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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

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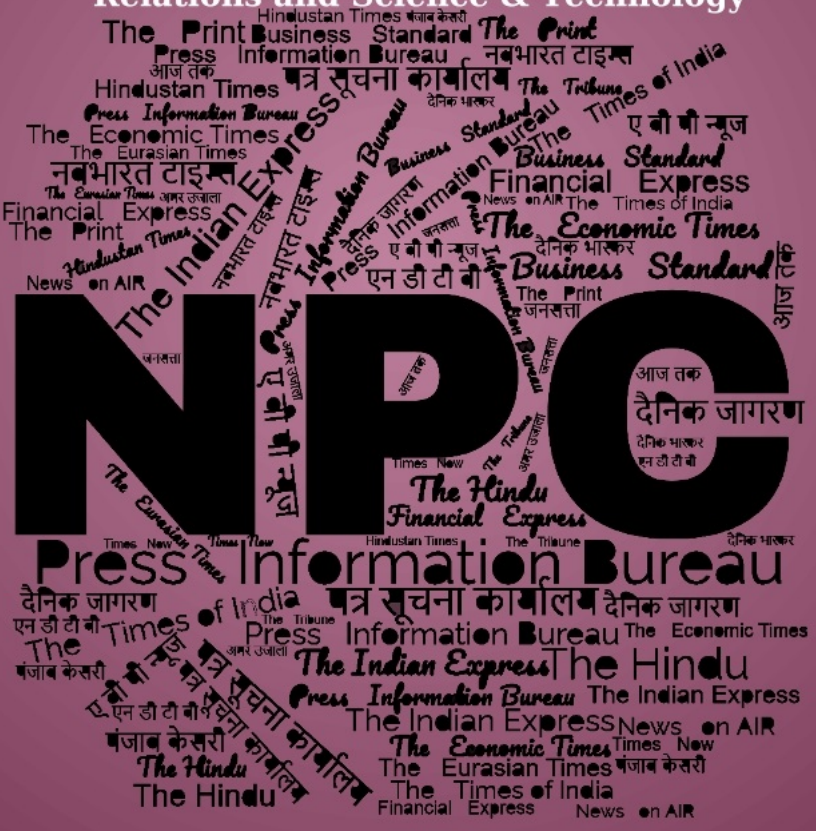

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CONTENTS

DRDO News

THE TIMES OF INDIA

Tue, 01 Oct 2024

Indian Army gets delivery of 1st indigenous submachine gun

Lokesh Machines Limited has successfully delivered the first major order for its 9x19 mm submachine gun (SMG) Asmi, which is India's first sub-machine gun to be developed indigenously by the private sector, to the Northern Command of the Indian Army.

The order for 550 SMGs to the Indian Army was executed on time and in full, the company said, adding that this was a major achievement as it was the first time that a private 100% indigenous manufacturer had accomplished such a feat.

The consignment was flagged off by Maj Gen Rakesh Manocha, GOC Telangana and Andhra sub area, on Monday, the company added. Asmi marks the foray of Hyderabad-based CNC machines manufacturer Lokesh Machines into small arms manufacturing and was developed by the company based on the basic design provided by **Armament Research & Development Establishment (ARDE)** Pune and the Indian Army.

Asmi, short for Asmita, which means pride in Sanskrit, beat competition from internationally renowned SMGs such as Uzi, which is manufactured by Israel Weapon Industries (IWI), and German firearms manufacturer Heckler & Koch's MP5 to bag the order, M Srinivas, director, Lokesh Machines said. Asmi weighs under 2.4 kg and is 10-15% lighter than its international competitors.

https://timesofindia.indiatimes.com/city/hyderabad/indian-army-receives-first-indigenous-submachine-gun-asmi-from-lokesh-machines/articleshow/113827881.cms

Defence News

Defence Strategic: National/International

Press Information Bureau
Government of India

Ministry of Defence

Mon, 30 Sep 2024

Air Chief Marshal Ap Singh Takes Over As The Chief Of The Air Staff

Air Chief Marshal AP Singh took over as Chief of the Air Staff (CAS) at a ceremony at Air Headquarters (Vayu Bhawan) today.

The CAS was commissioned on 21 December 1984 in fighter stream of the IAF. He is an alumnus of the National Defence Academy, Defence Services Staff College and National Defence College. He is a Qualified Flying Instructor and an Experimental Test Pilot with more than 5000 hours of service flying on a variety of fixed wing and rotary wing aircraft.

His operational tenures include being the Commanding Officer of a MiG-27 Sqn and Air Officer Commanding of an air base. As a test pilot, he led the Mig 29 Upgrade Project Management Team at Moscow, Russia. He was also the Project Director (Flight Test) at National Flight Test Centre looking after flight testing of Tejas. During his career spanning four decades, the CAS has tenanted staff appointments as Air Defence Commander at HQ South Western Air Command and Senior Air Staff Officer at Eastern Air Command. Prior to taking over as Chief of the Air Staff, he was the Vice Chief of the Air Staff.

The CAS is a recipient of Param VishishtSeva Medal (PVSM) and AtiVishishtSeva Medal (AVSM).In his address to the IAF, Air Chief Marshal AP Singh said that he is honoured and privileged to have been entrusted with the responsibility of leading the Indian Air Force. Extending greetings to all Air Warriors, Non Combatants (Enrolled), DSC personnel, civilians and their families, CAS expressed absolute faith and confidence in their unstinted support and dedication towards maintaining IAF's operational capability at an all-time high.

