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# समाचार पत्रों से चयित अंश Newspapers Clippings

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Thu, 23 Jun 2022

### **BrahMos Deputy CEO Gets Disaster Management Award**

BrahMos Aerospace Deputy CEO Sanjeev Joshi received the World Disaster Management Congress for Disaster Risk Reduction (/topic/disaster-risk-reduction) during the COVID-19 pandemic (/topic/covid-19-pandemic) from 2020 to 2021.



*BrahMos Aerospace deputy CEO Sanjeev Joshi received disaster management award. (Photo/ANI)*

The award ceremony was held in the national capital on Wednesday evening and presented by Tourism and Culture G Kishan Reddy. The facilitation is envisaged to recognize and honour those engaged in the entire Disaster Management during the Covid crisis, the organisers said.

India is a signatory to the Sendai Framework for Disaster Risk Reduction (/topic/disaster-risk-reduction), which was adopted during the Third UN World Conference on Disaster Risk Reduction (/topic/disaster-riskreduction) in March 2015 to work towards making all stakeholders disaster resilient and significantly reduce the loss of lives and assets. India is a signatory to the Sendai Framework for Disaster Risk Reduction (/topic/disaster-risk-reduction), which was adopted during the Third UN World Conference on Disaster Risk Reduction (/topic/disaster-riskreduction) in March 2015 to work towards making all stakeholders disaster resilient and significantly reduce the loss of lives and assets. Joshi was in Defence Research and Development Organisation (/topic/defence-research-and-developmentorganisation) (DRDO) when the COVID crisis hit globally and collaborated on the efforts against the pandemic. (ANI)

<https://www.aninews.in/news/national/general-news/brahmos-deputy-ceo-gets-disaster-management-award20220623073142/>



*Thu, 23 Jun 2022*

### **Indian Military Seeks Signal Jammers to Protect Himalayas from Guided Weapons, Drones**

Delhi has recently augmented its capacity along the China border, deploying military hardware to the region following a violent clash in the Galwan valley in June 2020. The two countries continue military and diplomatic talks to withdraw thousands of troops from the Line of Actual Control. The Indian Air Force (IAF) plans to deploy advanced signal jammers in forward locations along its borders in order to protect military assets from "satellite navigation system receiver-based guided weapons," including missiles and drone attacks. A document shared with manufacturers explains that the IAF seeks a system capable of jamming and spoofing onboard GPS signals, thereby degrading the navigation accuracy of hostile systems.

"The System should be able to spoof both in space and time domain different SNS Constellations," the document read. "The system design should include modularity for quick deployment/de-induction," the document further adds. The IAF further asked manufacturers to present systems which are fully operational at a height up to a minimum of 5000 meters.

Retired Brigadier Rahul Bhonsle, a Delhi-based defence analyst, noted that the desired jammer system is new for the armed forces. "I don't recall off-hand availability of such equipment with the Indian armed forces. However, the US and Russia have such a capability, and China too. Important that this is deployed in forward areas to avoid any accusations of interference with normal civilian use of GPS," Bhonsle said. The Indian Armed Forces have recently observed increased air space violations by hostile drones, endangering military assets near the border. China has reportedly deployed attack drones and missiles near the Ladakh border. The two countries' armies entangled in a deadly fight in June 2020, in which 20 soldiers from the Indian Armed Forces and four from China's People's Liberation Army were killed. The border dispute between the two Asian giants has a colonial past, resulting in several clashes in the absence of clear border demarcation of the 3488-km border ranging from Ladakh in the west to Arunachal Pradesh in the east.

<http://www.indiandefensenews.in/2022/06/indian-military-seeks-signal-jammers-to.html?m=1>

## Government Working on Skilling Plans for Agniveers

The government has begun working on skilling requirements for Agniveers at three levels- pre recruitment, in service and for post- service release courses. Nearly 40 job roles across sectors will be prepared within four months, in time for the induction of the first batch of Agniveers, sources said. A soft skilling module for post-service civilian employment is also envisaged. The ministry of skill development and entrepreneurship will closely engage with the armed forces to draw up the course structures and training modules over the next few weeks. A meeting will soon be held on working out key details with the Armed Forces on the Agniveer course structure and allied skills, officials in the know told ET.

