

मई
May
2026

खंड/Vol. : 51

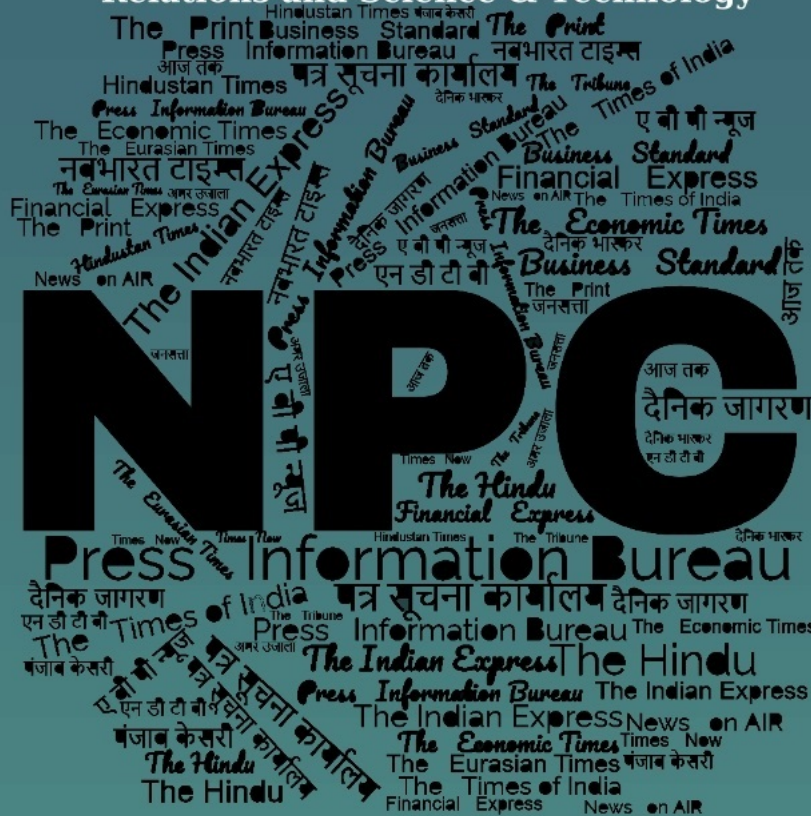
अंक/Issue : 094

21/05/2026

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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DRDO News

यूएवी से दगी जाने वाली मिसाइल का परीक्षण

Source: Punjab Kesari, Dt. 21 May 2026

डीआरडीओ ने मानव रहित हवाई यान (यूएवी) से दागी जाने वाली सटीक निर्देशित मिसाइल (यूएलपीजीएम)-वबी3 के 'हवा से जमीन' और 'हवा से हवा' मोड में विकास संबंधी अंतिम परीक्षण सफलतापूर्वक पूरे कर लिए हैं। रक्षा मंत्रालय ने बताया कि ये परीक्षण आंगघ प्रदेश के कुरनूल के निकट डीआरडीओ के परीक्षण क्षेत्र में एकीकृत ग्राउंड कंट्रोल सिस्टम (जीसीएस) का उपयोग करके किए गए, जिसके माध्यम से यूएलपीजीएम हथियार प्रणाली का नियंत्रण किया गया जिस में अत्याधुनिक प्रौद्योगिकियों का इस्तेमाल किया गया है, जिससे तैयारी और प्रक्षेपण संबंधी प्रक्रियाओं का स्वचालन संभव हुआ। मंत्रालय ने कहा, डीआरडीओ ने यूएलपीजीएम-वी3 के अंतिम विकास परीक्षण 'हवा से जमीन' और 'हवा से हवा' मोड में सफलतापूर्वक पूरे कर लिए हैं।

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Defence News

India, Italy upgrade ties; Special strategic partnership announced: Trade to corridor, defence to ports

Source: The Indian Express, Dt. 21 May 2026

Elevating their bilateral ties to a "special strategic partnership", India and Italy Wednesday set a trade target of 20 billion euros by 2029, agreed on a defence industrial roadmap, and concluded pacts on critical minerals, countering money laundering and terror financing. These decisions were taken after Prime Minister Narendra Modi held talks with Italian Prime Minister Giorgia Meloni in Rome. Italy was the final stop on Modi's six-day tour of Europe which took him to Norway for the India-Nordic summit and on bilateral visits to Sweden and the Netherlands. From tech to innovation, defence to green energy, India is deepening ties with Europe amid turbulence in the global order.

The Prime Minister's visit to Italy reaffirms a strategic partnership in motion, coming as it does after intense leader-level engagement, anchored by the Joint Strategic Plan of Action 2025-29, the operational roadmap for the partnership. Italy increasingly views India not just as a market, but as a major power and an indispensable partner for Europe. Its championing of IMEEC (India-Middle East-Europe Economic Corridor) as a founding member makes it the western anchor of the corridor. The proposed IMEEC will not just ensure stability of supply chains but will also boost India's energy security. Discussing the geopolitical situation, Meloni said Italy and India will continue to play their part at every level, often working in tandem, to contribute to peace and help restore stability.