He conveyed sincere gratitude to the vision of air veterans and attributed the success of the IAF to their superior efforts and dynamic leadership. Highlighting certain focus areas towards building a 'Sashakt, Saksham and an Atmanirbhar' IAF, he urged the Commanders to adopt a nurturing

leadership and enhance cohesion and jointness. He called for attention on the current uncertain geo-politicalsituation and said "It is important that the IAF remains operationally capable, ever vigilant and a credible deterrence." The CAS exhorted all air warriors to follow traditions of the great service and ensure that together we all "Touch the Sky with Glory".

https://pib.gov.in/PressReleasePage.aspx?PRID=2060477

Press Information Bureau
Government of India

Ministry of Defence

Mon, 30 Sep 2024

INS Talwar's Visit To Mombasa, Kenya

Strengthening India's growing ties with East Africa in accordance with the Hon'ble Prime Minister's Vision of SAGAR - Security and Growth for All in the Region, INS Talwar made a port call at Mombasa, Kenya, from 22 to 25 September 2024.

To bolster interoperability and enhance cooperation, personnel from the Indian Navy and Kenyan Navy engaged in a wide range of professional interactions and cross-exchange visits during the harbour phase. The Commanding Officer of INS Talwar called on Brig JS Kiswaa, Deputy Commander of the Kenya Navy, at Mtongwe Naval Base. Discussions during the interaction focused on the continued impetus on professional interactions and training support between the two navies. Professional exchanges, including Visit, Board, Search, and Seizure (VBSS)

and Nuclear, Biological and Chemical Defence (NBCD) demonstrations, were held between personnel from both navies onboard INS Talwar. Further, personnel from both navies bonded during Yoga and Sports fixtures. Crew of INS Talwar visited an Orphanage as part of an outreach programme.

The Command team of KNS Shujaa visited INS Talwar to familiarise themselves with and finalise the exercise programme for the Exclusive Economic Zone(EEZ) Surveillance and Maritime Partnership Exercise (MPX). Upon departure, the ship participated in Joint EEZ Surveillance and MPX with KNS Shujaa. Both ships demonstrated a high level of professional competence. INS Talwar's port visit and interactions with the Indian Navy and Kenyan Navy underline the collaborative efforts of both nations towards realising the deliverables envisaged in the Joint Vision Statement 'BAHARI' released in December 2023**.**

https://pib.gov.in/PressReleasePage.aspx?PRID=2060431

Press Information Bureau
Government of India

Ministry of Defence

Mon, 30 Sep 2024

The Indo-Pacific Regional Dialogue 2024 (IPRD-2024)

The 2024 edition of the annual apex-level international conference of the Indian Navy – the Indo-Pacific Regional Dialogue (IPRD) – will be held in New Delhi on 03, 04 and 05 October 2024. It follows the recently concluded Goa Maritime Symposium 2024, which was conducted by the Indian Navy on 24 and 25 September 2024 at the Naval War College in Goa. (https://pib.gov.in/PressReleasePage.aspx?PRID=2058348).

In terms of conceptual positioning, while the Goa Maritime Symposium seeks to project the Indian Navy's cooperative engagement at the operational level, by providing a forum for discussion among the navies and maritime agencies in the Indian Ocean Region, the IPRD is the principal manifestation of the Indian Navy's international engagement at the strategic-level and addresses 'holistic' maritime security issues across the Indo-Pacific. The National Maritime Foundation (NMF) is the Indian Navy's knowledge partner and chief organiser of each edition of the IPRD.

The first two editions of the IPRD were held in 2018 and 2019, respectively, in New Delhi. While IPRD 2020 was not conducted due to the Covid-19 outbreak, the third edition of IPRD was held in 2021 in virtual mode. Since 2022, successive editions of the IPRD have been conducted in the physical format and are specifically focused upon the deeply interconnected web of seven spokes (or pillars) of the Indo-Pacific Oceans Initiative (IPOI). Each edition of the IPRD seeks to sequentially discuss threadbare the seven constituent lines-of-thrust identified by the IPOI, so as to provide "second-order-specificity" to SAGAR. Accordingly, the theme of IPRD-2022 was

"Operationalising the Indo-Pacific Oceans Initiative", while the 2023 edition discussed "Geopolitical Impacts Upon Indo-Pacific Maritime Trade and Connectivity".

In focusing upon "Resource-Geopolitics and Security in the Indo-Pacific", the 2024 edition of the IPRD (IPRD-2024) would explore and elaborate upon the several dimensions of two vital pillars of the IPOI Web, namely, "Marine Resources" and "Resource Sharing". This year's conference would concentrate upon the manner in which traditional and newly identified marine resources are driving contemporary geopolitics and are likely to do so in the foreseeable future. These include dwindling fish-stocks – with a concomitant increase in Illegal, Unreported, and Unregulated (IUU) fishing, especially in oceanic areas beyond national jurisdiction. Another manifestation of resource-geopolitics is the geopolitical race for cobalt, lithium, nickel, and other hard-to-find minerals, as also rare earth elements (REE) such as tellurium and neodymium that are needed for the millions of batteries, solar panels, wind turbines, and other such renewable-energy devices required to successfully transition from fossil-fuels to renewable sources of energy. In addition, offshore energy resources such as hydrocarbons, are likely to retain their geopolitical significance, even as more unconventional ones, such gas hydrates and oceanic renewable energy resources – ocean-sourced hydrogen for example, appear likely to drive future geoeconomic strategies across the Indo-Pacific.