The first stage identified in initial assessments is at pre recruitment. It has been proposed that the ITI ecosystem be brought in to help prepare potential candidates for induction as Agniveers. Special modules are also planned to help Agniveer aspirants cover up gaps, if any. The Armed forces will soon be sharing service specific course structures and requirements with the skill and education ministries for the same so that skill certification and curricula can be synergised. The second stage of the skilling mission for Agniveers will be at the In service stage. The Skilling ministry will work on a framework for recognition of skills acquired by the Agniveers during their service tenure with the armed forces and issue them skill certificates for the same. <https://economictimes.indiatimes.com/news/defence/government-working-on-skilling-plans-for-agniveers/articleshow/92396135.cms?from=mdr>

## Three Service Chiefs Brief PM Modi on Agnipath Scheme

The three service chiefs separately met Prime Minister Narendra Modi on Tuesday and briefed him about their plan to implement the Agnipath scheme and related issues against the backdrop of the ongoing protests against the new policy for military recruitment. The scheme announced on June 14 seeks to recruit youngsters in the age bracket of 17-and-a-half to 21 years for a four-year period, with a provision to retain 25 per cent of them for 15 more years. For 2022, the upper-age limit has been extended to 23 years. It is learnt that Army chief General Manoj Pande, Air Chief Marshal VR Chaudhari and Navy chief Admiral R Hari Kumar apprised Modi of the overall induction process and the steps being taken by them for a successful rollout of the scheme.

There was no official comment on the meetings. The Centre has been strongly defending the scheme, saying the "transformative reform" measure for recruitment in the armed forces will provide an opportunity to youngsters to serve the country. The meetings between the prime minister and the service chiefs took place hours after the three services said the Agnipath scheme

will not entail any change in the existing system of recruitment for soldiers and that it will not at all impact their operational readiness. "There will be no change in the recruitment process. What happened five years ago, what happened earlier, the same will continue," said Lieutenant General Anil Puri, the Additional Secretary in the defence ministry's Department of Military Affairs. He said the recruits under the scheme will be eligible for gallantry awards and that it is being rolled out so that the armed forces draw the best talent. At the briefing, top officials of the three services announced a detailed schedule of the recruitment process, asserting that there will be no compromise on the quality of the training to be imparted to the "Agniveers", though the duration of their training period would be compressed

"The combat capabilities and readiness of the Indian Air Force are non-negotiable. The Indian Air Force and the government will do everything that is required to keep us combat-worthy and combat-ready," Air Officer-in-Charge of Personnel, Air Marshal S K Jha, said. Lt Gen. Puri said the Agnipath scheme would add strength to the armed forces. Air Marshal Jha said there is "absolutely no change" in the IAF's process of induction, entry-level qualification, examination syllabus and medical standards for the recruits under the Agnipath scheme. "All the enrolments in the Indian Air Force will take place only through Agniveer Vayu," he added. <https://economictimes.indiatimes.com/news/defence/three-service-chiefs-brief-pm-modi-on-agnipath-scheme/articleshow/92368700.cms>

## THE ECONOMIC TIMES

Wed, 22 Jun 2022

### **India Emerges Frontrunner for Malaysian Fighter Jet Order**

India has emerged as the frontrunner for a Malaysian requirement of light combat aircraft, with a package deal on the table that would include maintenance and spares for the nation's Russian origin Su 30 fighter jets. India has offered an attractive financial package for its Tejas Light Combat Aircraft (LCA) and has committed that it can keep Malaysia's fleet of Su 30 jets flightworthy, given the vast spares reserve and technical expertise available with Hindustan Aeronautics NSE 0.72 % Limited (HAL). Other contenders for the deal -- primarily South Korea and China -- are not in a position to offer this package as they do not have backend contracts with Russian manufacturers to work on the Sukhoi fighters. Malaysia has 18 of the Su 30 MKM fighters, which are very similar to the MKI version that is in service with the Indian Air Force.

