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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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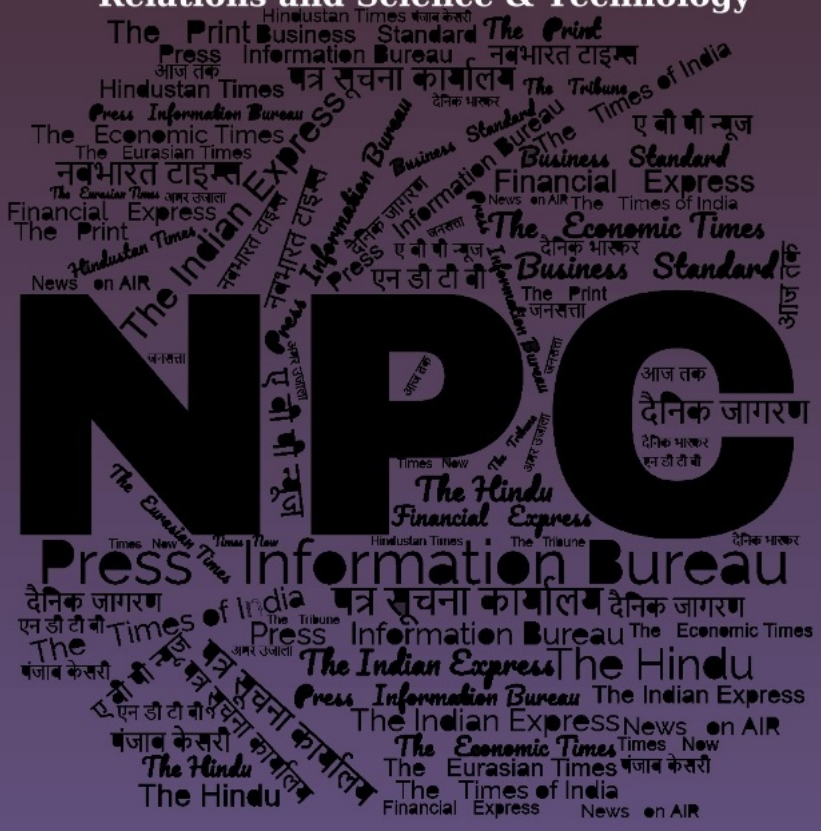

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माउंटेड गन सिस्टम: भारत की शक्ति में 'स्वदेशी पंच'

Source: Dainik Jagran, Dt. 09 Jul 2025

माउंटेड गन सिस्टमः भारत की फायर पावर में 'स्वदेशी पंच'

बढ़ती रक्षा चुनौतियों के बीच रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) ने स्वदेशी तकनीक पर आधारित माउंटेड गन सिस्टम बनाया है। यह सिस्टम सेना की आर्टिलरी क्षमताओं को मजबूती देगा। राजस्थान का तपता रेगिस्तान हो या लद्दाख में -50 डिग्री तापमान, गन दोनों तरह के हालात में दुश्मन के ठिकानों पर कहर बरपाएगी। आइये जानते हैं यह गन कैसे भारत की फायर पावर को नए स्तर पर पहुंचाएगी।

क्या है माउंटेड गन सिस्टम

माउंटेड गन सिस्टम यानी ऐसी भारी तोप, जो एक हाई-मोबिलिटी आर्म्ड ट्रक पर लगाई जाती है। यह 155 मिमी/52 कैलिबर की तोप है और मारक क्षमता 45 किलोमीटर तक है। सबसे खास बात यह है कि यह तोप सिर्फ 85 सेकंड में फायरिंग के लिए तैयार हो जाती है और एक मिनट में 6 गोले दाग सकती है।

कहीं भी हो सकती है तैनाती

इस गन की सबसे बड़ी ताकत है, इसका हाई मोबिलिटी सिस्टम। चाहे राजस्थान का तपता रेगिस्तान हो या सियाचिन की बर्फीली चोटियां, यह तोप हर इलाके में आसानी से तैनात की जा सकती है। इसे रेलगाड़ी या वायुसेना के भारी ट्रांसपोर्ट एयरक्राफ्ट से कहीं भी पहुंचाया जा सकता है।

