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# समाचार पत्रों से चयित 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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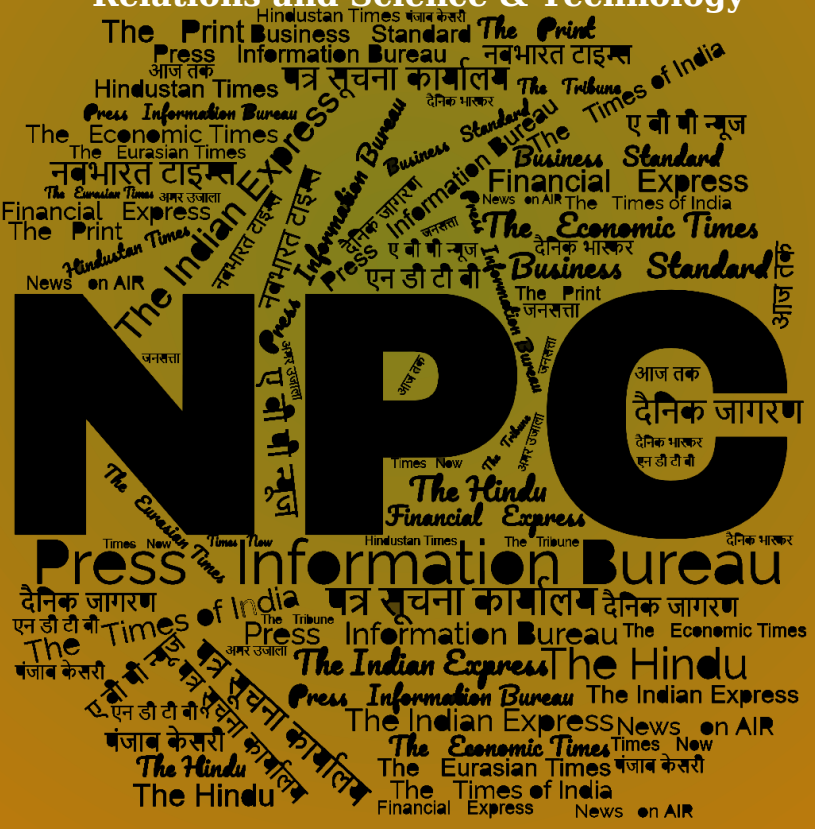


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Press Information Bureau
Government of India

**Ministry of Defence**

***Wed, 31 Jan 2024***

# Defence Secretary Shri Giridhar Aramane Co-chairs 12th India-Oman Joint Military Cooperation Committee Meeting at Muscat

**India & Oman ink MoU on procurement of Defence Material and Equipment**

Defence Secretary Shri Giridhar Aramane co-chaired the 12th Joint Military Cooperation Committee (JMCC) meeting with Secretary General, Ministry of Defence, Oman Dr. Mohammed Bin Naseer Bin Ali Al Zaabi in Muscat on 31 Jan 2024.

During the meeting, both sides reviewed and appreciated the robust defence cooperation between India and Oman. The JMCC meeting delved into many new areas of cooperation in the fields of training, Joint exercise, Information sharing, Oceanography, Ship Building & MRO, that would build mutual trust and interoperability between militaries of both nations. Further, they also exchanged views on regional and global issues of shared interest. Both sides discussed effective and practical initiatives to further boost bilateral Defence engagements with focus on defence industries collaboration.

Towards implementing India - Oman Joint Vision Document entitled ‘A Partnership for the Future’, adopted during the visit of Head of State of the Sultanate of Oman, Sultan Sultan Haitham Bin Tarik in Dec 2023, the Defence Secretary and Secretary General signed a Memorandum of Understanding (MoU) pertaining to procurement of Defence Material and Equipment which would provide a framework for a new area of defence collaboration.

During the two day visit to Oman, Defence Secretary also held bilateral talks with the Secretary General. During the talks, Shri Giridhar Aramane highlighted the potential of domestic defence industry with capacity, capability and looked forward to a fruitful partnership with the Armed Forces of Oman. Oman side expressed confidence in the capability of Indian defence industry.