"Italy and India naturally share a common vision regarding many of the major challenges of our time: international stability, the upholding of the rule of law, economic security, the resilience of

value chains, the promotion of peace, and inclusive development. We also discussed many of the complex scenarios confronting our era – specifically the situation in Ukraine and our shared commitment to achieving a just and lasting peace – as well as the crisis in Iran. We exchanged views with the shared hope that peace negotiations might move forward and reach a positive conclusion, even within a context that we clearly recognise as highly precarious.”

Modi said, “We have been in constant contact regarding Ukraine, West Asia, and other tensions. India’s stance is clear that all problems should be resolved through dialogue and diplomacy.” Referring to the near closure of the Strait of Hormuz, Meloni said, “Regarding freedom of navigation – the restoration of which we are both actively working toward – we are two nations that need no reminding of just how vital this principle is to our interests. We also addressed the Indo-Pacific region, where we naturally align with the Indian vision of an Indo-Pacific that is free, open and inclusive.”

Modi said, “Over the past nearly three and a half years, I have had the opportunity to meet Prime Minister Meloni several times. This reflects the close cooperation and harmony between India and Italy. Under her leadership, our relations have gained new momentum, new direction, and new self-confidence. I am pleased that we are announcing the Special Strategic Partnership as we upgrade our relations.”

Meloni said, “I truly believe it is a historic day for the relations between our two nations. My friend Narendra Modi has been leading India since 2014 but today this is his first bilateral mission to Italy... Today with this visit, not only are we bridging this gap, but together we have decided to revitalise our relations. This visit is the apex of a path that we have built together with determination to strengthen the ties... We are further strengthening our relation all the way up to the special strategic partnership, the highest ever reached in the relations between our two nations... It’s safe to say that now Italy and India are closer than they have ever been.”

“We have also created an honest friendship based on respect and mutual trust. I have personally learned to appreciate the vision, the pragmatism, and the leadership of the Prime Minister, as shown by how popular he is amongst his citizens after many years in government, and I think that this friendship of ours, this relationship of ours has very much helped us to work so swiftly on strengthening our bilateral relations”.

She said they want to increase trade from 14 billion euros to 20 billion euros. “This is a very ambitious target, which can be achieved also by taking advantage of the potential stemming from the free trade agreement signed between the EU and India.”

Modi said Italy is renowned worldwide for design and precision and India’s identity is that of a powerhouse of scale, talent and affordable innovation. “We will move forward on the principle of Design and Develop in India and Italy and Deliver for the World”, he said.

The two sides agreed on a defence industrial roadmap which had long been an Italian request. In the wake of corruption allegations over the AgustaWestland deal, Italian defence companies had been barred from the Indian defence market. But that is witnessing a change now. “Our Defence Industrial Roadmap has paved the way for co-development and co-production,” Modi said.

The two countries also signed a pact on maritime transport and ports to strengthen India’s maritime infrastructure. “As maritime powers, close cooperation between India and Italy in the field of connectivity is natural. We will work together on shipping, ports modernisation, logistics and the blue economy,” he said.

Meloni echoed his remarks: “We are two peninsulas, two logistics platforms, which are projected in crucial areas of the world, the Mediterranean and Indo-Pacific area... strengthening the interconnection between these two important areas is of extreme importance. That’s the reason why we wanted to further develop IMEEC which is the infrastructure corridor, economic corridor between Europe, Middle East and India, which was established during the G20 summit. This initiative we strongly believe in, because we think that it can unleash a wonderful potential for our trade, for our businesses, and our relations.”

“Our goal is, naturally, to leverage the complementarities between our respective economic fabrics across many other sectors – sectors we have discussed at length today, as well as during last night’s events. From advanced manufacturing to infrastructure, from energy to the space economy, defence stands out as a key area of cooperation where we are currently investing significant and effective effort. Critical minerals, agribusiness, maritime transport, tourism, and culture – for two great civilisations spanning millennia – also represent opportunities for us to grow together,” she said.

The two sides also signed pacts on mobility of Indian nurses to Italy, a roadmap on higher education and research, pacts on agriculture, export of Indian seafood to Italy, pact on Ayurveda, research in climate change among others. Capping her statement on the broader ties, Meloni said, “There is an Indian word that captures this sentiment perfectly: Parishram. It signifies ‘hard work’, ‘constant commitment’, and ‘diligent effort’. A word that I am told is widely used in India, and which, let’s give it a try, often appears in an equally popular proverb: Parishram safalta ki kunji hai. This means: Hard work is the key to success. Well, that is precisely how we are accustomed to building our relationships – through hard work that, ultimately, leads to success.”