It is learnt that detailed discussions on the dual package have taken place and a final decision may be possible under the government to government route. Several nations like Malaysia have been impacted by western sanctions on Russia that have made ordering spares and other supplies for legacy military equipment challenging. The Malaysian air force has been scouting for 18 new light fighter jets, with the Indian LCA emerging as a top contender given its low acquisition cost and high technical ratings. India is offering the LCA Mk1A version with a modern AESA radar, new avionics and capability to integrate a variety of air to air and air to ground weapons. The Indian Air Force and Navy have also recently placed an order for indigenous Astra beyond visual range air to air missiles. Senior teams from the Malaysian air force have visited India in the past to discuss the proposal. India is also offering to create a full maintenance, repair and overhaul facility for the LCA fleet in Malaysia to ensure a high rate of availability. The Indian LCA is



priced at around \$42 million per unit, a price made possible given economies of scale after the IAF placed an order for 83 fighter jets under the Make in India initiative. In 2019, India had dispatched two of its LCA fighters for the LIMA show at Langkawi as part of its efforts to pitch the jets for export order.

<https://economictimes.indiatimes.com/news/defence/india-emerges-frontrunner-for-malaysian-fighter-jet-order/articleshow/92396099.cms>



*Wed, 22 Jun 2022*

## **PM Modi to Visit UAE: I2U2, Military Cooperation, Diaspora to be Discussed**

On June 28, Prime Minister Narendra Modi is travelling to the United Arab Emirates (UAE) to personally convey his condolences on the passing away of the former President of UAE Sheikh Khalifa bin Zayed Al Nahyan, who was also the ruler of Abu Dhabi. According to the Ministry of External Affairs, Prime Minister Modi will take this opportunity to congratulate Sheikh Mohamed bin Zayed Al Nahyan on his election as the new President of UAE and Ruler of Abu Dhabi. When the former president of UAE had passed away, India had announced a day of mourning with the flag at half mast and Vice President Venkaiah Naidu was sent to represent India as world leaders had gathered to pay homage.

### **Significance of the visit**

It comes ahead of the I2U2 Leaders Summit when the US President Joe Biden visits West Asia in July. The acronym I2U2 — India, Israel and UAE and the US, the American for West Asia QUAD which was formed last year. It also comes close at the heels of the Free Trade Agreement or FTA pact which has been inked between the two countries. According to reports, after the US, UAE is the second-largest export destination of India touching over USD 30 billion for the year 2018-19. And for UAE, India was the second-largest trading partner in 2018 with USD 36 billion (non-oil trade).

### **Indian Diaspora**

The expatriate community around 3.4 million is the largest ethnic community in UAE and roughly constitutes about 35 per cent of the country's population. Around 15 percent of the Indian Diaspora lives in the Emirate of Abu Dhabi and the rest are in six Northern Emirates including Dubai.

### **Comprehensive Strategic Partnership & High Level Visits to UAE**

There have been several high level visits between the two countries and the last time PM visited UAE was in 2019 when he received the highest award of the country the 'Order of Zayed' conferred upon him by UAE leadership. As reported in Financial Express Online earlier PM Modi was to visit UAE earlier this year for the Dubai Expo, however due to the rising number of COVID cases, the visit was pushed back. In 2019, PM Modi had launched 'RuPay Card' in UAE

and also released a set of stamps commemorating the 150th Birth Anniversary of Mahatma Gandhi. PM Modi has visited UAE in 2015 and 2018.

Military cooperation including military trade as well as joint production of different platforms, maritime security cooperation, artificial intelligence, block chain, and health care are some of the areas where both countries are making efforts to deepen cooperation. Since the visit of the PM is short, according to sources, from the recent FTA, the forthcoming I2U2 summit will also figure during talks between the two leaders.

<https://www.financialexpress.com/defence/pm-modi-to-visit-uae-i2u2-military-cooperation-diaspora-to-be-discussed/2569737/lite/>



*Thu, 23 Jun 2022*

## **Indian Navy Conducts Coordinated Patrol With Indonesian Navy**

The 38th edition of the IndiaIndonesia Coordinated Patrol (IND-INDO CORPAT) between the Indian Navy and the Indonesian Navy is being conducted from June 13 to 24. The Indian Naval Ship INS Karmuk, an indigenously built missile corvette based at the Andaman and Nicobar Command, along with a Dornier Maritime Patrol Aircraft, is participating in the CORPAT while the Indonesian Navy is being represented by KRI Cut Nyak Dien, a Kapitan Pattimura (PARCHIM I) class corvette. Maritime interaction between India and Indonesia has expanded substantially with frequent port visits, participation in bilateral and multilateral exercises and training exchanges.