The IPRD-2024, through the agency of a series of globally renowned subject-matter experts and eminent speakers, will endeavour to identify mega trends of resource-geopolitics in the Indo-Pacific and posit policy-options that could be pursued to advantage. Over a period of three days, it would also explore whether and how cooperation, collaboration, and comity might offer alternative pathways within the paradigm of resource-geopolitics. A particular highlight of this mega conference will be the Commemorative Address by the Hon'ble Raksha Mantri of India, Shri Rajnath Singh. IPRD-2024 will also incorporate a series of "Special Addresses" by particularly distinguished speakers, over and above a veritable galaxy of luminaries drawn from over 20 countries, who are expected to offer a series of fascinating regional perspectives on the theme of the conference. The proactive participation of our vibrant student community, research scholars, eminent citizens, academics and practitioners, members of the diplomatic corps, and think-tanks from India and abroad will inject special effervescence to this event.

https://pib.gov.in/PressReleasePage.aspx?PRID=2060305

THE ECONOMIC TIMES

Mon, 30 Sep 2024

Army signs 8th procurement contract through iDEX

In line with the commitment towards the 'Atmanirbhar Bharat' initiative, the Army on Monday signed the eighth procurement contract through the Innovations for Defence Excellence (iDEX) platform.

The aim of iDEX is to create an ecosystem to foster innovations and encourage technological development in defence and aerospace by engaging research and development institutes, academia, and industries and providing them funding and other support to carry out R&D which has good potential for future adoption by Indian defence and aerospace organisation.

Launched by Prime Minister Narendra Modi on April 12, 2018, during the Defence Expo India, iDEX under the Defence Innovation Organisation has emerged as a front-runner in establishing the right kind of contact with startups and innovators and has gained substantial traction in the defence start-up community, the defence ministry said in a statement.

The contract for procurement of 'Generation of Quantum Secure Key (Quantum Key Distribution)' with QuNu Labs was signed in the presence of Lt Gen NC Raja Subramani, Vice Chief of the Army Staff, at the South Block here.

"QuNu Labs had proposed a 200 km single hop Quantum Key Distribution in Open Challenge 2.0 under iDEX. It will replace the algorithm-based encryption systems thus enabling greater security as also optimising manpower commitment," the statement said. At present there are a total of 74 projects of the Indian Army under iDEX included as part of Acing Development of Innovation Tech with iDEX (ADITI), Defence India Startup Challenge (DISC) and Open Challenge schemes which involve handholding of 77 startups for the development of latest state-of-theart solutions for the Indian Army, it said.

The Indian Army is already carrying out field exploitation of the four delivered equipment from various iDEX schemes. Based on the results of the field exploitation further spiral development of the innovative technology will be progressed with startups, the statement said.

https://economictimes.indiatimes.com/news/defence/army-signs-8th-procurement-contract-through-idex/articleshow/113825491.cms

THE ECONOMIC TIMES

Mon, 30 Sep 2024

BEL inks pact with SAC-ISRO to boost indigenisation of defence and space production

Defence PSU Bharat Electronics Limited (BEL) on Monday said it has signed a Memorandum of Understanding with the Space Applications Centre (SAC), ISRO to collaborate, indigenise and develop infrastructure for manufacturing space-grade Travelling Wave Tube Amplifiers (TWTAs) in India.

The BEL said that the MoU that was signed at SAC Ahmedabad will give a boost to the indigenisation of defence and space production and save foreign exchange for the country.

"TWTA is a complex multi-disciplinary technology involving controlled interaction of microwave with electron beam under ultrahigh vacuum conditions. State-of-the-art fabrication and manufacturing facility for TWTAs has been established at BEL," the defence PSU said.

TWTAs developed by SAC, ISRO, and manufactured by BEL will be used in satellite communication and navigation payloads, microwave remote sensing radar payloads, scientific missions or probes and inter-spacecraft communications links.

These items are integral parts of various communication and microwave remote sensing payloads, it added.

https://economictimes.indiatimes.com/news/defence/bel-inks-pact-with-sac-isro-to-boost-indigenisation-of-defence-and-space-production/articleshow/113823168.cms

Press Information Bureau
Government of India

Ministry of Defence

Mon, 30 Sep 2024

India- Kazakhstan Joint Military Exercise KAZIND -2024 Commences In Auli

The 8th edition of India-Kazakhstan Joint Military Exercise KAZIND-2024 commenced today, at Surya Foreign Training Node, Auli, Uttarakhand. The exercise is scheduled to be conducted from 30th September to 13th October 2024. Joint Exercise KAZIND-2024 has been held annually since 2016. Last edition of the Joint Exercise was held at Otar, Kazakhstan from 30th October to 11th November 2023.

The Indian Armed Forces, comprising 120 personnel, are being represented by a battalion of the KUMAON Regiment of Indian Army, along with other arms and services, as well as personnel from Indian Air Force. The Kazakhstan contingent will be represented mainly by personnel from Land Forces and Air Borne Assault Troopers.