शूट और स्कूट क्षमता बनाती है घातक

- इस माउंटेड गन सिस्टम में शूट एंड स्कूट क्षमता है। इसका मतलब है कि यह तेजी से फायरिंग करके तुरंत जगह बदल सकती है, ताकि दुश्मन जवाबी हमला न कर सके। यह क्षमता ही इसे सेना के लिए खास तौर से उपयोगी और दुश्मनों के लिए घातक बनाती है।
- यह भारी गन सिस्टम उबड़-खाबड़ इलाकों में 60 किलोमीटर प्रति घंटा और समतल इलाके में 90 किलोमीटर प्रति घंटा की रफ्तार से दौड़ सकता है।
- इसका कुल वजन करीब 30 टन है, जिसमें 15 टन गन और 15 टन ट्रक का वजन है।
- गन में एक एडवांस अटैक गन सिस्टम लगा है, जो पहले से भारतीय सेना में शामिल है।
- यह पूरी तरह स्वचालित है। लोकेशन फीड करने के बाद तुरंत निशाना साधकर हमला करता है।
- एक फायर में करीब 50 वर्ग मीटर का इलाका तबाह कर सकता है।
- गन सिस्टम में सात क्रू मेंबर के लिए बुलेटप्रूफ केबिन है, जिससे इसमें बैठे सेना के जवान पूरी तरह सुरक्षित रहेंगे।

सिर्फ 15 करोड़ रुपए में तैयार

भारतीय सेना को करीब 700- 800 माउंटेड गन सिस्टम की जरूरत है। खास बात यह है कि विदेश से ऐसी तोप खरीदने में 30 से 35 करोड़ रुपए खर्च होंगे लेकिन भारत में बनी यह गन सिर्फ 15 करोड़ रुपए में तैयार हो रही है। बड़े आर्डर मिलने पर इसकी कीमत और कम हो सकती है। सेना जल्द ही इस सिस्टम का फील्ड ट्रायल करने जा रही है। इसे पहले राजस्थान, पंजाब बार्डर, उत्तर-पूर्वी राज्य और सियाचिन में तैनात किया जाएगा।

दुनिया के चुनिंदा देशों में शामिल हुआ भारत

अब तक दुनिया के गिनती के देश ही ऐसी माउंटेड गन बना पाए हैं। अब भारत भी इस तकनीक में आत्मनिर्भर बन गया है। रूस-यूक्रेन युद्ध ने दिखाया है कि ऐसी गन किसी भी जंग की दिशा बदल सकती है। डीआरडीओ की इस कामयाबी से भारतीय सेना की ताकत कई गुना बढ़ेगी और दुश्मन को मुंहतोड़ जवाब देने में यह तोप गेमचेंजर साबित होगी।

जागरण रिसर्च

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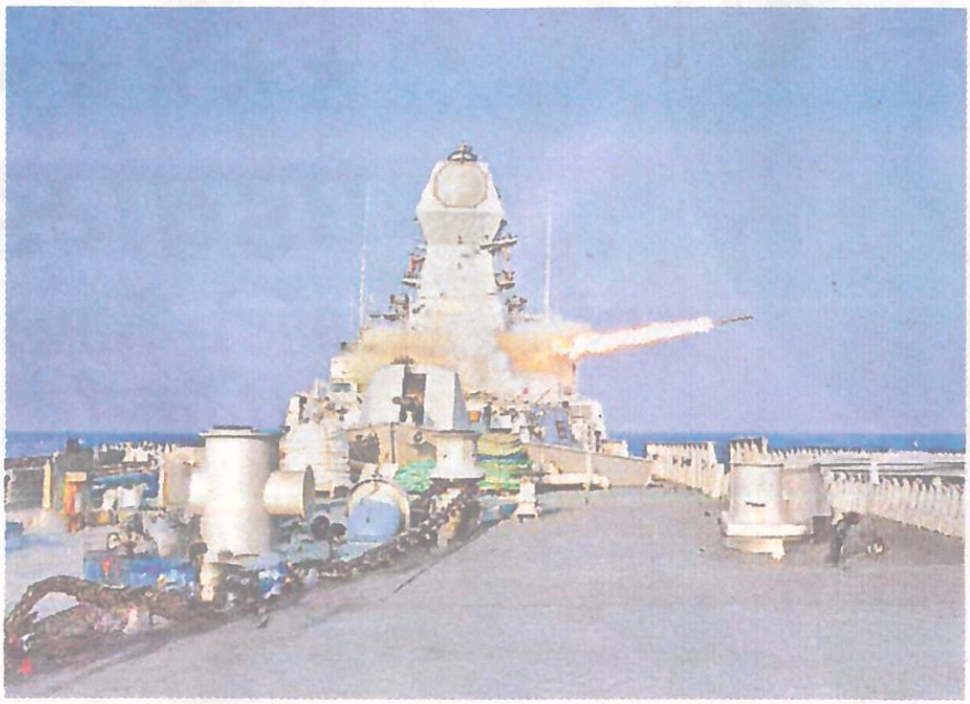
Defence News