Under the broad ambit of this strong maritime relationship, the two navies have been carrying out CORPATs along the International Maritime Boundary Line (IMBL) every year since 2002 with the aim of keeping this vital part of the Indian Ocean Region safe and secure for commercial shipping and international trade. The CORPAT has also strengthened understanding and interoperability between the navies and facilitated institutional measures to prevent unlawful activities at sea as well as conduct Search and Rescue (SAR) operations. The current edition of the IND-INDO CORPAT commenced on June 13 with the arrival of KRI Cut Nyak Dien at Port Blair on the Andaman and Nicobar islands. The opening ceremony was conducted on June 14 under the aegis of the Andaman and Nicobar Command. The Indonesian warship during its three-day port call at Port Blair, participated in multiple activities including professional discussions, a pre-sail conference and various sports fixtures. The sea phase for the 38th edition of CORPAT was undertaken on June 21 and 22 along the IMBL in the Andaman Sea.

<https://www.indiatoday.in/defence/story/indian-navy-coordinated-patrol-indonesian-navy-june-13-to-24-1965655-2022-06-23>





*Wed, 22 Jun 2022*

## **NATO Chief Says Sweden, Finland Should Join ‘As Soon As Possible’; Scholz Aims to Discuss ‘Marshall Plan’ for Ukraine**

Ukrainian President Volodymyr Zelenskyy has said the intense battles in eastern Ukraine represent “the toughest spot” in the conflict, with Russian forces “pressing strongly” in the region. Several cities, towns and villages in the Luhansk region have been the focus of severe fighting for several weeks with Russian and Ukrainian forces engaged in street battles while Russian artillery fire destroys infrastructure and homes in the region. Meanwhile, tensions are high between Russia and Lithuania after the latter, a NATO member, banned the rail transfer of all EU sanctioned goods (such as metals, coal, construction materials and high-technology products) coming from mainland Russia to Kaliningrad, a Russian exclave on the Baltic Sea.

Russia has warned of “serious” consequences against what it has called “hostile actions” of Lithuania, while NATO members have reiterated their support for the country. Elsewhere, it’s a tense week for Ukraine as it awaits to see whether it will be granted the status of a candidate country for the European Union. It should know by the end of the week when an EU summit concludes.

<https://www.cnn.com/2022/06/22/war-in-eastern-ukraine-is-the-toughest-spot-zelenskyy-says-tensions-rise-between-russia-and-nato-member-lithuania.html>

## **THE ECONOMIC TIMES**

*Wed, 22 Jun 2022*

## **Finland is Ready to Fight Russia if Attacked, Says Defence Chief**

Finland has prepared for decades for a Russian attack and would put up stiff resistance should one occur, its armed forces chief said. The Nordic country has built up a substantial arsenal. But aside from the military hardware, General Timo Kivinen said, a crucial factor is that Finns would be motivated to fight. The most important line of defence is between one's ears, as the war in Ukraine proves at the moment," Kivinen said in an interview. Finland fought two wars in the 1940s against its eastern neighbour, with which it shares a 1,300-km (810-mile) border. Once a non-aligned country, it is now applying to join the NATO military alliance over concerns that Russia could invade like it did Ukraine on Feb. 24. Since World War Two, Helsinki has kept up a high level of military preparedness. "We have systematically developed our military defence precisely for this type of warfare that is being waged there (in Ukraine), with a massive use of firepower, armoured forces and also airforces," Kivinen said.