Defence Secretary also invited Secretary general and his delegation to visit India to witness the defence industrial capability, especially in aerospace and maritime sectors.

The Defence Secretary visited Oman from 30-31 Jan 2024 on the invitation of Secretary General, Ministry of Defence, Sultanate of Oman. Dr. Mohammed Bin Naseer Bin Ali Al Zaabi. Oman is one of India’s closest defence partners in Gulf region and defence cooperation has emerged as a

key pillar of the strategic partnership between India and Oman. The two countries are committed to work under the vision of strategic partnership.

https://pib.gov.in/PressReleasePage.aspx?PRID=2000911

Business Standard

***Wed, 31 Jan 2024***

# 'India Moving Fast in Defence Production, 2,920 Items Indigenised so far'

India is moving "fast and steady" in defence production and so far indigenised 2,920 defence items out of 4,666 listed items, Director (DIP), Department of Defence Production, Amit Satija said on Wednesday.

He was speaking on the topic ' Enhancing the participation of MSMEs in the Defence sector' at a state-level conclave of Defence MSMEs in Nagpur, organised by the FICCI (Federation of Indian Chambers of Commerce & Industry). Satija said multiple initiatives have been undertaken by the Ministry of Defence, especially the Department of Defence Production. "Out of 4,666 defence items, including assemblies, sub-assemblies, raw materials, critical spares and components etc, which were listed for indigenisation, 2,920 items have already been indigenised," he said.

Referring to the Make-1 and Make-2 categories, Satija said several industry-friendly provisions are built in, such as relaxation in the eligibility criteria, minimal documentation, and other provisions for considering proposals suggested by industry and individuals.

"102 projects related to the Army, Navy and Air Force have been accorded an in-principle approval under the Make 2 procedure and 44 projects under the Make-1 category. Three projects have been given in-principle nod under the Make 3 category," he added.

The Department of Defence is moving fast and steady towards the indigenisation goal, he said, adding that 40 to 50 licences are issued every year in defence production.

'Make-I' refers to government-funded projects while 'Make-II' covers industry-funded programmes. The Make III category was introduced by the government with the objective of self-reliance through import substitution.

https://www.business-standard.com/industry/news/india-moving-fast-in-defence-production-2-920-items-indigenised-so-far-124013100867_1.html

FINANCIAL EXPRESS
Read to Lead

***Wed, 31 Jan 2024***

# Defence Ministry Set to Receive LoA for 31 MQ-9B Drones from the US

Over the next few days, the Ministry of Defence is expected to receive the Letter of Acceptance (LoA) from the Biden administration for the delivery of 31 MQ-9B Sea Guardian drones to India.

Sources have confirmed to Financial Express Online that the LoA is set to be sent to New Delhi shortly, and this will set the ball rolling for the next step — price negotiations. The US Congress is expected to put its stamp of approval soon.

Financial Express Online has reported previously that approval has been given for 31 MQ-9B drones and out of these 15 Sea Guardian drones are for the Indian Navy and eight each for the Indian Air Force (IAF) and the Indian Army (IA). These will be procured from the US under the government-to-government framework by March this year.

Officials from both sides are expected to hold a final series of negotiations related to the procurement of these drones once Washington responds to India's Letter of Request (LoR). These drones will be from General Atomics Us based defence major.

These long-endurance 'hunter-killer' drones will help the Indian armed forces strengthen their surveillance apparatus, especially along the Line of Actual Control (LAC) with China. And in the Indian Ocean as well as the coastal line.

Though the estimated cost of the deal is expected to be lower than USD 3 billion, the price negotiation will start once the LoA is received. It is understood that the issue of India's proposed procurement of the drones figured during US Defence Secretary Lloyd J Austin's talks with Defence Minister Rajnath Singh in Delhi last November.

At a select media briefing in New Delhi, Austin had indicated that the final deal will be announced at the right time. Financial Express Online had reported previously that these high-altitude long-endurance drones are capable of remaining airborne for over 35 hours and can carry four Hellfire missiles and around 450 kgs of bombs.