भारत में पंदुब्बी रोधि रॉकेट प्रणाली का किया सफल परीक्षण

Source: Dainik Jagran, Dt. 09 Jul 2025



भारतीय नौसेना की मारक क्षमता और बेहतर हो गई है। इसने मंगलवार को आइएनएस कवरत्ती से ज्यादा लंबी दूरी वाली पनडुब्बी रोधी राकेट प्रणाली (ईआरएएसआर) का सफल परीक्षण किया। ● आइएएनएस

नई दिल्ली, प्रेट्र: भारत ने एक विस्तारित रेंज वाली पनडुब्बी रोधी राकेट प्रणाली का परीक्षण किया है। इससे भारतीय नौसेना की मारक क्षमता में उल्लेखनीय वृद्धि होने की उम्मीद है। विस्तारित रेंज एंटी सबमरीन राकेट (ईआरएएसआर) का परीक्षण आइएनएस कवरत्ती से सफलतापूर्वक किया गया है। रक्षा मंत्री राजनाथ सिंह ने रक्षा अनुसंधान विकास संगठन, भारतीय नौसेना और इस प्रणाली

विस्तारित रेंज एंटी सबमरीन राकेट (ईआरएएसआर) का परीक्षण आइएनएस कवरत्ती से सफलतापूर्वक किया गया

के विकास एवं परीक्षण में शामिल उद्योग को बधाई दी। उन्होंने कहा कि इस प्रणाली को सफलतापूर्वक शामिल करने से भारतीय नौसेना की मारक क्षमता में वृद्धि होगी।

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Navy tests long-range anti-submarine rocket

Source: The Tribune, Dt. 09 Jul 2025

The Indian Navy has conducted 'user trials' of Extended Range Anti-Submarine Rocket (ER-ASR). The test was successfully carried out from warship INS Kavaratti.

The Extended Range Anti-Submarine Rocket can achieve a range of over 8 kilometres, significantly improving the Indian Navy's anti-submarine warfare capabilities.

Defence Minister Rajnath Singh congratulated the Defence Research and Development Organisation (DRDO), Indian Navy and the industry involved in development and trials of the system. He added that the successful induction of this system will boost the striking power of the Indian Navy.

The ER-ASR is an anti-submarine weapon developed by the Defence Research and Development Organisation (DRDO). It is designed to replace the existing Russian-origin rocket guided bombs (RGBs) and offers an extended range compared to previous systems. The ER-ASR can achieve a range of over 8 kilometres, significantly improving the Indian Navy's anti-submarine warfare capabilities.

https://www.tribuneindia.com/news/india/navy-tests-long-range-anti-submarine-rocket/

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India, Brazil ink 6 pacts, boost defence and anti-terror focus

Source: The Times of India, Dt. 09 Jul 2025

India and Brazil signed six agreement, including one on combating international terrorism and transnational crime, as PM Narendra Modi held a bilateral meeting with President Luiz Inacio Lula da Silva in capital Brasilia. In his media remarks after the meeting, PM Modi underscored India's position on terrorism as he said both India and Brazil believe in "zero tolerance and zero double standards" on terrorism and supporters of terrorism.

