403536/

Press Information Bureau
Government of India

Ministry of Science & Technology

Mon, 16 Dec 2024

Dr. Jitendra Singh Advocates Fusion of Traditional Knowledge with Cutting-Edge Technologies which could be India's advantage over others

Minister emphasizes leveraging India’s unique heritage and modern scientific advancements to lead globally and foster sustainable development

Celebrating Five Years of SHRI: Bridging Science and Heritage for a Future-Ready India

Union Minister of State (Independent Charge) for Science and Technology; Earth Sciences and Minister of State for PMO, Department of Atomic Energy, Department of Space, Personnel, Public Grievances and Pensions, Dr. Jitendra Singh said here today fusion of traditional knowledge with modern technology could give India's advantage over others.

The Minister underscored the transformative potential of blending India’s ancient wisdom with contemporary scientific innovations while speaking at the celebration of five years of the Science and Heritage Research Initiative (SHRI).

Organized by the Department of Science and Technology, the event celebrated the strides made in preserving and modernizing India’s rich heritage. The Minister highlighted this fusion as India’s unparalleled strength in achieving Prime Minister Narendra Modi’s vision of Viksit Bharat by 2047.

Dr. Jitendra Singh lauded India’s heritage as a treasure trove of knowledge, with nearly 5 million ancient manuscripts, palm-leaf inscriptions, and thousands of historically significant monuments such as Konark, Khajuraho, and Chola temples etc. Each, he said, is a testament to India’s scientific prowess, architecture, and innovation. “No other country in the world has such an extensive and ancient repository of wisdom. This is our unique strength, and we must harness it to lead globally,” he remarked.

He pointed to key initiatives under SHRI, such as non-invasive techniques for heritage preservation, digitalizing the Ajanta caves, and artifact restoration. These efforts, he said, not only preserve India's legacy but also showcase how heritage and technology can coexist to pave the way for societal progress.

Dr. Jitendra Singh emphasized the government's commitment to synergizing traditional knowledge with cutting-edge technologies, a philosophy consistently championed by Prime Minister Modi. "India's journey in leveraging its heritage alongside modern science has seen milestones like the creation of the Ayush Ministry, Aroma Mission, and Hydrogen Mission," he said. He noted the government's work in digitalizing traditional knowledge under the Traditional Knowledge Digital Library (TKDL), making it accessible for global research while ensuring its protection from misuse.

He cited examples of successful fusion, including the Lavender Revolution through CSIR's Aroma Mission, which transformed the lives of farmers in Jammu and Kashmir, and projects like Deep Sea Mission and Hydrogen Mission that draw inspiration from India's ecological heritage. "These examples show how India's traditional wisdom complements the most advanced scientific innovations to address today's challenges," he explained.

Dr. Jitendra Singh referenced Prime Minister Modi's global initiatives, such as International Yoga Day, which has been celebrated annually since 2015 with support from 190 countries. "This global acceptance of Yoga demonstrates India's ability to translate its heritage into universal solutions, setting a precedent for other traditional knowledge systems to gain global recognition," he stated.

The Minister urged Indian scientific institutions to adopt global benchmarks and strategies to showcase India's achievements. "If we aspire to lead the world by 2047, we must not only innovate but also gain global acceptance for our work. Traditional knowledge, when scientifically validated and marketed effectively, will become India's most valuable global asset," he said.

Dr. Jitendra Singh highlighted the need to integrate scientific innovation with livelihood opportunities, particularly through traditional crafts and skills. He urged greater alignment between government schemes like the Pradhan Mantri Vishwakarma Scheme and heritage preservation efforts. This scheme, he explained, offers training, tools, and financial support for artisans, ensuring that traditional crafts not only survive but thrive as sustainable sources of income.

He also called for more collaboration between scientific institutions, startups, and private enterprises to create market-driven solutions for traditional knowledge systems. "From creating start-ups around ancient crafts to developing AI-powered heritage conservation tools, India has the potential to lead in innovation that respects its cultural roots," he said.