In a strategic move, the Indian Navy, in 2020, leased two MQ-9B Sea Guardian drones from General Atomics for one year, focusing on surveillance in the Indian Ocean. This lease has been subsequently extended, underlining the drones' continued importance in bolstering India's maritime security. And these two drones are being deployed by the Indian Navy to fight piracy attempts in the Arabian Sea, and Gulf of Eden.

India is expected to pay just USD 99 million for each MQ-9B drone, a significant reduction compared to the USD 161 million spent by the UAE in previous acquisitions. The US previously acquired 16 drones at USD 69 each, but these lacked vital components like sensors, weapons, and certification, making up 60-70% of the total cost.

The advantageous pricing for India is influenced by the country's large deal size and the manufacturer's ability to recover initial investments from earlier transactions. However, the potential inclusion of indigenous radars and missiles might lead to a revaluation of costs, highlighting the complexities in such acquisitions.

The Indian Air Force and Army consistently back these acquisitions, emphasizing the importance of technological expertise. India aims for a 15-20 percent technology transfer, manufacturing major components domestically, including engines, radar processor units, avionics, sensors, and software.

Pending final approval from both governments, India intends to purchase 11 ready-made drones initially, with the rest assembled domestically. These MQ-9B drones, renowned for their high-altitude long-endurance capabilities, play a crucial role in boosting India's surveillance abilities, effectively monitoring both land and maritime boundaries.

https://www.financialexpress.com/business/defence-defence-ministry-set-to-receive-loa-for-31-mq-9b-drones-from-the-us-3380365/

THE TIMES OF INDIA

***Thu, 01 Feb 2024***

# Army Chief Lauds Engineer Units' Work on Northern Border

Chief of Army Staff General Manoj Pande on Wednesday appreciated the engineer regiments of the Bombay Sappers for 'excellent' support to the field formations of the Indian Army in the operational zones, including in Ladakh, on the northern border.

General Pande, who is also the Colonel Commandant of the Bombay Sappers, addressed over 3,000 personnel, including soldiers of the Sikh Light Infantry and Maratha Light Infantry marching contingents at the Bombay Engineering Group and Centre in Khadki.

General Pande, who commanded the 117 Engineer Regiment of the Bombay Sappers, said, "The engineer regiments have done excellent work ranging from rendering combat engineering support to the field formation to the rescue operations in north Sikkim during operation Teesta (which was launched to search 23 missing Army personnel last year). The engineer units have done exceptional work in the tough terrain of Ladakh too."

Various engineer regiments have constructed bridges, specialised accommodations for the forest and other infrastructure in the Ladakh region after the clashes with the Chinese troops in Galwan in 2020, sources said.

On the occasion, General Pande also released a commemorative postage stamp to immortalise the revered status of the Bombay Sappers War Memorial.

https://timesofindia.indiatimes.com/city/pune/army-chief-lauds-engineer-units-work-on-northern-border/articleshow/107309249.cms

THE TIMES OF INDIA

***Thu, 01 Feb 2024***

# IAF Plans Tie-up with Pvt Players for Aircraft Repairs

The Indian Air Force (IAF) is expected to come up with two major requests for proposals (RFPs) for roping in private players for not only repair and overhaul of aircraft but also to make available spares for its fleet in the process. The RFPs would be floated for works which come under the IAF Headquarters Maintenance Command in Nagpur.

The IAF is finding it difficult to find certain components as in some cases the original equipment manufacturers (OEMs) have jacked up the rates considerably. The conflict between Russia-Ukraine followed by the Israel-Hamas war has also added to the problem of procuring spares, said sources.

This is for the first time that the IAF is roping in private players for maintenance of aircraft in the BRDEs. The private partner will have to deploy its own skilled manpower, the source said. Earlier, the private sector has been involved in indigenization of specific spares.