"Ukraine has been a tough bite to chew (for Russia) and so would be Finland." Some 100,000 Finns were killed during the two wars Finland fought against the Soviet Union and it lost a tenth

of its territory. The nation of 5.5 million has a wartime troop strength of some 280,000 with 870,000 trained as reservists. It did not abolish military conscription for males as many other western nations did after the end of the Cold War. It has also built one of Europe's strongest artilleries and has stocked up on cruise missiles with a range of up to 370 km (230 miles). It spends 2% of its GDP on defence, a level higher than many NATO countries. It is ordering four new warships, as well as 64 F-35 fighter jets from U.S. defence giant Lockheed Martin. It plans to order up to 2,000 drones, its own high altitude anti-aircraft equipment and is building barriers on its border with Russia.

Some 82% of respondents in a May 18 poll by the defence ministry said they would be willing to participate in national defence if Finland was attacked. Still, Kivinen welcomed Finland's decision to apply to join NATO. Finland and fellow Nordic country Sweden are in talks with Turkey to discuss the latter's opposition to their applications. Ankara has been angered by what it says is Helsinki and Stockholm's support for Kurdish militants and arms embargoes on Turkey. NATO membership would allow Finland to boost its early warning capacity by being part of the alliance's joint airspace control, Kivinen said. Finland would also benefit from the deterrence of being part of an alliance in which an attack on one member is an attack on all its members, he said. Nevertheless, he said, "the main responsibility for Finland's defence will still be borne by Finland".

<https://economictimes.indiatimes.com/news/defence/finland-is-ready-to-fight-russia-if-attacked-says-defence-chief/articleshow/92386832.cms>

## Science & Technology News



*Wed, 22 Jun 2022*

### **Improving the Future of Purification by Using Molecular Silhouette to Separate Compounds in Fluids**

Impure chemical mixtures can now be separated based on differences in molecular silhouette. Membranes have been developed with nanoscale pores that match the shape of impurities in the mix so that only the impurity can pass through. KAUST researchers have suggested that the first application of these metal-organic framework (MOF) based shape-selective membranes could be energy-efficient, low-cost purification of natural gas.

MOFs are organic-inorganic hybrid crystalline porous materials that can feature different types of pores through their structure. By constructing MOFs from different organic and inorganic building blocks, researchers can finely tune the pore structure and aperture. MOF membranes have previously shown great potential for separating mixtures of molecules based on differences in their size or polarizability.

Natural gas, also known as methane, is predicted to play an increasingly important role in the global energy supply during the transition to renewables. Almost all natural gas reservoirs are

contaminated with nitrogen. "The nitrogen dilutes the heating value of natural gas, so it has to be removed," says Sheng Zhou, a Ph.D. student in Mohamed Eddaoudi's lab, who led the research. Nitrogen is chemically inert and similar in both kinetic shape and polarizability to methane, so cannot be removed by existing membranes. "For industrial natural gas purification, there needs to be nitrogen rejection units based on cryogenic distillation," Zhou says. This ultra-low temperature separation technique is expensive and energy intensive.

Eddaoudi, Zhou and their colleagues have developed a highly efficient MOF-based method to purify methane. "We designed a porous membrane that separates nitrogen from methane by exploiting one significant difference between the molecules: their shape," Zhou says. While nitrogen has a rod-like linear structure, methane has a triangular trefoil-type profile. The team created a new membrane material, named Zr-fum<sub>67</sub>-mes<sub>33</sub>-fcu-MOF, with asymmetric pores precisely shaped to block methane but allow nitrogen to pass through.

The team has now shown that, compared to cryogenic separation, the shape-selective MOF reduced purification costs by 66 percent for a methane stream containing 15 percent nitrogen.

Other potential impurities could also be removed. For methane contaminated with 35 percent carbon dioxide and 15 percent nitrogen, the purification cost was reduced by approximately 73 percent. "We saw a massive reduction in total purification cost when the membrane was used," says Osama Shekhah, a senior research scientist in Eddaoudi's lab. Until now, shape difference in molecular mixtures has been largely ignored, Eddaoudi says. "Shape-mismatch induced separation is a totally new separation mechanism," he says. "Once people focus on shape-mismatch separation, they may find many chemical mixtures, such as linear and branched hydrocarbons or aromatic chemicals, that could be efficiently separated using this concept."