"We believe there's no place for 'dohre maapdand' on this issue. We strongly oppose terrorists and their supporters," said PM Modi, who was conferred with Grand Collar of the National Order of the Southern Cross by Lula.

India and Brazil also signed agreements for cooperation in renewable energy, digital solutions, intellectual property and exchange of classified information. Modi said they set a target of $20 billion in bilateral trade and focused on defence cooperation too with Modi saying the two countries were looking at interlinking their defence industries in a sign of growing trust between them.

"Brazil is passionate about football and India about cricket.

Whether the ball goes to the boundary or scores a goal, when both are in the same team a partnership of $20 billion is not difficult," said Modi, adding that India-Brazil ties should be "colourful like Carnival of Brazil, full of enthusiasm like football, and bring people together like Samba".

Modi said the Global South is the main priority for both democracies and also a moral responsibility. "At a time when the world is faced with tensions and uncertainties, India-Brazil relationship is a strong pillar of balance and stability," he said, adding that both countries backed dialogue and diplomacy for resolving issues.

Modi also discussed with Lula expansion of India-MERCOSUR preferential trade agreement for the benefit of both sides.

https://timesofindia.indiatimes.com/india/india-brazil-ink-6-pacts-boost-defence-and-anti-terror-focus/articleshow/122328967.cms

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Indian Navy signs pact with BEL to boost maritime domain awareness and coastal security

Source: The Hindu, Dt. 09 Jul 2025

The Indian Navy has entered into a contract with Bharat Electronics Limited (BEL) for the execution of the National Maritime Domain Awareness (NMDA) Project, aimed at strengthening maritime and coastal security.

The contract was signed in the presence of Vice Admiral Tarun Sobti, Deputy Chief of Naval Staff, and Manoj Jain, Chairman and Managing Director of BEL.

The Indian Navy announced that the project will bring in an integrated approach to data collation, analysis and information sharing amongst the various maritime stakeholders.

Indian Navy signs contract with Bharat Electronics Limited (BEL) in the presence of Vice Admiral Tarun Sobti, Deputy Chief of Naval Staff, and Manoj Jain, Chairman and Managing Director of BEL

The project entails upgrading the existing National Command, Control, Communication and Intelligence (NC3I) Network to the NMDA Network, along with the incorporation of AI-enabled software, it said.

As part of the project, the existing Information Management and Analysis Centre (IMAC) at Gurugram, which is the nodal centre of the NC3I Network, will also be upgraded into a Multi-Agency NMDA Centre, hosting representatives from various national agencies. The project will be executed on a 'Turnkey Basis' and will be administered by the Indian Navy, it added.

https://www.thehindu.com/news/national/indian-navy-signs-pact-with-bel-to-boost-maritime-domain-awareness-and-coastal-security/article69787937.ece

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Visit Of Maj Gen Humaid Mohammed Abdullah Alremeithi, Commander, UAE Naval Forces

Source: Press Information Bureau, Dt. 08 Jul 2025

Maj Gen Humaid Mohammed Abdullah Alremeithi, Commander, UAE Naval Forces (UAEN), is in India on an official visit from 07–09 Jul 2025, aimed at strengthening maritime cooperation and bilateral ties. His visit features high level discussions and operational interactions in New Delhi.

The visit began on 08 Jul 2025, with Maj Gen Humaid Mohammed Abdullah Alremeithi laying wreath at the National War Memorial, paying tribute to India's Bravehearts who made the supreme sacrifice in the line of duty. This was followed by a ceremonial Guard of Honour and a bilateral meeting with Admiral Dinesh K Tripathi, CNS, where discussions focused on enhancing naval engagements, structured training engagements, and maritime cooperation. The UAE Navy Chief also interacted with the Chief of the Defence Staff.