Sources said the idea is to tie up with private partners who would be carrying out the repair and overhaul of aircraft under strict quality control of the IAF at the base repair depots (BRDs) under the HQ maintenance command, especially those located at Nashik, Kanpur and Chandigarh. These bases carry out the maintenance of Mig-29, Sukhoi, AN-32 aircraft and Mi-17 helicopters, respectively, said sources part of the development.

The private partner will also have to supply aircraft spares. The components have to be OEM certified or should get a seal from centre for military air worthiness and certificate, the source said.

Nagpur: The Indian Air Force (IAF) is expected to come up with two major requests for proposals (RFPs) for roping in private players for not only repair and overhaul of aircraft but also to make available spares for its fleet in the process. The RFPs would be floated for works which come under the IAF Headquarters Maintenance Command in Nagpur.

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https://timesofindia.indiatimes.com/city/nagpur/iaf-plans-tieup-with-pvt-players-for-aircraft-repairs/articleshow/107308155.cms

THE ECONOMIC TIMES

***Wed, 31 Jan 2024***

# To Push for Defence Production, Maharashtra Gears up for its Inaugural DefExpo

Maharashtra is seeking to push ahead on defence production and is hosting its first ever DefExpo that will see the participation of over 500 MSMEs and start ups in the state.

To be held at Pune International Exhibition and Convention Centre on 17th, 18th and 19th February, the MSME focused expo is expected to see wide representation from the armed forces, police personnel and industry executives.

“This strategic event aims to provide a unique platform for prominent industry leaders, innovative start-ups, and dynamic MSMEs to showcase their capabilities, fostering collaboration and unlocking immense potential within the defence sector,” official said, adding that the event is being done in collaboration with Nibe Limited as the Knowledge Partner.

The export is expected to also see the participation of over 10,000 students from various universities and engineering colleges in Maharashtra. “This presents an unparalleled opportunity for students to interact with the top brass of the Tri Services and industry professionals deeply engaged in the defence sector,” officials added.

https://economictimes.indiatimes.com/news/defence/to-push-for-defence-production-maharashtra-gears-up-for-its-inaugural-defexpo/articleshow/107285468.cms

ThePrint

*Wed, 31 Jan 2024*

# Pakistani and Iranian Crew Thank Indian Navy for Saving them from Somali Pirates

Pakistani and Iranian crew have thanked the Indian Navy for saving them from Somali pirates in recent days. The Indian Navy has released video of the anti-piracy operation and how they saved the crew members and captured the hijackers.

A member of the rescued Pakistani-Iranian crew explained how pirates dumped their weapons after seeing the Indian Navy. Warning shots were fired by Indian Navy warship INS Sumitra during the anti-piracy mission, according to Indian Navy. The video shared by the Indian Navy on the social media platform X showed disarmed pirates.

In the video, a member of the rescued Pakistani and Iranian crew said, “We were held by Somali pirates. Then, Somali pirates got scared seeing Indian Navy.” The rescued Pakistaqni and Iranian crew said, “Thank you Indian Navy for saving our lives.”

The Indian Navy spokesperson stated that the Indian Navy remains committed to maritime security in the Indian Ocean region.

In a post on X, Indian Navy spokesperson stated, “#IndianNavy remains committed to #MaritimeSecurity in the #IndianOceanRegion, in keeping with @PMOIndia’s vision of #SAGAR. Indian Naval warships mission deployed in the #IOR are ensuring security against all #maritime threats, keeping our seas safe for mariners of all nationalities.”

The Indian Navy warship INS Sumitra thwarted the piracy attempt on an Iranian-flagged fishing vessel, Al Naeemi sailing off the East Coast of Somalia and successfully rescued 19 Pakistani nationals on Monday, the Indian Navy said in an official statement.

INS Sumitra, Indian Navy’s indigenous offshore patrol vessel had been deployed for anti-piracy and maritime security operations East of Somalia and Gulf of Aden. On January 28, warship on PM 28 Jan 2024 had responded to a distress message regarding hijacking of an Iranian flagged Fishing Vessel (FV) Iman, which had been boarded by pirates and the crew taken as hostages.