Aim of the Joint Exercise is to enhance joint military capability of both sides to undertake counter terrorism operations in a sub conventional scenario under Chapter VII of the United Nations Charter. The Joint Exercise will focus on operations in the semi-urban and mountainous terrain. Objectives to be achieved from the Joint Exercise are high degree of physical fitness, rehearsing and refining drills for operations at tactical level and sharing of best practices.

Tactical drills to be rehearsed during the Joint Exercise include joint response to a terrorist action, establishment of a Joint Command Post, establishment of an Intelligence and Surveillance Centre, securing of helipad / landing site, combat free fall, Special Heliborne Operations, Cordon and Search operations, besides employment of drones and counter drone systems among others.

Joint Exercise KAZIND-2024 will enable both sides to share best practices in tactics, techniques and procedures of conducting joint operations. It will facilitate developing inter-operability, bonhomie and camaraderie between the two armies. The Joint Exercise will also enhance defence cooperation, further augmenting bilateral relations between the two friendly nations.

https://pib.gov.in/PressReleasePage.aspx?PRID=2060265

Business Standard

Mon, 30 Sep 2024

No Indian radar, Astra missile on Navy's Rafale-M jets? Here's what we know

France on Sunday provided India with its final price offer for the 26 Rafale Marine jet deal for the Indian Navy, with reports indicating that the cost of the combat aircraft has been significantly reduced after multiple rounds of negotiations. The development, reported by news agency ANI, came just ahead of the planned visit by Indian National Security Advisor Ajit Doval to the country.

In June, reports had indicated that the deal for the Navy's 26 Rafale Marine jets was likely to be worth over Rs 50,000 crore. However, the current estimated cost for the aircraft is not publicly known after France's reported lowering of prices.

What's the latest update on the India-France Rafale-M deal?

Speaking to the news agency, unnamed defence sector sources said that France had submitted "the best and final price offer" to the Indian authorities, following tough negotiations. According to them, a considerable price reduction has been offered in the proposed contract.

India and France are in talks for the procurement of 26 Dassault Rafale Marine jets, which are to be deployed on the INS Vikrant aircraft carrier. The acquisition process, which has been in the works for over three years, saw progress last week, when a French delegation reportedly visited New Delhi to finalise the discussions with Indian officials.

According to reports, the deal will now be discussed during the India-France Strategic Dialogue, where the Indian NSA is scheduled to meet his French counterparts starting Monday in Paris. Commercial discussions between India and France have been ongoing for more than a year, with the contract being processed via the government-to-government route, similar to the previous Rafale acquisition for the Indian Air Force (IAF).

How did India get France to lower the Rafale-M price?

After multiple rounds of negotiations, the price for the Rafale Marine jets has been significantly reduced, with the deal being benchmarked against the 2016 contract for 36 Rafale jets for the IAF, an Economic Times report revealed, citing unnamed sources.

With New Delhi and Paris having reportedly arrived at a final price bid, both parties are nearing the conclusion of a deal. Earlier, the Defence Acquisition Council, led by Defence Minister Rajnath Singh, approved certain amendments in the letter of request -- the equivalent of a tender document in government-to-government deals -- that resulted in the submission of the final price bid, according to the Economic Times report.

One of the changes reportedly involved dropping the initial plan to integrate the indigenous Uttam active electronically scanned array (AESA) radar and weapon systems, including the Astra beyond visual range and Rudram anti-radiation missiles, into the naval Rafale jets, due to the high cost to be paid to the French side for the modifications and the estimated eight-year timeline for completing the integration. This could be one of the reasons that France has slashed the final price for the Rafale Marine jets.

Why does the Indian Navy want Rafale Marine jets?

The Indian Navy requires 26 4.5-generation fighter jets capable of operating from its aircraft carriers, with the deal being significant for the force as it seeks to bolster its maritime strike capabilities. While the integration of indigenous sensors and weapons might not reportedly be on the cards at present, certain IAF requirements have also been incorporated into the naval deal, such as the inclusion of approximately 40 long-range drop fuel tanks, which can extend the jet's range for maritime operations, according to ANI.

Sources told the Economic Times that apart from compatibility with the IAF's Rafale fleet, the Navy's jets will also be equipped with specialised anti-ship weaponry. The Rafale Marine jets will also be equipped with Meteor long-range beyond visual range air-to-air missiles. The deal is reportedly intended to be finalised before the end of this financial year.

https://www.business-standard.com/external-affairs-defence-security/news/no-indian-radar-astra-missile-on-navy-s-rafale-m-jets-here-s-what-we-know-124093000356_1.html

the pioneer

Tue, 01 Oct 2024

The deceptive facade of China’s military

-By Bhopinder Singh (Military veteran, former Lt Governor of Andaman & Nicobar Islands and Puducherry)

Deception is at the heart of Chinese strategy and operations, especially on matters, the military. Ancient Sinological philosophers like Sun Tzu (The Art of War) had propounded extensively on cheating (likening it to a ‘magic weapon’) as a vital underpinning of deceptive warfare. The Chinese PLA Navy Submarine Academy has formally distilled four examples of deception in war (under the manual, ‘Essentials of Sun Tzu and the Art of War and Submarine Operations’). Firstly ‘Show yourself to intimidate the enemy’, then ‘Show the false to confuse the enemy’, thirdly ‘Create momentum to harass the enemy’ and lastly ‘Deceive to obstruct the enemy’. Herein,

untruth is a natural necessity as per their established treatise. India would be well versed in how the Chinese would talk about the 1962 Indo-China War but remain conspicuously silent on the reversal of fortunes about the 1967 Nathu La and Cho La border clashes. While an estimated 340 Chinese soldiers had died then (88 on the Indian side) – true to their downplaying style, they only accepted a figure of 32 fatalities. The Chinese are similarly circumspect or lying about the essential outcomes of the China-Vietnam War of 1979.