<https://indianexpress.com/article/india/strategic-partnership-india-italy-narendra-modi-giorgia-meloni-trade-defence-10699996/>

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India, South Korea agree to deepen defence ties during Rajnath Singh’s Seoul visit

Source: The Indian Express, Dt. 21 May 2026

Defence Minister Rajnath Singh on Wednesday met his South Korean counterpart, Ahn Gyu Back, in Seoul, where both sides reviewed the entire spectrum of defence cooperation and discussed ways to further expand collaboration in areas such as industry, production, maritime security, emerging technologies, military exchanges, logistics and regional security.

He also met the South Korean Minister for Defence Acquisition Program Administration, Lee Yong-chul, and both agreed to harness the symbiotic efforts to create avenues for joint development, production, and exports.

In a statement, the Ministry of Defence said that both sides acknowledged the growing convergence between India’s Act East Policy and the RoK’s regional strategic vision, “reiterating their commitment to strengthening defence ties in line with the shared objectives of maintaining a free, open, inclusive and rule-based Indo-Pacific.”

It added that the Memoranda of Understanding (MoUs) were inked in key areas of defence cooperation, reflecting the expanding scope and depth of the bilateral partnership. Agreements

were exchanged on promoting cooperation in the field of Defence Cyber; training between India's National Defence College and Korea National Defence University; and UN Peacekeeping Cooperation, making the partnership stronger and multidimensional.

In a post on X, Singh said the meeting was highly productive. Talking about the various agreements exchanged, he said this makes the India-South Korea partnership stronger and multidimensional. "Looking forward to strengthening the special strategic partnership between our nations," he said.

Raksha Mantri also met Minister Defense Acquisition Program Administration, Republic of Korea Mr Lee Yong-chul, with both leaders agreeing to harness the symbiotic efforts to create avenues for joint development, joint production and joint exports. A roadmap to unlock the potential of the India-Korea Defence Innovation Accelerator Ecosystem (KIND-X) to synergise the innovation ecosystems of the two countries was discussed.

Singh is currently on an official visit to South Korea and Vietnam. Earlier in the day, he laid a wreath at the National Cemetery of Korea and paid homage to the soldiers who made the supreme sacrifice in the service of their nation. He later chaired the India-RoK Defence Industry Business RoundTable, which brought together senior government officials and leading defence industry representatives from both countries.

"The interaction provided an important platform for exploring new opportunities in defence manufacturing, co-development, co-production and supply chain partnerships," the Ministry statement noted, adding that he invited Korean defence companies to strengthen engagement with Indian industry and contribute towards long-term mutually beneficial collaboration.

He also highlighted that defence manufacturing is no longer confined only to conventional platforms and equipment, as modern defence ecosystems are powered by advanced electronics, artificial intelligence, autonomous systems, cyber technologies, sensors, semiconductors, quantum technologies, advanced materials, and space-based capabilities. He added that the future of defence will increasingly depend upon the ability to innovate rapidly and integrate technologies across multiple domains. This, he stated, is precisely where India and RoK possess enormous potential for collaboration.

During the event, two agreements between L&T, India and Hanwa Co Ltd were also signed, signalling a promising future for India-Korea defence innovation and technology partnership. The agreements are expected to facilitate enhanced collaboration between the defence industries of both countries and promote technology cooperation and capacity building. He also said Operation Sindoor was proof that India will not tolerate terrorism in any form.

"As a responsible nuclear power, we firmly adhere to a policy of No First Use. However, there are times when people mistake our restraint and commitment to peace for weakness. While India remains committed to its No First Use policy, it will not tolerate any form of nuclear blackmail. This is New India," he said.

In a statement, the Ministry of Patriots and Veterans Affairs of South Korea said it will strengthen cooperation with India's Ministry of Defence on international veterans affairs projects, including honouring veterans and promoting exchanges among descendants of veterans, with India having participated in the Korean War as a medical support nation.

It said that Minister Kwon Oh-eul and Singh will sign a memorandum of understanding (MoU) on 'International Veterans Affairs Cooperation between the Republic of Korea and India' on Thursday

at the Indian War Memorial at Imjingak in Paju, Gyeonggi Province. The statement noted that during the Korean War, India dispatched 627 medical personnel from the 60th Parachute Field Ambulance, the largest contingent among the medical support nations.

It said that under the MoU, the two governments will cooperate in areas including: collecting materials related to the Korean War and honouring veterans; exchange and cooperation programs for descendants of veterans and future generations; academic, educational, and cultural projects highlighting the significance of participation in the war; and the establishment of commemorative facilities.