The FV was intercepted by INS Sumitra and following the SOPs and coercive posturing the vessel and 17 Iranian crew were safely rescued in the early hours of January 29. FiV Iman was sanitised and released for onward transit.

Subsequently, INS Sumitra located and intercepted another Iranian flagged fishing vessel Al Naeemi, which had been boarded by pirates and her Crew (19 Pakistani Nationals) taken hostage.

On January 29, INS Sumitra intercepted the fishing vessel 29 Jan 2024 and through coercive posturing and deployment of her integral helo and boats compelled the safe release of the crew and the vessel. The ship also undertook confirmatory boarding to sanitise and to check on the well-being of the crew who were held captive by the Somali pirates.

In a statement, the Indian Navy had stated, “INS Sumitra, over the course of less than 36 hours, through swift, persistent and relentless efforts has rescued two hijacked Fishing Vessels along with 36 Crew (17 Iranian and 19 Pakistani) in Southern Arabian Sea approximately 850 nm West of Kochi, and prevented misuse of these Fishing Vessels as Mother Ships for further acts of Piracy on Merchant Vessels.” Indian Naval Ship Sumitra, having thwarted the Piracy attempt on FV Iman,

has carried out yet another successful anti-piracy operation off the East Coast of Somalia, rescuing Fishing Vessel Al Naeemi and her Crew (19 Pakistani Nationals) from 11 Somali Pirates.

INS Sumitra, Indian Navy's indigenous Offshore Patrol Vessel had been deployed for Anti-Piracy and Maritime Security Operations East of Somalia and Gulf of Aden. The warship on PM 28 Jan 2024 had responded to a distress message regarding hijacking of an Iranian flagged Fishing Vessel (FV) Iman, which had been boarded by pirates and the crew taken as hostages. The FV was intercepted by INS Sumitra and following the SOPs and coercive posturing the vessel and her Crew (17 Iranian Nationals) were safely rescued in the early hours of 29 Jan 2024. FV Iman was sanitised and released for onward transit.

Earlier, ithe Indian Navy's mission-deployed guided missile destroyer, INS Visakhapatnam, on January 18 addressed a distress call from the Marshall Island-flagged MV Genco Picardy following a drone attack on the night of January 17.

https://theprint.in/world/pakistani-and-iranian-crew-thank-indian-navy-for-saving-them-from-somali-pirates/1947730/

The Indian EXPRESS

*Wed, 31 Jan 2024*

# Microsoft Recommends these 5 Ways to Use AI Copilot for Cyber Defence

Microsoft Security Copilot is the company's first generative AI security product that aims to go beyond traditional security operations to change incident response, risk assessment, and identity troubleshooting for security teams. Here are 5 ways the company recommends you use the product for your cyber defence strategy.

**Copilot for device management**

IT administrators are faced with handling the critical security role of managing devices in an evolving device landscape with rising IT complexity and risk of app and policy misconfiguration. Copilot is integrated to Microsoft Intune and can help generate policies, analyse drafts, and provide "what-if" analysis that can raise any potential security and productivity risks.

**Copilot for identity management**

Over the last year, password-based attacks have risen rapidly and some new attack techniques can circumvent multifactor authentication. Security Copilot also integrates with Microsoft Entra to help investigate identity risks and to troubleshoot daily identity tasks like why a sign-in will require multifactor authentication or why a user's risk level increased.

**Copilot for data security**

Security Copilot is integrated into Microsoft Purview to summarise data security and compliance capabilities while making sense of many different types of data. It can be used to accelerate investigations and response times while allowing analysts at all levels to complete complex tasks with the help of AI.

**Security copilot for the cloud**

As more and more companies depend on cloud resources, maintaining strong cloud security is an important challenge for cybersecurity teams. Security Copilot and Microsoft Defender for Cloud

integrated can be used by security admins to identify critical risks, learning about sensitive data and its lateral movement.