During the event, Dr. Jitendra Singh unveiled a series of innovative products and technologies developed under the Science and Heritage Research Initiative (SHRI), each reflecting the initiative's mission to blend traditional knowledge with modern science. Among the highlights was the launch of Kosh Shree, an encyclopaedic Sanskrit dictionary and article authoring tool powered by a crowdsourcing framework. Designed to facilitate collaborative creation of Sanskrit articles, this specialized software allows users to prepare and publish vocabularies and dictionary volumes online, promoting the preservation and accessibility of India's ancient language.

The Minister also introduced Sakshatkar, a coffee table book showcasing India's contributions to global science and technology through the ages, offering readers a captivating glimpse into the nation's scientific heritage. A structured yoga module for diabetes management was also released, providing a lifestyle approach for managing adult-onset diabetes based on India's 5,000-year-old yoga tradition. Other notable launches included the Purple Himalayas herbal infusion, a lavender and rhododendron-based antioxidant-rich tea.

Additionally, Dr. Jitendra Singh unveiled HerbaHeal Cream and HerbaHeal Gel, innovative herbal products designed for the effective management of wounds, cuts, and burns, these formulations are rooted in traditional knowledge from the Malayali tribal community of Tamil Nadu. Developed through extensive research under the DST-SHRI project, they underscore the importance of preserving ethnobotanical heritage while advancing modern healthcare solutions.These innovations underscore the program's commitment to harnessing India's legacy for sustainable, impactful solutions that benefit both domestic and global communities.

Dr. Jitendra Singh also inaugurated an exhibition showcasing innovative projects supported under SHRI, for example, an advanced electronic jacquard for handloom weaving. This cutting-edge technology, entirely developed in India, combines a robust design with user-friendly software, empowering handloom weavers to produce intricate ethnic and traditional textiles with ease while preserving the rich heritage of handloom craftsmanship.

During the event, Dr. Jitendra Singh experienced the "Tales of Ajanta – VR Experience", a transformative project that brings the timeless beauty of the Ajanta Caves to life through cutting-edge virtual reality. Developed under the Indian Heritage in Digital Spaces initiative by the Department of Science and Technology (DST), in collaboration with IITM Pravartak Technology Hub and the Archaeological Survey of India (ASI), the VR experience leverages advanced 3D scanning, modelling, and animation to digitally preserve and showcase Ajanta's intricate frescoes and sculptures. This initiative not only breaks geographical barriers but also sets a benchmark in heritage preservation by blending ancient marvels with modern technology, paving the way for similar projects like the upcoming VR recreation of Ellora Caves.

As India moves toward its centenary as an independent nation in 2047, the Minister's vision calls for a renewed focus on aligning heritage with innovation, creating sustainable development opportunities, and positioning India as a leader in the global knowledge economy. "The road to Viksit Bharat is paved with both our ancient wisdom and the futuristic technologies we develop today," Dr. Jitendra Singh concluded.

The event witnessed the participation of Prof. Abhay Karandikar, Secretary, Department of Science and Technology (DST); Sri Vaidya Rajesh Kotecha, Secretary, Ministry of AYUSH; Dr. Ravichandran, Secretary, Ministry of Earth Sciences; and other eminent dignitaries, highlighting the collaborative efforts across ministries to promote science, heritage, and innovation.

https://pib.gov.in/PressReleasePage.aspx?PRID=2084921

THE HINDU

Mon, 16 Dec 2024

BITS-Pilani Hyd researchers develop portable sensor to detect triglyceride levels in minutes

Researchers at MEMS, Microfluidics and Nanoelectronics (MMNE) Lab, BITS Pilani, Hyderabad campus, have announced the development of an innovative electrochemical biosensor for the rapid and cheaper detection of triglycerides (TGs), a crucial marker for heart disease risk assessment, on Monday.

The device aims to transform point-of-care diagnostics by providing faster and more accessible TG level testing, which is linked to increased risks of heart attack, stroke, and atherosclerosis, said stated principal investigator R.N. Ponnalagu.

It also offers promising potential for on-site TG monitoring, significantly enhancing heart disease management and preventive care worldwide, he said. The biosensor utilises screen-printed carbon electrodes made from commercially available overhead projector sheets.

It incorporates gold-cerium oxide nanoparticles to enhance sensitivity and speed up enzymatic reactions. Lipase, a digestive enzyme that breaks down fats in food for absorption in the intestines, is immobilised on the electrodes to speed up reactions with TG, producing an electrical current that is proportional to the concentration of Tgs.