Following the signing ceremony, both Ministers will also attend the unveiling ceremony for Korea's first Indian War Memorial. The memorial was built by India's Ministry of Defence to commemorate the 75th anniversary of India's participation in the Korean War.

Spanning approximately 25 square meters, it features busts of Lieutenant Colonel A.G. Rangaraj, commander of the 60th Parachute Field Ambulance, and General K.S. Thimayya, who led prisoner repatriation efforts, along with three memorial stones honouring India's wartime contributions. These decisions were

<https://indianexpress.com/article/india/india-south-korea-defence-cooperation-rajnath-singh-seoul-visit-10699576/>

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Delhi, Seoul to work on air defence and energy weapons systems

Source: The Times of India, Dt. 21 May 2026

India and South Korea on Wednesday signed two memorandums of understanding (MoUs) related to self-propelled air defence systems and directed energy weapon systems during defence minister Rajnath Singh's visit to Seoul, a defence source told TOI. "Both future-oriented projects have a strong make-in-India focus," the source said.

Two agreements between India's Larsen & Toubro (L&T) and South Korea's Hanwa Co Ltd were signed. The pacts are expected to facilitate enhanced collaboration between defence industries of both countries and promote technology cooperation and capacity building, according to a defence ministry statement.

Hanwa and L&T had earlier joined hands to provide the Indian Army with 100 K9 Vajra-T 155mm tracked self-propelled howitzers under a 2017 contract. Later, an additional order for 100 more howitzers was finalised.

Besides key agreements, Rajnath and minister of national defence for South Korea Ahn Gyu-back held comprehensive bilateral discussions, reviewed the entire spectrum of defence cooperation and discussed ways to further expand collaboration in areas such as industry, production, maritime security, emerging technologies, military exchanges, logistics and regional security.

Both sides acknowledged the growing convergence between India's Act East Policy and South Korea's regional strategic vision, reiterating their commitment to strengthening defence ties in line with the shared objectives of maintaining a free, open, inclusive and rule-based Indo-Pacific.

Agreements were also signed on promoting cooperation in the field of defence cyber; training between India's National Defence College and Korea National Defence University; and UN peacekeeping cooperation, making the partnership stronger and multidimensional.

Addressing the business leaders, Rajnath invited Korean defence companies to strengthen engagement with Indian industry and contribute towards long-term mutually beneficial collaboration. He said the future of defence will increasingly depend upon the ability to innovate rapidly and integrate technologies across multiple domains. This, he stated, is precisely where India and South Korea possess enormous potential for collaboration. Earlier, the defence minister laid a wreath at the Korean War Cemetery in Seoul to pay homage to the brave soldiers who made the supreme sacrifice during the Korean War.

Rajnath also met minister defence acquisition program administration of South Korea Lee Yong-chul with both leaders agreeing to harness the symbiotic efforts to create avenues for joint development, joint production and joint exports.

Interacting with the Indian diaspora in South Korea, Rajnath underscored the rise in India's global stature due to unprecedented progress under the leadership of PM Modi. "12-13 years ago, India was perceived as a weak nation, but, today, due to the transformation the country has undergone in the last decade, the world carefully listens to what we have to say. We're now emerging as a global power that offers solutions to the world. Whether internal or external security, our policy has undergone a fundamental transformation; it has become assertive, bold, consistent, and decisive," he said.

The minister described Operation Sindoor as a testament to India's transformation into a strong, confident and capable nation. "The operation was proof that India will not tolerate terrorism in any form. As a responsible nuclear power, we firmly adhere to a policy of No First Use. However, there are times when people mistake our restraint and commitment to peace for weakness. While India remains committed to its No First Use policy, it will not tolerate any form of nuclear blackmail. This is New India," he said.

<https://timesofindia.indiatimes.com/india/delhi-seoul-to-work-on-air-defence-and-energy-weapons-systems/articleshow/131237570.cms>

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300 किलोमीटर से दूर दुश्मन के लक्ष्य को नष्ट कर देगा 'सूर्यस्र'

Source: Dainik Jagran, Dt. 21 May 2026

भारत के शक्षा क्षेत्र में आत्मनिर्भरता और 'मेक इन इंडिया' को बढ़ावा देने वाली एक बड़ी कामयाबी सामने आई है। ओडिशा के चांदीपुर स्थित इंटीग्रेटेड टेस्ट रेंज में निजी क्षेत्र की प्रमुख रक्षा कंपनी नीबे लिमिटेड ने लंबी दूरी के 'सूर्यस्र' राकेट सिस्टम का सफल परीक्षण किया। यह परीक्षण भारतीय सेना की ओर से कंपनी को दिए गए खरीद आर्डर के तहत किया गया है। 8 और 9 मई को हुए इन परीक्षणों में 50 और 300 किलोमीटर मारक क्षमता वाले राकेटों ने लक्ष्य परसटीक प्रहार कर अपनी क्षमता साबित की।