The visit of Maj Gen Humaid Mohammed Abdullah Alremeithi marks a key milestone in India-UAE Naval relations, aimed at deepening cooperation and promoting shared interests in the Indian Ocean Region.

https://www.pib.gov.in/PressReleasePage.aspx?PRID=2143185

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Navy to sharpen edge in Indian Ocean region with six stealth frigates

Source: Hindustan Times, Dt. 09 Jul 2025

The Indian Navy will sharpen its edge in the Indian Ocean region with the induction of six locally made warships in around a year, a step towards strengthening its hold on the vast maritime expanse where China is steadily boosting its influence, officials aware of the matter said on Tuesday.

The Project 17A stealth frigates that the navy will commission into service by August-September 2026 are Udaygiri, Taragiri, Mahendragiri, Himgiri, Dunagiri and Vindhyagiri --- platforms that will showcase the country's warship building prowess, have an indigenous content of 75% and come with modern weapons, sensors and systems to dominate the sea battlespace, the officials said.

The navy inducted the first P-17A warship INS Nilgiri in January and is expected to commission Udaygiri in August. The ₹45,000-crore P-17A is a follow-on of the Shivalik-class (P-17) stealth

frigates and represents a significant upgrade over the previous warships. Taragiri and Mahendragiri are being built at Mumbai-based Mazagon Dock Shipbuilders Limited (MDL), and Himgiri, Dunagiri and Vindhyagiri are in different stages of construction at Kolkata-based Garden Reach Shipbuilders and Engineers (GRSE) Limited.

“There were some teething troubles when P-17A began… the first ship. The project has moved ahead smoothly thereafter. Taragiri and Mahendragiri will be delivered to the navy after the completion of necessary trials in October 2025 and February 2026,” said Jay Varghese, the P-17A in-charge at MDL.

The navy usually commissions a warship one or two months after its delivery. MDL delivered Udaygiri to the navy on July 1. The weapons on the P-17A warships include BrahMos supersonic cruise missiles and the medium-range surface-to-air missile system. Himgiri, Dunagiri and Vindhyagiri are expected to be delivered to the navy in July-end, early next year and August 2026, people aware of the matter said.

On January 15, Prime Minister Narendra Modi dedicated to the nation three locally built combat platforms, including INS Nilgiri. INS Surat, a destroyer, and Vaghsheer, the sixth and final Kalvari-class submarine -- also built at the MDL -- were commissioned on the same day. At the rare tri-commissioning, Modi said it was a significant step towards empowering the Indian Navy of the 21st century.

The development also put the spotlight on the navy’s fast-paced indigenisation and how it is working on becoming fully self-reliant by 2047, when India celebrates 100 years of independence --- around 60 warships are under construction at various Indian shipyards.

The P-17A stealth frigates have a displacement of 6,670 tonnes, are 149 metres long, can reach a top speed of 28 knots and carry 225 personnel. The new platforms will boost the navy’s operational capabilities and combat readiness in the Indian Ocean region, a strategic maritime expanse where the challenges include China’s carefully calculated power play for influence and defending the rules-based international order.

China is seeking to expand its maritime footprint in the region by setting up military bases, pushing countries to advance its maritime claims and forcing strategic concessions from vulnerable states. The Indian Navy keeps a close watch on extra-regional activity in the region, especially the presence of Chinese vessels.

https://www.hindustantimes.com/india-news/indian-navy-to-sharpen-edge-in-indian-ocean-region-with-six-stealth-frigates-101751983551689.html

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CDS Chauhan says covergence between China, Pakistan and Bangladesh has implications for regional stability

Source: Hindustan Times, Dt. 09 Jul 2025

A convergence of interests between China, Pakistan and Bangladesh may have implications for regional stability and security at a time when India faces several challenges in its neighbourhood, Chief of Defence Staff Gen Anil Chauhan said on Tuesday.

Unlike past conflicts between India and Pakistan, there was no activity along India's borders with China during the four days of hostilities in May after the launch of Operation Sindoor, Chauhan said while delivering an address on the theme of "India's evolving national security landscape" an at event organised by the Observer Research Foundation.