This deliberate fudging of facts was to repeat itself in the 2020 India-China skirmishes on the Line of Actual Control (LAC). While India acknowledged the loss of its Bravehearts in the bloody encounters, the Chinese shied away from acknowledging any of their own – this when the US pegged the Chinese fatalities as 20-35, the Russians estimated Chinese loss of about 45, whereas the Australians insisted at least 41 Chinese killed.

Almost a year later, the Chinese sheepishly admitted four fatalities killed in the Galwan clashes, as they gave away gallantry awards. True to their practised instincts, the Chinese always overstated their gains and downplayed their losses to deceive the onlookers (especially their citizenry) to retain ‘manufactured’ optics of infallibility and invincibility, even when the reality was a lot more unheroic. This sovereign impulse of fake claims, downplaying failures, and overstating their capabilities has been elevated to a fine art, as is the won't of any authoritarian state reeling from regime insecurities.

It routinely manifests in their claims of making advancements in technologies, weaponry and platforms that are ostensibly cutting-edge and even ahead of peers like the United States or Russia. The reality is essentially predicated on reverse-engineering technologies that could be brazenly stolen or surreptitiously acquired – but the claim of ‘homegrown’ is gleefully posited.

A lot of ‘fifth generation’ fighters, Intercontinental Ballistic Missiles, Hypersonic technologies to Chinese nuclear submarines remain in public news but are essentially untested or unsubstantiated in live combat. While it has a considerable industrial base and budgetary allocation granted to its Defence Industry, like everything else in the Chinese realm, claims remain more impressive than reality. With this murky backdrop, came the recent news of the sinking of the latest Chinese nuclear submarine. The fact that the Zhou-class of attack submarine sank even before going into service, speaks volumes of the gap between purported technological advancements as opposed to factual efficacy. Incidentally, the US Deputy Secretary of State, Kurt Campbell, had confirmed that the Russians were helping China develop this submarine technology and that it too wasn’t necessarily home-grown, as claimed. While this sinking of the submarine is believed to have happened in May earlier, it was never owned up by the Chinese and it took satellite images to unravel the sinking of the first-in-class nuclear-powered Chinese submarine. It is certainly a major setback for China’s priority weapons programs that is key to its expansionist and hegemonic aspirations.

As if on the rebound and to stitch a counternarrative, China is believed to have fired an Intercontinental Ballistic Missile into the Pacific Ocean, in a move that seems designed to distract and deflect from the embarrassing news of its sunk submarine and to reiterate its prowess and capability. Coming as the testing does after more than four decades over the Pacific Ocean, it is unmistakably a ‘signal’ move to suggest that the ‘Dragon’ still retains sharp claws and fangs.

Incidentally, the missile is part of the PLA's Rocket Force that was subjected to a sweeping corruption crackdown, purge, and complete overhaul last year – something that could be inflicted again on the PLA Navy leadership, which was in charge of the sunk submarine. Already the chorus of sub-standard Chinese weaponry has gained decibels from traditional clients like Pakistan or from emerging ones like Bangladesh, who complained about the quality of spares for its navy. Russia's decline on the global stage as a military supplier has not resulted in an automatic transfer of business to the Chinese manufacturers, as earlier thought and the growing perception of 'Made in China' has a lot to do with the reactions. With the US returning to the Pakistani arms market (Islamabad accounts for over 50 per cent of Chinese exports), and the overall pressures of economic slowdown haunting the Chinese economy – Beijing is in a tight spot to invest, innovate, and deliver weaponry that truly delivers what it claims. It is premature to write off Chines 'Military-Industrial complex just yet, but the chinks in its armour are getting routinely exposed. While still a 'value player' for the desperate, authoritarian or 'paradise' countries, its claim to cutting-edge technology is suspect.

https://www.dailypioneer.com/2024/columnists/the-deceptive-facade-of-china---s-military.html#:~:text=Deception%20is%20at%20the%20heart,vital%20underpinning%20of%20deceptive%20warfare.

Science & Technology News

Press Information Bureau
Government of India

Ministry of Science & Technology

Mon, 30 Sep 2024

Launch of BharatGen: The first Government-funded Multimodal Large Language Model Initiative

BharatGen, a pioneering initiative in generative AI designed to revolutionize public service delivery and boost citizen engagement through developing a suite of foundational models in language, speech and computer vision, was inaugurated in the virtual presence of Dr. Jitendra Singh, Union Minister of State (Independent Charge) for Science and Technology, Minister of State (Independent Charge) for Earth Sciences, MoS PMO, Department of Atomic Energy and Department of Space and MoS Personnel, Public Grievances and Pensions, today in New Delhi.

"BharatGen is a proud example of India's commitment to advancing homegrown technologies. It positions India as a global leader in the field of Generative AI, much like our achievements with

UPI and other innovations that have transformed various sectors," said Dr Jitendra Singh during the inauguration.

He added that this initiative marks the world's first government-funded Multimodal Large Language Model project focused on creating efficient and inclusive AI in Indian languages.