A standard test electrode is typically priced at approximately ₹10, providing an accessible option for effective health monitoring compared to commercially available one which cost around ₹300 to ₹500, Dr. Ponnalagu said. The device is suitable for real-time monitoring without sample pre-treatment and a portable read-out device, called ‘potentiostat’, adds to its practicality in various healthcare settings, according to research scholar Parvathy Nair.

“This platform could greatly assist in the rapid detection of TriGlyceride levels, and we are actively expanding its capabilities for multiplexed biomarker detection,” informed co-principal investigator Sanket Goel.

“Our biosensor features advanced materials in a portable design, making it a game-changer for real-time TriGlyceride monitoring in point-of-care settings,” he said.

Prof. Goel said the research team is working to developing a turnkey prototype and planning to commercialise it through their start-up, Pyrome Innovation. The work is expected to be presented at the 2025 IEEE Applied Sensing Conference, scheduled to be held in Hyderabad in January 2025. The work was supported by Semiconductor Research Corporation, USA.

The work was also published in the peer-reviewed journal IEEE Sensors Letters, in its December 2024 issue.

https://www.thehindu.com/sci-tech/science/bits-pilani-hyd-researchers-develop-portable-sensor-to-detect-triglyceride-levels-in-minutes/article68991136.ece

Mon, 16 Dec 2024

Indian Radio Telescope helps unravel mystery of Scallop-shell stars

Over 70 percent of the stars in the Milky Way are M-dwarf stars, cooler and dimmer than the Sun. About 50 of these stars are partially enveloped by mysterious blobs of matter, and are known as scallop-shell stars, or complex periodic variables. This material could be gas, dust or dense plasma, and co-rotate with the star a few stellar radii from the surface. Astronomers do not fully understand their nature, and whether the material originates from the star itself or the debris disc of leftover material from the birth of the star. The Giant Metrewave Radio Telescope (GMRT) close to Pune has now shed light on the mystery by observing a scallop-shell star born 25 million years ago, designated as 2MASS J05082729−2101444.

The study was supported by observations by NASA's Transiting Exoplanet Survey Satellite (TESS) and the Las Cumbres Global Telescope Observatory. A paper describing the research has been published in Astronomy & Astrophysics Letters. While what make up the shells remains a mystery, the researchers were able to detect a polarisation reversal as well as auroral emissions. First author of the paper, Simranpreet Kaur says, "We believe that we are witnessing the presence of two mechanisms in both observations: one is more or less persistent, and is probably what we call 'gyro-synchrotron' emission, caused by mildly relativistic particles spiraling around the magnetic field lines. The second one, that we call 'electron cyclotron maser', has been directly seen in the Jupiter-Io system and consists of sporadic emission of intense, highly polarized electromagnetic waves directed along collimated beams."

More science to followThe researchers are working through additional observations captured by the GMRT in 2024, and have access to additional instruments for 2025. The researchers hope to unravel the mysteries of scallop-shell stars by carefully examining the light curves in radio and optical frequencies, or the degree and timing of the dimming, to better understand the mechanisms driving them. The astronomers have been able to rule out that the optical dips are caused by starspots or transiting exoplanets. Humans can expect to understand these dim stars and the mysterious material that surrounds them as more powerful radio telescopes start operating around the world.