However, Chauhan listed other indications of the close military and security links between China and Pakistan, such as Islamabad acquiring almost 80% of its weaponry from Beijing in the past five years and the presence of representatives of Chinese original equipment manufacturers (OEMs) in Pakistan.

Referring to challenges faced by India within the neighbourhood, Chauhan pointed to economic instability in countries such as Myanmar, economic distress in nations in the Indian Ocean region that has allowed "outside powers to leverage their influence", and frequent shifts in government in South Asia.

In this context, he said: "There's a possible convergence of interest…between China, Pakistan and Bangladesh which may have security implications for regional stability and security dynamics."

Referring to Operation Sindoor, which was launched by India on May 7 to target terrorist infrastructure in Pakistan in retaliation for the Pahalgam terror attack in April, Chauhan said that "there was no unusual activity on the northern borders during the duration of this conflict".

He added, "In past conflicts, there had been trouble on the [northern] borders…But that's a fact that there was no activity on the northern borders."

Over the past five years, he said, Pakistan had acquired "almost 70% to 80% of its weapons and equipment from China". He added, "A reasonable assumption would be that Chinese OEMs will have commercial liabilities which they have to fulfill and will have people in Pakistan…That equipment has to be serviced, it has to function."

Chauhan also alluded to sharing of information between China and Pakistan, such as commercially available satellite imagery from Chinese companies. "So that's possible. How much state support will be there, it's very difficult to define. When this information turns into intelligence, it's also very difficult to define," he said.

He further said that Operation Sindoor had shown that there is scope for "further expansion of space in conventional operations". He noted that Operation Sindoor was unique as the "only example of a conflict between two nuclear weapon states".

"I think that in this particular conflict, we thought that there was a lot of space for conventional operations," Chauhan said, listing three reasons for his argument. "First is India's nuclear doctrine, that is no first use. I think that gives us strength and that contributes to creating this particular space between us and Pakistan. Second is the way we responded actually…we destroyed terrorist camps in response to terror attacks as part of a prevention strategy," he added.

While Pakistan escalated the conflict into a "fully conventional domain", it reduced its option to "raise the threshold [to a] nuclear conflict", Chauhan contended. "Thirdly, I think there is space because there was no capture of territory involved…I think that further expansion of space in conventional operations is possible in each ladder of that escalation, by taking it to newer domains of warfare like cyber, electromagnetic spectrum…So we can still expand space for conventional operations," he said.

Chauhan, however, pointed to an evolving military challenge in the shape of vulnerability to long-range weapons and long-range precision strikes. “There is currently no full-proof defence mechanism against ballistic missiles, hypersonics, cruise missiles and large-scale attacks by drones or loiter ammunition, especially when they were all used in conjunction with one another,” he said.

https://www.hindustantimes.com/india-news/cds-chauhan-says-covergence-between-china-pakistan-and-bangladesh-has-implications-for-regional-stability-101752001621339.html

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Science & Technology News

Quick fix: On India’s Research Development and Innovation scheme

Source: The Hindu, Dt. 09 Jul 2025

The Union Cabinet recently approved a ₹1-lakh crore Research Development and Innovation (RDI) scheme that aims to incentivise the private sector to invest in basic research. The scheme will primarily consist of a special purpose fund established within the Anusandhan National Research Foundation (ANRF), which will act as the custodian of funds.

The funds will be in the form of low-interest loans. The ANRF is conceived as an independent institutional body, with oversight by the Science Ministry, to allocate funds for basic research and to incentivise private sector participation in core research.

The involvement of the ANRF here is a novel move as the newly created organisation is meant to be the equivalent of a single-window clearance mechanism for funding research and development for universities and academic institutions. It is also expected to get about 70% of its budget from private sources.

In sum, through the RDI and the ANRF, the government is looking to stake the bold claim that it has played its part and that it is now up to the private sector to come forward and reverse the ratio from where the government today accounts for about 70% of India’s R&D spend. However, already incipient in the government’s tall ambitions are traces of what has caused previous such schemes to falter. The first of these is conservatism.