Spearheaded by IIT Bombay under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS), of the Department of Science and Technology (DST), the initiative will create generative AI systems that can generate high-quality text and multimodal content in various Indian languages. The implementation of the project is by the TIH Foundation for IOT and IOE at IIT Bombay with academic partners from other premier academic Institutes that include IIT Bombay, IIIT Hyderabad, IIT Mandi, IIT Kanpur, IIT Hyderabad, IIM Indore, and IIT Madras will undertake the execution of the project. The Director, IIT Bombay, Prof. Shireesh Kedare was also present at the occasion along with consortium faculty members led by Prof. Ganesh Ramakrishnan.

BharatGen will deliver generative AI models and their applications as a public good by prioritizing India's socio-cultural and linguistic diversity. It strives to address India's broader needs such as social equity, cultural preservation, and linguistic diversity, while ensuring that generative AI reaches all segments of society.

"BharatGen is aligned with the goal of making AI accessible to all citizens, using AI not only for industrial and commercial purposes but also to address national priorities like cultural preservation and inclusive technology development, said DST Secretary Professor Abhay Karandikar.

The four key distinguishing features of BharatGen are the multilingual and multimodal nature of foundation models; Bhartiya data set based building, and training; open-source platform and development of an ecosystem of generative AI research in the country. The project is expected to be completed in two years along with plans to benefit several government, private, educational, and research institutions.

BharatGen will cater to both text and speech, ensuring coverage across India's diverse linguistic landscape. By training on multilingual datasets, it will deeply capture the nuances of Indian languages, which are often underrepresented in global AI models. Further, unlike models that rely on global datasets, BharatGen focuses on developing processes for collecting and curating India-centric data, ensuring that the country's diverse languages, dialects, and cultural contexts are accurately represented. This emphasis on data sovereignty strengthens India's control over its digital resources and narrative.

BharatGen aligns with the vision of Atmanirbhar Bharat by creating foundational AI models specifically tailored for India. By developing AI technologies within India, BharatGen reduces reliance on foreign technologies and strengthens the domestic AI ecosystem for startups, industries, and government agencies. Democratizing access to AI through foundational models and detailed technical recipes it allows innovators, researchers, and startups to build AI applications quickly and affordably.

A core feature of BharatGen is its focus on data-efficient learning, particularly for Indian languages with limited digital presence. Through fundamental research and collaboration with academic institutions, the initiative will develop models that are effective with minimal data—a

critical need for languages underserved by global AI initiatives. BharatGen will also foster a vibrant AI research community through training programs, hackathons, and collaborations with global experts.

Looking ahead, BharatGen's roadmap outlines key milestones up to July 2026. These include extensive AI model development, experimentation, and the establishment of AI benchmarks tailored to India's needs. BharatGen will also focus on scaling AI adoption across industries and public initiatives.

https://pib.gov.in/PressReleasePage.aspx?PRID=2060437

Press Information Bureau
Government of India

Ministry of Science & Technology

Mon, 30 Sep 2024

Principal Scientific Advisor A K Sood Unveils Thematic Hubs and Technical Groups under the National Quantum Mission to Drive India's Quantum Revolution, with Union Minister Dr. Jitendra Singh Joining Virtually

In a major step for India's National Quantum Mission (NQM), selected premier institutions to establish Thematic Hubs (T-Hubs) were announced in the virtual presence of Dr. Jitendra Singh, Union Minister of State (Independent Charge) for Science and Technology, Minister of State (Independent Charge) for Earth Sciences, MoS PMO, Department of Atomic Energy and Department of Space and MoS Personnel, Public Grievances and Pensions, today in New Delhi.

These hubs, dedicated to propelling quantum research and innovation, will help position India at the forefront of the global quantum technology revolution, reinforcing the country's leadership in the most advanced scientific frontiers.

"The hubs will be at the forefront of research and innovation, setting the stage for India's leadership in quantum computing, communication, sensing, and materials, said Dr Jitendra Singh while announcing the T-Hubs.

He added that one of the key strengths of the T-Hubs is their multi-disciplinary approach, bringing together experts from diverse fields like physics, computer science, engineering, and material science to drive holistic advancements in quantum technology.

The four T-Hubs have been set up in the institutions – Indian Institute of Science (IISc) Bengaluru, Indian Institute of Technology (IIT) Madras along with Centre for Development of Telematics New Delhi, Indian Institute of Technology (IIT) Bombay and Indian Institute of Technology (IIT) Delhi and comprises of 17 Technical Groups. They were selected through a highly competitive

process and will specialize in key quantum verticals, ensuring a comprehensive and robust development of Quantum Computing, Quantum Communication, Quantum Sensing & Metrology, and Quantum Materials & Devices respectively.

National Quantum Mission launched its Call for Proposals (CFP) in January 2024, inviting leading academic institutions and R&D centers to submit projects in the four critical quantum verticals. The response was overwhelming, with 384 proposals submitted from across India. A rigorous evaluation process led to the selection of 17 proposals, representing the highest caliber of quantum research. A total of 152 researchers from 43 institutions across India contributed to this exceptional national effort, highlighting the country's collective ambition to lead in this emerging field.

The T-Hubs will drive significant advancements in quantum technology development, human resource capacity building, entrepreneurship and industry collaboration, as well as strengthening international partnerships.