कंपनी के अनुसार, 150 किलोमीटर रेंज वाले राकेट ने 1.5 मीटर की सर्कुलर एरर प्राबेबिलिटी (सीईपी) हासिल की, जबकि 300 किलोमीटर रेंज वाले संस्करण ने दो मीटर सीईपी दर्ज की। बता दें कि सीईपी किसी भी

राकेट या मिसाइल प्रणाली की सटीकता का प्रमुख मानक होता है। जो लक्ष्य के आसपास गिरने वाले दायरे को दर्शाता है। इतनी कम सीईपी इस णाली कीसटीक मारक क्षमता को दर्शाती है।



Fig: सूर्यस्र के परीक्षण का दृश्य

सूर्यासत्र प्रणाली को इस तरह विकसित किया गया है कि यह लंबी दूरी से दुश्मन के महत्वपूर्ण ठिकानों पर हमला कर सके, जिससे प्रक्षेपण प्लेटफार्म सुरक्षित दूरी पर रहकर भी प्रभावी कार्रवाई कर सके। 'सूर्यास्र' प्रणाली इजरायली रक्षा कंपनी एलबिट सिस्टम्स की प्रिसिजन एंड यूनिवर्सल लान्चिंग सिस्टम (पल्स) तकनीक पर आधारित भारतीय संस्करण है, जिसे नीबे लिमिटेड के साथ मिलकर विकसित किया गया है। इस परियोजना में 'मेक इन डिया! और 'आत्मनिर्भर भारत' और तकनीकी हस्तांतरण को विशेष रूप से शामिल किया गया है।

बता दें कि भारतीय सेना ने इस वर्ष जनवरी में लगभग 293 करोड़ रुपये के आपातकालीन खरीद आदेश के तहत इस प्रणाली की खरीद को मंजूरी दी थी, जिसमें लांचर, सप्लाइ-कम-लोडर वाहन, राकेट, पुर्जे और तकनीकी सहायता शामिल है।

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Private defence company tests rocket at Chandipur

Source: The Times of India, Dt. 21 May 2026

A Pune-based defence company has successfully carried out firing demonstrations of the EXTRA and Predator Hawk "Suryastra" rockets with ranges of 150km and 300km, respectively, at the Integrated Test Range in Chandipur, Odisha, on May 18 and 19, reports Surendra Singh.

Suryastra is India's first indigenous universal multi-calibre rocket launcher system, designed for precision surface-to-surface deep strikes against hostile targets. It bridges the gap between traditional field artillery and heavy ballistic missiles, offering the armed forces a flexible, rapid-response and cost-effective precision weapon system. NSE-listed NIBE Ltd had received a purchase order from Indian Army under emergency procurement for supply of Suryastra launcher and rockets.

<https://timesofindia.indiatimes.com/india/private-defence-company-tests-rocket-at-chandipur/articleshow/131237578.cms>

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Multilateral military exercise Pragati 2026 begins in Meghalaya

Source: The Pioneer, Dt. 21 May 2026

Multilateral military exercise PRAGATI 2026 commenced today at Umroi Military Station, Meghalaya, with the participation of 12 friendly nations, namely Bhutan, Cambodia, Indonesia, Laos, Malaysia, Maldives, Myanmar, Nepal, Philippines, Seychelles, Sri Lanka and Vietnam. The contingents were accorded a warm and traditional welcome by the Indian Army on their arrival, reflecting India's rich cultural heritage and hospitality.

PRAGATI, which stands for : Partnership of Regional Armies for Growth and Transformation in the Indian Ocean Region, is being conducted in the spirit of equality, friendship and mutual respect. The exercise provides a common platform for participating armies to engage in professional exchange, learn from one another's experiences and build closer military-to-military ties.

The opening ceremony was attended by senior military officials and dignitaries. In his address, Major General Sunil Sheoran, Additional Director General of Infantry, Indian Army, welcomed all contingents and highlighted the importance of collective engagement in addressing contemporary security challenges.

He encouraged all participants to engage with openness, mutual respect and a willingness to learn from one another's experiences, while highlighting that the strengths and perspectives brought by each nation would contribute meaningfully towards achieving the collective objectives of the exercise.

The objectives of the exercise include enabling seamless coordination among participating nations in joint operations and identifying common areas of cooperation; sharing expertise and establishing an institutionalised mechanism for exchange of best practices evolved through individual experiences; strengthening defence ties and camaraderie through joint training and cultural exchange; and evolving common concepts for management and sharing of intelligence in a multinational environment.

The two-week exercise will focus on counter-terrorism operations in semi-mountainous and jungle terrain. The training programme will include joint planning exercises, tactical-level drills and coordinated operations designed to improve adaptability, endurance and tactical proficiency of participating troops.