**Copilot for attack surface management**

Security teams could find tracking assets and their vulnerabilities time-consuming especially when it comes to determining which assets pose risk to the organisation. Microsoft Defender External Attack Surface Management has new capabilities that will give security teams an eye into their external attack surface.

https://indianexpress.com/article/technology/tech-news-technology/microsoft-security-copilot-cybersecurity-9136764/

THE HINDU

***Wed, 31 Jan 2024***

# Yemen's Houthis Say they will Target U.S., British Warships in Self-defence

Yemen's Iran-aligned Houthis said on January 30 they plan to continue targeting U.S. and British warships in the Red Sea in self-defence, the group's military spokesperson said in a statement carried by Al-Massirah TV.

“The Houthis fired missiles at U.S. warship USS Gravely,” the statement added. On Tuesday night, the U.S. military’s central command said they had shot down one anti-ship cruise missile fired from Yemen towards the Red Sea with no damage reported.

The Houthis, who control the most populous parts of Yemen, have been attacking ships in and around the Red Sea in solidarity with Palestinians in the Gaza war.

The U.S. and British have launched strikes on Houthi targets in Yemen, and returned the militia to a list of "terrorist" groups.

https://www.thehindu.com/news/international/yemens-houthis-say-they-will-target-us-british-warships-in-self-defence/article67795754.ece

ANI
South Asia's Leading Multimedia News Agency

***Wed, 31 Jan 2024***

# Taiwan Navy Holds Maritime Drills to Test Combat Capabilities

Taiwan's Marine Corps held a maritime drill Wednesday at the Zuoying Naval Base in Kaohsiung, featuring a mine-laying ship and a domestically built assault boat that carried out maritime surveillance and combat operations to simulate defending against a Chinese invasion, Focus Taiwan reported.

The manoeuvres, which took place in waters around Zuoying Harbour, were designed to test the Marine Corps' ability to identify Chinese military movements quickly as well as their combat preparedness and capability.

During the exercise, the Taiwan Navy made an emergency departure from the harbour with a minelayer and an indigenous M109 assault boat and performed a variety of actions, including surveillance and the use of radar systems and drones to alert battleship forces to approaching hostile forces, reported Focus Taiwan.

Officers and troops on the M109 assault boat told CNA that during the drills, the M109 assault boat played an important part in the operation by bringing sea and land forces together to respond to China's "grey zone" actions near Taiwan while maintaining maritime safety.

Since 2020, China has increased the use of "grey zone tactics" in the form of deployment of military aircraft and naval vessels over the median line and inside Taiwan's ADIZ.

China's Communist Party considers Taiwan its own territory, despite never having controlled it. While emphasising a preference for peaceful "reunification," Chinese officials have not ruled out the use of force.

The historical roots of the Taiwan-China relationship trace back to 1949 when General Chiang Kai-shek fled with his nationalist forces to Taiwan after Mao's Red Army gained control in the Chinese Civil War.

Moreover, Taiwan also remains a sensitive issue in US-China relations. During a recent summit with US President Joe Biden, Xi asserted that China's "reunification" with Taiwan is "unstoppable."

The United States maintains an unofficial relationship with Taiwan, recognising China's position that Taiwan is part of its territory.

https://www.aninews.in/news/world/asia/taiwan-navy-holds-maritime-drills-to-test-combat-capabilities20240131222153/

SHEPHARD

***Wed, 31 Jan 2024***

# MBDA and Saab Strengthen Partnership on Anti-tank and Air Defence Systems

MBDA and Saab have signed Letters of Intent (LoI) to strengthen their cooperation in anti-tank and air defence capabilities during a French-Swedish forum.

The areas of anti-tank and air defence were identified as critical for the armed forces of both countries in the context of high-intensity conflicts.

Collaboration between the multinational MBDA and Sweden on anti-tank capabilities began in July 2017 when the Swedish Defence Materiel Administration (FMV) issued a tender for the procurement of a new anti-tank missile system, to be known as the RBS 58, as a replacement for the in-service RBS 5.

The tender concluded with the signing in July 2021 of an LoI between the French and Swedish governments to co-develop a new anti-tank missile for the Swedish armed forces based on the MBDA Akeron MP.