Each T-Hub will operate under the Hub-Spoke-Spike model, supporting a cluster-based network of research projects (Spokes) and individual research groups (Spikes) alongside these central hubs to enhance coordination among research institutions, enabling them to pool resources and expertise.

"The Mission fosters collaboration between academic institutions, industry, startups, and government entities to seed, nurture, and scale up research in quantum technologies across these four verticals," said DST Secretary Professor Abhay Karandikar.

The NQM aims to empower research institutions and startups by providing essential funding, infrastructure, and a conducive environment for collaboration and growth. To further support the development of quantum technologies, NQM has prepared detailed guidelines aimed at nurturing startups in this emerging field. The mission will also facilitate critical national and international partnerships, ensuring India stays at the forefront of technological advancements while building the capacity of its researchers.

The mission will ensure the sustained growth and development of the T-Hubs throughout its period, setting the stage for India's leadership in Quantum Technologies. This approach will create a robust network of research initiatives and collaborations across the nation, ensuring comprehensive growth in quantum technology development.

Institutes involved in the T-Hubs:

Thematic Hub for Quantum Computing: Indian Institute of Science, Bengaluru

Institutions Involved: IIT Delhi, IIT Kanpur, IIT Roorkee, IIT Bombay, IIT Madras, IIT Ropar, IIT Guwahati, IIT Patna, BITS Hyderabad, IMSc Chennai, JIIT Noida, SETS Chennai, CDAC Bengaluru, IIT Indore, IISER Thiruvananthapuram, IISER Pune, RRI Bengaluru, NISER Bhubaneswar, TIFR Mumbai, TIFR Hyderabad and JNCASR Bengaluru

Thematic Hub for Quantum Communication: Indian Institute of Technology, Madras

Institutions Involved: ISRO Ahmedabad, ISRO Satellite Centre, IIT Delhi, IIT Kanpur, IIT Kharagpur, IIT Bhilai, IIT Roorkee, IIT Jammu, IIT Tirupati, IIT Patna, IIT Indore, IIT Hyderabad, IISc Bengaluru, IISER Bhopal, IISER Mohali, RRI Bengaluru, HRI Prayagraj, IIST DOS Thiruvananthapuram, CDAC Bengaluru, C-DAC Thiruvananthapuram and SETS Chennai

Thematic Hub for Quantum Sensing and Metrology: Indian Institute of Technology, Bombay

Institutions Involved: IISc Bengaluru, IIT Madras, IIT Delhi, IIT Kanpur, IIT Gandhinagar, IISER Bhopal, IIT Ropar, TCG CREST Chennai, TIFR Bombay, TIFR Hyderabad, HRI Prayagraj, IACS Kolkata, BITS Goa, University of Hyderabad and SN Bose NCBS

Thematic Hub for Quantum Materials and Devices: Indian Institute of Technology, Delhi

Institutions Involved: IIT Bombay, IIT Madras, IIT Kanpur, IIT Roorkee, IIT Kharagpur, IIT Bhubaneswar, SSPL- DRDO Delhi, IACS Kolkata and IISER Pune

Dr. J B V Reddy, Mission Director, NQM; Prof. Abhay Karandikar, Secretary, Department of Science & Technology; Dr. Neeraj Mittal, Secretary, Department of Telecommunications, Dr. Samir V Kamat, Secretary, DDR&D and Chairman DRDO; Prof. A.K. Sood, Principal Scientific Adviser to Government of India; Dr. Ajai Chowdhry, Chairman, MGB, NQM; Dr. Kris Gopalakrishnan, Chairman, MGB, NM-ICPS graced the occasion with their presence.

https://pib.gov.in/PressReleasePage.aspx?PRID=2060438

Press Information Bureau
Government of India

Ministry of Science & Technology

Mon, 30 Sep 2024

CSIR-Central Drug Research Institute Lucknow and Zydus to Develop Best-In-Class Drug for Chronic Kidney Disease Induced Osteoporosis

Based on research conducted at Central Drug Research Institute (CDRI), Lucknow and data from antibody-based therapies (biologics), a protein Sclerostin, has emerged as a promising drug target for treating Chronic kidney disease (CKD) induced osteoporosis as well as postmenopausal osteoporosis. Studies suggest that the protein Sclerostin plays a key role in the dysregulation of bone metabolism. In patients with advanced stages of CKD and osteoporosis, Sclerostin levels are observed to be high.

To develop oral medication through the discovery of small molecule inhibitors of Sclerostin, a collaborative research agreement was signed by Zydus Lifesciences Ltd, Ahmedabad and Central Drug Research Institute, Lucknow. Under this agreement, CDRI and Zydus will jointly undertake preclinical research. Any drug candidate emerging from the efforts will be developed by Zydus for India and other markets.

Chronic kidney disease (CKD) affects over 10% of the global population, posing significant health challenges. One of the major complications of CKD is disruption of mineral metabolism,

increasing the risk of osteoporosis and fractures. Those above the age of 65, particularly women, are at higher risk. Unfortunately, most of the conventional anti-osteoporosis medications are contraindicated in patients with CKD, due to the risk of worsening renal function. Therefore, there is an urgent need to develop safe and effective drugs for osteoporosis that will reduce fracture risk without a deterioration of renal function.

Commenting on the partnership, Dr Radha Rangarajan, Director, CSIR-CDRI said, “CSIR-CDRI has worked extensively in the area of bone metabolism under the leadership of Dr Naibedya Chattopadhyay.” The complementary expertise and capabilities of the two organizations, combined with a shared mission to address India’s unmet needs through innovative therapies, makes this collaboration particularly meaningful, he added.