Emphasis will be laid on physical fitness, discipline and coordination while operating in challenging conditions. As part of the exercise, Indian technology and defence companies will showcase indigenous equipment and innovations under the Atmanirbhar Bharat initiative, providing a platform for knowledge exchange and highlighting India's growing capabilities in defence production, innovation and self-reliance.

Exercise PRAGATI 2026 is expected to further strengthen military-to-military cooperation, deepen professional bonds and contribute towards a shared approach to common security challenges among regional partners.

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IOS SAGAR (INS Sunayna) returns to Kochi after a landmark deployment

Source: Press Information Bureau, Dt. 20 May 2026

Indian Navy marked the successful culmination of the landmark IOS SAGAR deployment with the flag-in of INS Sunayna at Kochi on 20 May 2026, following an extensive multinational deployment across the Indian Ocean Region (IOR). The joint mission with 38 personnel from 16 partner nations stands as a significant demonstration of India's emergence as the Preferred Security Partner in the region and its enduring commitment towards strengthening maritime collaboration, interoperability, and capacity building amongst IOR navies.

The deployment, jointly undertaken by the Indian Navy and partner nations (Bangladesh, Indonesia, Kenya, Malaysia, Mauritius, Maldives, Mozambique, Myanmar, Seychelles, Singapore, South Africa, Sri Lanka, Tanzania, Thailand, Timor Leste, and United Arab Emirates) represents one of the most comprehensive multinational operational engagements conducted in the region.

Embodying the spirit of 'One Ocean, One Mission', IOS SAGAR showcased Indian Navy's commitment towards fostering an inclusive, cooperative, and rules-based maritime order through sustained regional engagement and operational collaboration.

The mission also reflects the vision articulated by Prime Minister Shri Narendra Modi through India's maritime initiatives SAGAR - Security and Growth for All in the Region, and MAHASAGAR - Mutual and Holistic Advancement for Security and Growth Across Regions, aimed at ensuring collective security, regional stability and cooperative maritime growth across the Indian Ocean Region.

INS Sunayna was ceremonially received with water cannon salutes on her return to Kochi harbour. Escorted by Naval Fast Interceptor Craft, the ship was warmly received by senior naval officers at Southern Naval Command. VAdm Sameer Saxena, Flag Officer Commanding-in-Chief, Southern Naval Command, was the Chief Guest for the flag-in ceremony of IOS Sagar. On arrival of the ship, FOCINC South commended the multinational crew for their professionalism, seamless integration, and exceptional teamwork throughout the prolonged deployment.

Addressing personnel during the ceremony, FOCINC South highlighted that IOS SAGAR reflects Indian Navy's proactive approach towards facilitating interoperability between partner navies and enhancing coordinated maritime responses to emerging security challenges in the IOR. He emphasised that sustained collaborative engagement and operational synergy amongst regional maritime forces are essential to ensure a secure, stable, and prosperous maritime environment.

He also underscored that the deployment significantly enhanced interoperability, operational coordination, and mutual understanding through joint training, professional exchanges, and collaborative operational activities. Such engagements strengthen the collective capability of regional navies to effectively counter non-traditional maritime threats including piracy, illegal fishing, arms and narcotics trafficking, smuggling, and other unlawful activities at sea.

IOS Sagar was flagged off from Mumbai on 02 April 2026 by Hon'ble Raksha Rajya Mantri Shri Sanjay Seth. During the deployment, the ship undertook port calls at Malé, Phuket, Jakarta, Singapore, Yangon, Chattogram, and Colombo.

The deployment featured a wide spectrum of collaborative engagements including passage exercises, cross-deck interactions, Subject Matter Expert Exchanges, coordinated seamanship

evolutions, maritime security discussions, and professional interactions with partner navies and maritime agencies. These engagements reinforced shared commitment towards maintaining maritime safety, security, and freedom of navigation in the Indian Ocean Region.

Prior to the deployment, the multinational crew underwent comprehensive harbour training at Southern Naval Command, Kochi, covering seamanship, navigation, firefighting, damage control, communication procedures, VBSS operations, and advanced Bridgeman ship. The crew also participated in the IONS Maritime Exercise IMEX 2026 Table Top Exercise at Kochi, further enhancing professional interoperability and operational preparedness.

The successful completion of IOS SAGAR marks a defining milestone in India's maritime outreach and regional engagement initiatives, reaffirming Indian Navy's continued commitment towards building trusted partnerships, enhancing collective maritime capability, and promoting cooperative security across the Indian Ocean Region.