It turns out that a condition for availing funds is that only products that have reached a certain level of development and market potential or, what are called Technology Readiness Level-4 (TRL-4) projects, would be eligible. There are nine TRL levels, a hierarchy that was first conceived by the United States’ National Aeronautics and Space Administration (NASA) in the 1970s. TRL-1 represents a basic level of research and TRL-9 a state of advanced readiness. TRL-4 appears to be an arbitrary decision to support any promising research that has progressed halfway.

Were there such a magic sauce, venture capital industries, premised on the fickleness of predicting the ‘next big thing’, would not exist. The scheme also seems to forget that technologically advanced countries have become what they are because of their military industrial complexes — where the spectre of war incentivises the development of technology that is risky

and expensive but, over time, may prove to be of immense civilian value — examples are the Internet or the Global Positioning System.

India continues to haemorrhage scientists to the West due to the lack of opportunities commensurate with their training. Finally, it lacks a deeply skilled manufacturing sector that can make the products that scientists conceive of. Budgetary allowances cannot overnight fix that which requires major surgery.

https://www.thehindu.com/opinion/editorial/quick-fix-on-indias-research-development-and-innovation-scheme/article69787992.ece

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A quantum leap in magnetometry could simplify magnetic field measurements

Source: Press Information Bureau, Dt. 08 Jul 2025

Researchers have developed a new technology that could help measure the invisible forces of magnetism—from inside the human brain to the depths of outer space—without needing bulky shielding or ultra-quiet labs.

Magnetometers are useful devices with applications in areas ranging from fundamental physics to medical imaging and navigation. The most promising methods for magnetic field measurement are based on detecting polarization rotation of a probe light passing through alkali atoms in a very weak magnetic field.

Magnetometers based on this method, referred to as Optically pumped atomic magnetometers (OPAMs) and Spin Exchange Relaxation Free (SERF) magnetometers, typically have high sensitivity but demand sophisticated magnetic shielding and have a lower dynamic range. These requirements make them difficult to be used as a field deployable device.

Researchers at the Raman Research Institute (RRI), an autonomous institution of the Department of Science and Technology (DST), have devised a novel method for magnetometry in an all-optical quantum magnetometer that could address these challenges. Based on Raman-Driven Spin Noise Spectroscopy (RDSNS), this method could transform the way we measure magnetic fields—making the process faster, portable and precise even in noisy, real-world environments.

This method exhibits potential for field-deployable applications of magnetic field measurement with broadband capability and fast time response, extending across various scientific, industrial and exploratory fields.

RDSNS uses laser light to listen to the tiny quantum jitters of Rubidium atoms. These jittery movements, called spin noise, are random fluctuations in the spin of atoms—fundamental quantum properties like tiny bar magnets. When exposed to a magnetic field, the pattern of this spin noise shifts in predictable ways.

By shining lasers and analyzing the noise, researchers can accurately measure the magnetic field without touching or disturbing the atoms. RDSNS enhances the dynamic range considerably without significant loss of sensitivity.