Mr. Pankaj Patel, Chairman, Zydus Lifesciences Limited, on the occasion said, “CSIR-CDRI's deep-rooted expertise in biomedical research, coupled with Zydus's innovative approach to drug discovery and development, creates a powerful synergy.” Together, the two organisations will explore new avenues for treating bone metabolism disorders, ensuring that CKD patients have access to effective and affordable therapies that improve their quality of life, reiterated the Chairman.

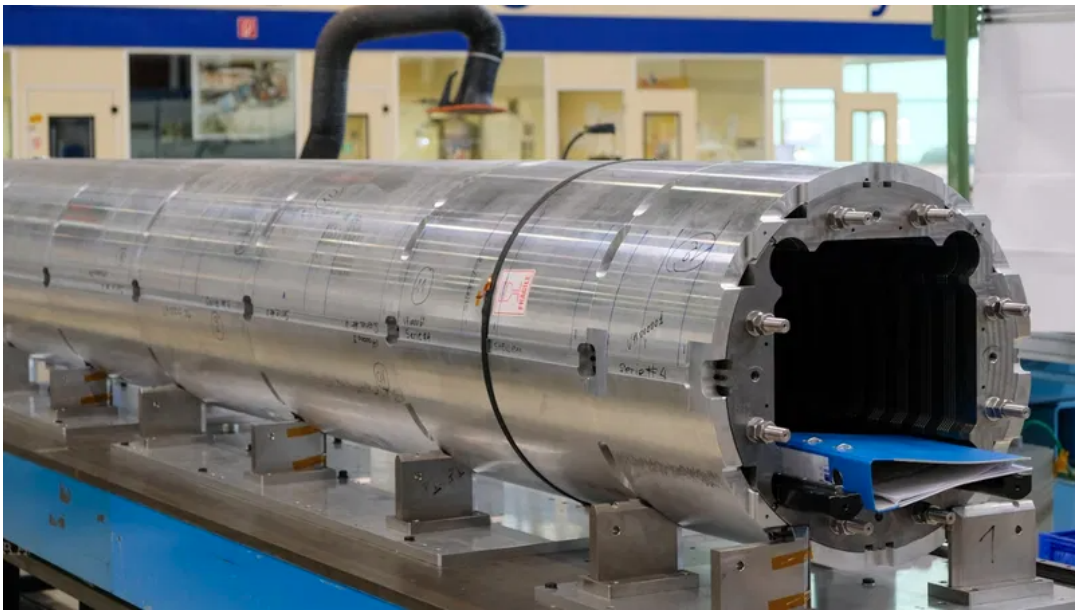
https://pib.gov.in/PressReleasePage.aspx?PRID=2060360

Mon, 30 Sep 2024

Hope for New Physics: Ultra-Rare Particle Decay Observed by CERN’s NA62 Experiment

A ground-breaking discovery has been made by UK researchers working with CERN’s NA62 collaboration, they have seen an ultra-rare particle disintegrate for the first time. The rare decay of a charged kaon (K^+) into a charged pion (π^+) and a pair of neutrinos and antineutrinos ($\nu\bar{\nu}$) was recorded by the experiment. This is a significant turning point in the hunt for physics outside of the Standard Model. The discovery meets the stringent requirements in particle physics for being deemed a discovery, with a 5 sigma importance.

It is predicted by the Standard Model that less than one in 10 billion kaons decays in this manner. The discovery of such an uncommon process raises the possibility that there are physics at work that has never been observed before. More data will now be gathered by researchers to investigate the possibility of additional particles being involved.



Technological Developments Produce Unique Outcomes

High-intensity proton beams are used in the NA62 experiment at CERN's Super Proton Synchrotron to produce kaons. Between 2021 and 2022, significant improvements were made that increased beam intensity by 30 per cent and enhanced detection efficiency. These improvements made it possible for the researchers to collect data on kaon decay much more quickly than they could have previously, which improved their ability to identify this elusive disintegration.

The world-wide collaboration's experience and these technological breakthroughs made the first-of-its-kind detection feasible. Researchers from the universities of Lancaster, Birmingham, Bristol, and Glasgow were among the main contributors. The NA62 Physics Coordinator, Dr. Karim Massri of Lancaster University, clarified that the event's rarity increases its sensitivity to the existence of novel physics that could have been missed by conventional methods.

Significance and Prospective Consequences

This uncommon kaon decay mechanism is very sensitive to any departures from the Standard Model, and because of its highly suppressed nature, it is regarded as a "golden mode" for the discovery of novel physics. The new results support the predictions that have been made, but they also raise the prospect of unexplained events, which might lead to the discovery of unidentified particles or forces.

The NA62 experiment will continue to investigate if the decay rate's divergence from the Standard Model prediction indicates the possibility of novel physics as additional data are gathered. Researchers from the UK who are actively participating in the study stress that this finding highlights how crucial accurate, data-driven observations are to particle physics.

In the ongoing effort to solve enigmas outside the scope of our existing knowledge of the cosmos, the NA62 experiment continues to hold up fascinating possibilities

https://www.news9live.com/science/hope-for-new-physics-ultra-rare-particle-decay-observed-by-cerns-na62-experiment-2709433