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नई पीढी के युद्धपोत 'संघमित्रा' का जलावतरण

Source: Dainik Jagran, Dt. 21 May 2026

गार्डन रीच शिपबिल्डर्स एंड इंजीनियर्स (जीआरएसई) ने बुधवार को भारतीय नौसेना के लिए अपने पहले नेक्स्ट जेनरेशन आफशोर पेट्रोल वेसल (एनजीओपीवी) संघमित्रा का जलावतरण किया। कोलकाता स्थित शिपयार्ड में बैटिक मंत्रोच्चार के बीच वाइस एडमिरल संजय वात्सायन की पत्नी सरिता वात्सायन ने इस युद्धपोत का जलावतरण किया।

जीआरएसई नौसेना के लिए ऐसे चार अत्याधुनिक युद्धपोत बना रहा है। 'संघमित्रा' नाम सम्राट अशोक की पुत्री से प्रेरित है, जिन्होंने भगवान बुद्ध के संदेश के प्रचार के लिए श्रीलंका की यात्रा की थी। करीब 113 मीटर लंबे और 3000 टन वजनी ये युद्धपोत 20 नाट्स तक की रफ्तार से चल फगे। इनमें 8500 नाटिकल मील तक समुद्र में लगातार अभियान चलाने की क्षमता होगी। युद्धपोत का

उपयोग समुद्री निगरानी, तस्करी और घुसपैठ रोकने, एंटी पाइरेसी अभियान, खोज एवं बचाव कार्य और आपदा राहत अभियानों में किया जाएगा। वाइस एडमिरल संजय वात्सायन ने कहा कि भारतीय नौसेना अब केवल युद्ध के लिए ही नहीं, बल्कि समुद्री क्षेत्र में स्थिता और सहयोग बनाए रखने के लिए भी तैयार है।

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Launch of Sanghmitra, Yard 3039 (Next Generation Offshore Patrol Vessel) at M/s GRSE, Kolkata

Source: Press Information Bureau, Dt. 20 May 2026

Yard 3039 (Sanghmitra), Next Generation Offshore Patrol Vessel (NGOPV), was launched at M/s GRSE, Kolkata on 20 May 2026 by Mrs Sarita Vatsayan, in the presence of VAdm Sanjay Vatsayan, Vice Chief of the Naval Staff. The event was conducted with full naval honours and ceremonial splendour, reflecting the rich traditions and ethos of the Indian Navy. Senior dignitaries from the Indian Navy, Ministry of Defence, and GRSE attended the occasion.

The construction of 11 NGOPVs is being undertaken concurrently at two shipyards (GSL, Goa and GRSE, Kolkata). These indigenously designed and built ships will augment the existing OPVs/ NOPVs for multi-domain operations, such as surveillance and defence in area of interest, search and rescue, protection of offshore assets, HADR, and anti-piracy missions.

These ships derive their names from India's heritage, with this ship being named 'Sanghmitra', after the daughter of King Ashoka. The crest design of the ship depicts the constellation of Ursa Major and a red and white coloured lighthouse.

This is yet another significant milestone in Indian Navy's pursuit towards indigenous shipbuilding and is in consonance with Government of India's vision of Aatmanirbhar Bharat and Make in India initiative.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=2263508®=3&lang=1>

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Science & Technology News

New study paves way for solving the mysteriously high temperature of solar corona

Source: Press Information Bureau, Dt. 20 May 2026

A novel way to detect hidden turbulence in the Sun's outer atmosphere or corona could help scientists gain new insights into the long-standing mystery of why the corona is much hotter than the Sun's visible surface.

The Sun's outer atmosphere, the corona, is filled with magnetic structures that constantly sway as waves travel along them. Among the most common of these are propagating transverse magnetohydrodynamic (MHD) waves, often described as Alfvénic or kink waves. These waves make coronal structures oscillate sideways as they move outward along these magnetic structures.

Spectroscopically, such waves are known to produce alternating red and blue Doppler shifts, signatures of plasma moving toward and away from the observer due to transverse motions perpendicular to the magnetic field. However, whether these propagating transverse waves can also modify the shape of coronal spectral lines, producing measurable asymmetries in otherwise Gaussian profiles, has not yet been clearly established observationally.

Previous observations of the corona and transition region have revealed ubiquitous blueward asymmetries in spectral lines. These have largely been interpreted as signatures of upward flows, jets, or mass motions along magnetic field lines. In contrast, transverse waves are often considered nearly incompressible and therefore not expected to produce strong line profile asymmetries. As a result, their potential contribution to spectral asymmetries has received far less attention.

In a recent study by Aryabhata Research Institute of Observational Sciences, (ARIES) Nainital, an autonomous institute of the Department of Science and Technology (DST), and Indian Institute of Technology (IIT) Delhi, advanced three-dimensional MHD simulations combined with forward

modeling were used to investigate this question. The researchers Ms. Ambika Saxena, PhD student at ARIES and Prof. Vaibhav Pant from the Department of Physics, IIT, Delhi, performed simulations of an open-field coronal region containing density inhomogeneities across its transverse cross-section. Transverse waves were driven at the lower boundary and allowed to propagate upward along the structured magnetic field. Using forward modeling, they then computed how the plasma emission would appear in a commonly observed coronal spectral line, Fe XIII 10749 Å.