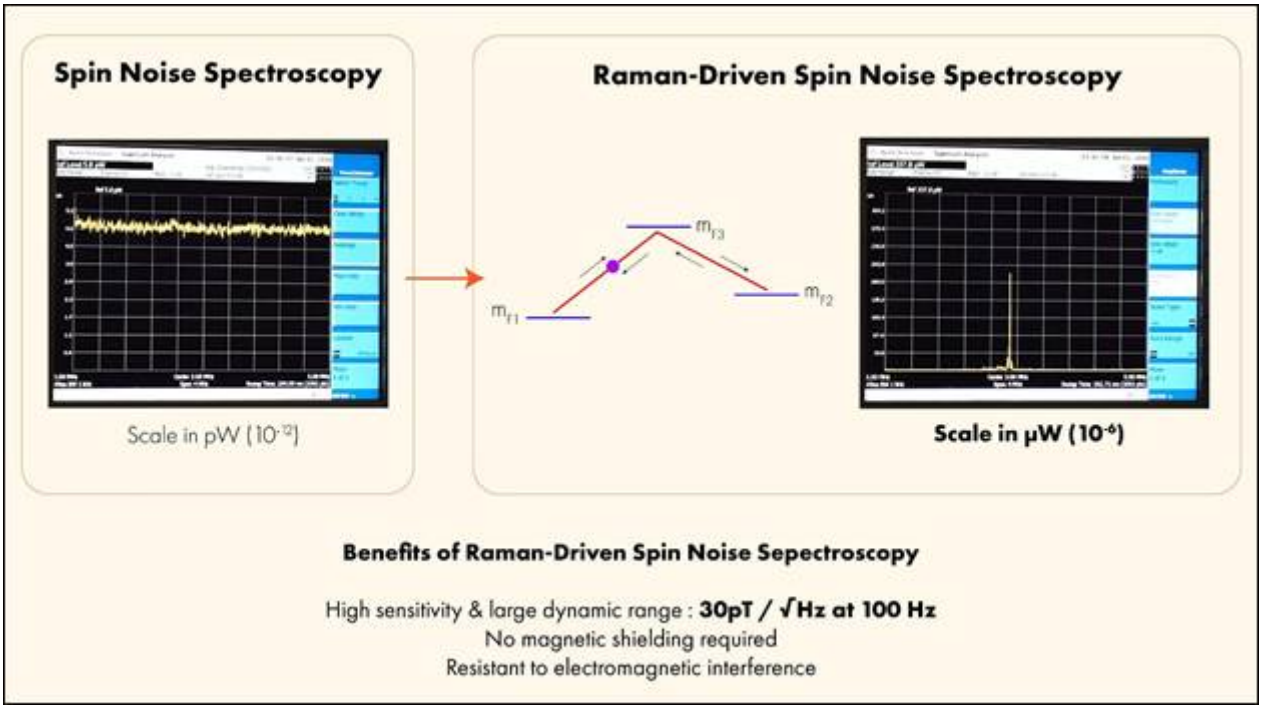

Fig 1. How RDSNS increases the magnetic resonance signal & its benefits

“We have combined high sensitivity with an unusually large dynamic range—something that is extremely difficult to achieve,” said Sayari, a PhD researcher and the study's lead author. Most magnetometers have to trade-off between these two traits. But RDSNS works beautifully across a wide range of field strengths—from very weak to very strong—without sacrificing precision.

Their setup works without magnetic shielding. That means, it can be used in outdoor, industrial and clinical environments where other magnetometers fail. It is compact, fully optical (no moving parts) and immune to electrical interference.

Their device achieved a sensitivity of 30 picotesla per root hertz at 100 Hz—approaching the sensitivity of bulky lab systems—while fitting into a system that could one day be portable.

The technique yields similar sensitivity even under the presence of external stray fields broadening the applicability of RDSNS to many more applications, like deployable atomic magnetometers that can run under environments with fluctuating magnetic fields. The technique is also insulated against interference due to stray RF noise and mechanical vibrations, typical issues for other magnetometer technologies.

The method could revolutionize how we scan the brain and nervous system—offering an alternative to MRI that is silent, compact, and non-invasive. Prospectors could use these sensors to detect underground magnetic variations hinting at mineral deposits. In space, where weight and robustness matter, a portable, shield-free magnetometer is invaluable for studying magnetic fields around planets and stars.

The relevant research article was recently published in the journal IEEE Transactions on Instrumentation and Measurement through an initiative under the National Quantum Mission of DST.

“Our approach reflects India’s growing ambition in the global quantum technology race,” said Dr. Saptarishi Chaudhuri, who leads the Quantum Mixtures (QuMIX) lab at RRI. “We are using atoms —nature’s quantum building blocks—to design next-generation sensors.”

The RRI team envisions using phase-locked lasers to further enhance stability, integrating squeezed light to reduce quantum noise and building miniaturized versions using MEMS technology—tiny mechanical systems etched onto chips. In the long run, RDSNS might even help probe deep quantum mysteries, such as how atoms interact or how complex quantum phases emerge.

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