**More information:** Mohamed Eddaoudi, Asymmetric pore windows in MOF membranes for natural gas valorization, *Nature* (2022). [DOI: 10.1038/s41586-022-04763-5](https://doi.org/10.1038/s41586-022-04763-5)

<https://phys.org/news/2022-06-future-purification-molecular-silhouette-compounds.html>



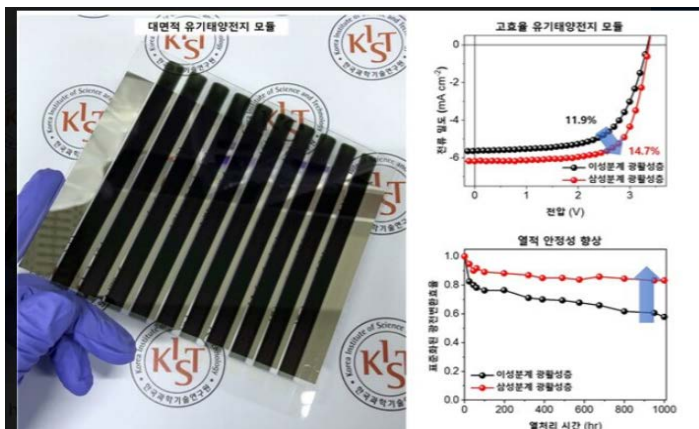
*Tue, 21 Jun 2022*

## **Development of Large Area, Organic Solar Cell Printing Technology**

Solar cell technology is a prominent clean energy source. In particular, organic solar cells, part of the third generation of solar cells, are gaining attention as a core technology for urban solar ray energy generation as they can be printed and applied to exterior walls or glass windows of buildings. However, the photoactive area that absorbs sunlight and converts it to electricity remains significantly smaller than 0.1 cm<sup>2</sup>. Additionally, commercialization is obstructed by performance and reproducibility problems that occur when expanding the cell area to several m<sup>2</sup> where practical energy supply levels are available. A research team led by Dr. Hae Jung Son of the Advanced Photovoltaics Research Center at the Korea Institute of Science and Technology (KIST; President: Seok-Jin Yoon) discovered the factors causing performance degradation in large-area organic solar cells and announced the development of a new polymer additive material

for large-area, organic solar cell technology development. The research team focused on the photoactive layer's compositional form in organic solar cells and the solution process, which is a part of the organic solar cell manufacturing process. The spin coating method, a solution process mainly used in the laboratory research stage, creates a uniform photoactive layer mixture as the solvent evaporates rapidly while the substrate rotates at a high speed. However, the large-area, continuous solution process designed for industrial use caused solar cell performance deterioration because the solar cell material solution's solvent evaporation rate was too slow.

Consequently, unwanted aggregation between the photoactive materials can be formed. The research team developed a polymer additive that can prevent this phenomenon by interacting with materials prone to aggregate. As a result, ternary photoactive layers containing polymer additives were fabricated to prevent aggregation in photoactive layers. Additionally,



(left) high-efficiency, high-stability, organic solar module incorporating ternary photoactive layers. (right) Performance of the high-efficiency, high-stability, organic solar module incorporating ternary photoactive layers.

owing to possible nano-level structure control, solar cell performance improvements and stability security are acquired against light-induced temperature increases during solar cell operation. A 14.7% module efficiency was achieved, resulting in a 23.5% performance increase compared to that of the conventional binary system. Efficiency and stability were simultaneously demonstrated by maintaining over 84% initial efficiency for 1,000 hours, even in an 85°C heated environment.

KIST's Dr. Son stated that they "have gotten closer to organic solar cell commercialization by proposing the core principle of a solar cell material capable of high-quality, large-area solution processing," further expressing that "commercialization through follow-up research will make eco-friendly self-sufficient energy generation possible that is easily applicable to exterior building walls and automobiles and also utilized as an energy source for mobile and IoT devices."

**More information:** Sungmin Park et al, Important role of alloyed polymer acceptor for high efficiency and stable large-area organic photovoltaics, *Nano Energy* (2022).

DOI: [10.1016/j.nanoen.2022.107187](https://doi.org/10.1016/j.nanoen.2022.107187)

<https://techxplora.com/news/2022-06-large-area-solar-cell-technology.html>