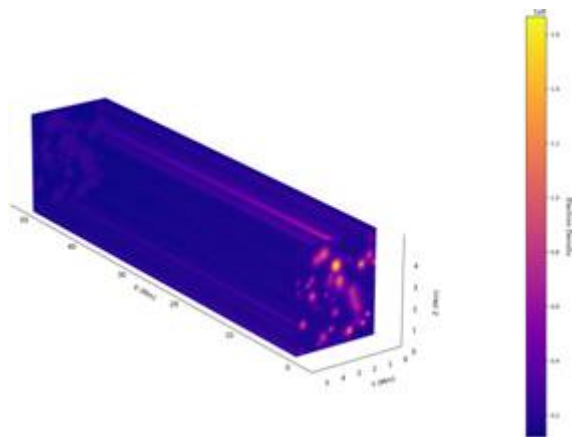


Figure 1: Starting point of the simulation. This image shows how the plasma is arranged at the beginning. The upward direction corresponds to height in the solar atmosphere, while the patchy pattern shows variations in density across the structure.

The simulations in the study published in *The Astrophysical Journal*, revealed a consistent pattern. As transverse waves propagate along a structured magnetic plume, the plasma within the structure does not move uniformly. The cross-section of the plume contains density variations, and as the wave evolves, it generates increasingly fine-scale structure through phase mixing. This process leads to the development of turbulence, producing small-scale velocity and density structuring within the magnetic structure.

Because the solar corona is optically thin, emission from many parts of the structure overlaps along the line of sight. Different regions move with different velocities at the same time. When this emission is combined, the resulting spectral line is no longer perfectly symmetric. Instead, it develops alternating blue and red wing asymmetries that switch in time and height as the wave travels.

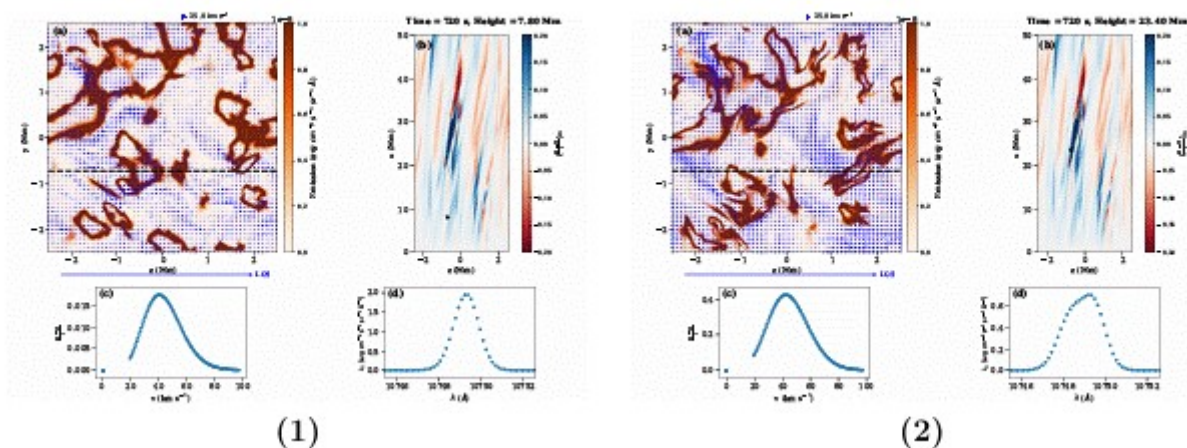


Figure 2: Evolution of spectral asymmetry with radial height. Panels (1) and (2) show snapshots at two different heights in the simulated corona. The maps illustrate how plasma moving at different speeds contributes to the observed signal. These patterns reflect the complex motions generated by the propagating wave.

Importantly, these asymmetries arise naturally from the combined effects of transverse wave dynamics, cross-sectional inhomogeneities, and the development of wave-driven turbulence. The simulated asymmetries can reach up to about 20 percent of the line peak intensity, with apparent secondary velocities of 30 to 40 km s⁻¹. Moreover, the alternating red–blue pattern itself propagates outward at speeds consistent with the wave.

These results demonstrate that propagating transverse MHD waves alone can generate systematic alternating spectral asymmetries. With the high spatial and spectral resolution now available from facilities such as DKIST, observations of this phenomenon may soon become possible, offering a new diagnostic of wave-driven dynamics in the solar corona.

Publication link: <https://iopscience.iop.org/article/10.3847/1538-4357/ae2482>

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