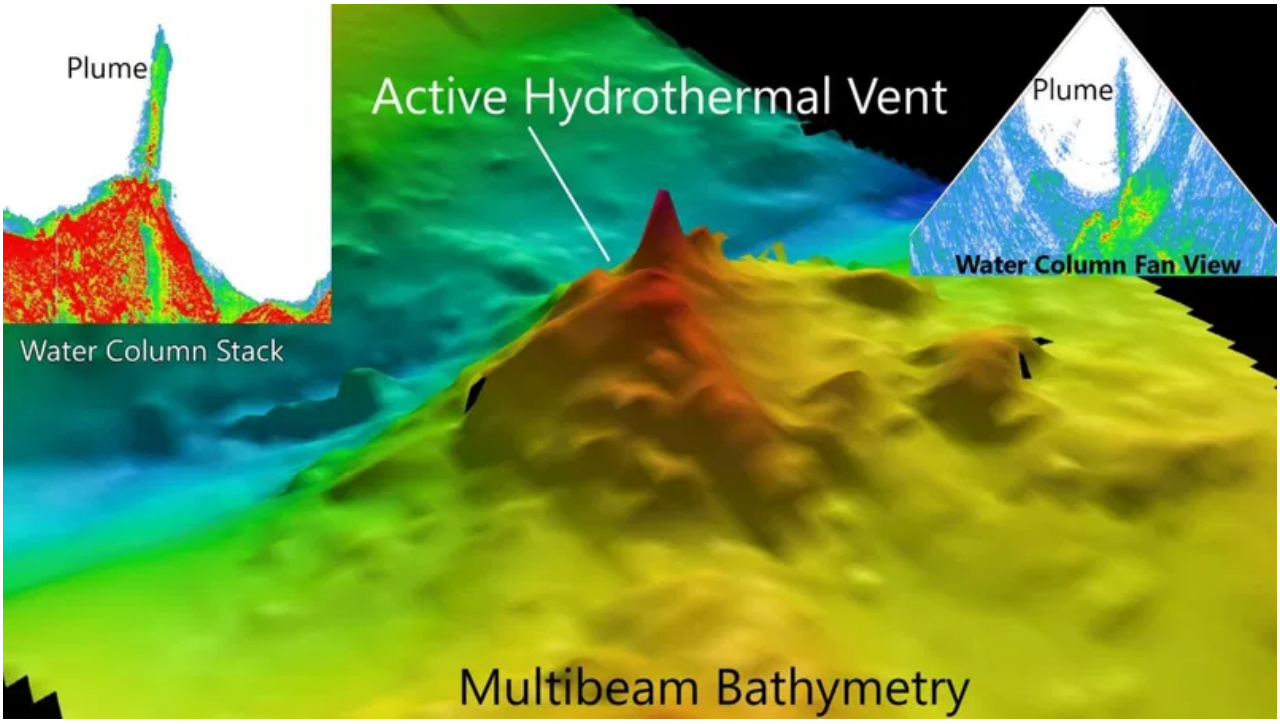
https://www.news9live.com/science/indian-radio-telescope-helps-unravel-mystery-of-scallop-shell-stars-2774798

Mon, 16 Dec 2024

Indian scientists explore active hydrothermal vents with deep sea drone

Scientists from the National Institute of Ocean Technology (NIOT) and National Centre for Polar and Ocean Research (NCPOR) have explored the Southern and Central Indian Ridges with the Ocean Mineral Explorer (OMe) 6000, an Autonomous Underwater Vehicle (AUV). This is the first time that the hydrothermal vents in these regions have been explored, with the drone descending to depths of 4,500 metres. Hydrothermal vents are extreme environments hosting primitive ecosystems that contain organisms that may resemble the earliest forms of life to emerge on Earth, as well as the organisms that may exist on ice moons in the Solar System and distant exoplanets.

The OMe 6000 is equipped with scientific payloads as well as high resolution cameras, and has been used to previously conduct minerological and biological surveys in the Indian Ocean. In the December 2022 expedition of the Sagar Nidhi, the OMe 6000 explored the Central Indian Ocean Basin (CIOB), and operated at an even greater depth of 5,271 metres. The drone was able to measure the abundance of polymetallic manganese nodule, a resource that can potentially be mined, and mapped the distribution of deep sea biodiversity. The exploration of the OMe 6000 is part of the Deep Ocean Mission launched in 2021 by the Ministry of Earth Sciences as a Central Sector Scheme.



Deep Ocean Mission, Samudrayaan and Deep Sea Mining

The exploration of the OMe 6000 acts as a pathfinding programme to identify resource potential of sites, and those that require further exploration with crewed craft. Hydrothermal vents can potentially be viable sources of multimetal hydrothermal sulfides. Several new biological species can also be found at these sites. The OMe 6000 discovered an acorn worm at a depth of 5,200 metres for example. Under the Deep Ocean Mission, the Samudrayaan mission is aimed at developing a self-propelled submersible named Matsya 6000, capable of carrying a crew of three humans to a depth of 6,000 metres, to explore the deep sea.

https://www.news9live.com/science/indian-scientists-explore-active-hydrothermal-vents-with-deep-sea-drone-2774695