In April 2023, the French and Swedish governments signed a bilateral accord regarding the development of a Swedish version of the MBDA Akeron MP anti-tank missile and the development of future variants of the missile.

A first contract has been awarded to Saab and MBDA by the French Defence Procurement Agency (DGA) and the FMV.

“This will enable the pooling of Saab and MBDA’s expertise in the anti-tank domain, in order to support the Swedish and French armed forces’ choice of the AKERON MP weapon system in the short term,” the companies noted.

“This will also enable the implementation of a joint capability roadmap to develop new functionalities associated in particular with beyond line-of-sight firing, and also to prepare the missile to address the future generation of targets that will arrive on the battlefield.”

Saab and MBDA have also been collaborating on the Meteor air-to-air missile programme and the TAURUS cruise missile.

https://www.shephardmedia.com/news/landwarfareintl/mbda-and-saab-to-strengthen-partnership-on-anti-tank-and-air-defence-systems/

# Science & Technology News

Press Information Bureau
Government of India

**Ministry of Science & Technology**

***Wed, 31 Jan 2024***

## Environment Friendly, High-performance Alternative to Hard Chrome Plating can Produce more Durable Coatings

A new technique of synthesizing thin hard surface coatings by high velocity air fuel spraying, has the potential of emerging as an environment friendly safer alternative to hard chrome plating used in on car parts, tools, and kitchen utensils.

Chrome plating is used as it is hard and wear resistant. However, it consists of chromates, fluorites, and hexavalent chromium making it carcinogenic in nature. This has initiated the researcher’s search for a safer, environment friendly alternative with an equivalent or superior wear resistance but crack-free coating. Deposition of thin coating with industrially acceptable surface roughness is economical as it requires less powder and elimination of several grinding processes.

Thermal spray is a group of techniques to deposit wide variety of coatings for various industrial applications to reduce wear and tear and improve corrosion resistance. While with conventional thermal spray techniques, thickness build up is high and several grinding and polishing operations are needed to acquire the required thickness and roughness. A new technique called high velocity air fuel (HVAF), involving low temperatures and high particle velocities can deposit coatings using finer sized powders (5-15 µm).

Scientists from ARCI, an autonomous institution of the Department of Science and Technology (DST) carried out synthesis of thin hard coatings of a composite alloy of Tungsten, cobalt, and

chromium (WC-10Co-4Cr) by high velocity air fuel spraying. Thin coatings were deposited with torches with different capacities and by employing different nozzle sizes.

Coatings with 50 µm thickness and surface roughness's close to 1.5 µm were achieved on stainless steel substrates. The torch type and nozzle design influenced the coatings properties considerably. Superior sliding wear performance was noticed with HVAF sprayed thin WC-10Co-4Cr coatings against conventional Hard Chrome Plating (HCP). Similarly, corrosion studies carried out on the coating and compared with HCP showed that the new technique can be a better alternative to HCP for heavy load applications like hydraulic shaft, valves, piston rods, balls and so on.

A comparison of the hard chrome plating with as-sprayed thin cermet coatings to assess the performance of the latter showed that surface roughness of the as-deposited thin thermal sprayed WC-10Co-4Cr coatings is an order of magnitude higher than that of hard chrome plating.

Further, the coating can be deposited on as-machined condition to achieve smooth surface and around 50 µm coating thickness. This significantly reduces the post coating finishing operations which reduces the processing and raw material cost significantly with better wear resistance than HCP.

The study published in the Journal of Thermal Spray Technology is expected to provide insights about the optimum thermal energy required without excessive surface melting and/or oxidation while retaining the dense microstructural features through sufficient kinetic energy for enhanced wear resistance.

Publication link: https://doi.org/10.1007/s11666-023-01563-9

For more details contact: Dr P Suresh Babu, Email: pitchuka@arci.res.in

https://pib.gov.in/PressReleasePage.aspx?PRID=2000764

Hindustan Times

***Wed, 31 Jan 2024***

# How ISRO Helped Japan Moon Lander SLIM's 'Pinpoint' Landing

Japan scripted history after its lander Smart Lander for Investigating Moon (SLIM) achieved a soft landing on the Moon's surface. After the US, China, Russia, and India, Japan became the fifth country to achieve this feat. A handle dedicated to the moon lander was also started on X to share information on the craft and its journey. One of the posts on the microblogging platform is about the various space agencies that helped in SLIM's landing and one of them is the Indian Space Research Organisation (ISRO).

"While most of #SLIM's equipment was built domestically, international cooperation with the spacecraft from many different countries was invaluable in SLIM's pinpoint lunar landing. We introduce a few of SLIM's spacecraft collaborators below," reads a post shared on the SLIM X handle.

**How did India contribute to SLIM?**

"India's ISRO also provided us with high-resolution observation data of the lunar surface from Chandrayaan-2, which was immensely helpful in selecting the final landing site for #SLIM", reads a part of this tweet thread.

The tweet about ISRO was shared a day ago on January 30. Since then, the post has received close to 1.7 lakh views. The share has further collected more than 2,200 likes. People posted varied comments while reacting to the tweet.

**How did netizens react to ISRO's contribution?**

"We all work for humanity's better future and prospects," wrote an X user. "This is so interesting," added another. "Amazing," joined a third. Many reacted to the post using thumbs-up emoticons.

A post on the same thread explained that the American Space Agency NASA's Lunar Reconnaissance Orbiter helped SLIM by providing a large amount of image data.

"The pinpoint landing of #SLIM would not have been possible without the international cooperation from these spacecraft. #JAXA will continue to develop technology and gather data to support the international community for all of our exploration in the future," reads the concluding tweet on the thread.

https://www.hindustantimes.com/trending/how-isro-helped-japan-moon-lander-slims-pinpoint-landing-101706699760755.html

INDIA TODAY

***Wed, 31 Jan 2024***

# ISRO to Launch INSAT-3DS Aboard GSLV on February 17 from Sriharikota

The Indian Space Research Organisation (ISRO) is gearing up for the launch of its state-of-the-art meteorological satellite, INSAT-3DS.

The spacecraft is likely to launch on February 17, 2024 from the Satish Dhawan Space Centre in Sriharikota aboard the GSLV-F14 rocket, marking a significant milestone in India's space endeavours.

INSAT-3DS is designed to enhance the capabilities of the existing INSAT system by providing continuity of services to the in-orbit INSAT-3D and 3DR satellites.

This exclusive meteorological satellite was flagged off to SDSC-SHAR on January 25, 2024, for integration with the launch vehicle. The satellite is aimed at augmenting weather forecasting, disaster management, and related meteorological services.

The upcoming satellite will occupy a geostationary orbit at an altitude of approximately 35,786 kilometers, positioned at 82 degrees East longitude.

It is equipped with advanced meteorological instruments, including a six-channel Imager and an Infrared Sounder, which are pivotal for monitoring weather patterns, detecting cyclones, and aiding communication during natural calamities.

The INSAT-3DS mission is part of the Indian National Satellite System (INSAT) series, which has been instrumental in revolutionising India's communication sector since the commissioning of INSAT-1B in 1983.

The INSAT series serves various communication, broadcasting, and meteorological purposes across India and neighboring regions.

ISRO's latest venture is expected to significantly contribute to the nation's meteorological imaging and data relay capabilities. The launch window for the GSLV-F14 mission extends from February 17 to March 17, as per the latest Notice to Air Missions (NOTAM) issued by the space agency.

The mission promises to bolster India's infrastructure for weather monitoring and disaster preparedness, ensuring that the country remains at the forefront of space technology applications for societal benefits.

With the countdown to the launch underway, all eyes are on Sriharikota as ISRO continues its legacy of pioneering space missions, further cementing India's position as a global leader in space exploration and satellite technology.

https://www.indiatoday.in/science/story/isro-to-launch-insat-3ds-aboard-gslv-on-february-17-from-sriharikota-2495516-2024-01-31