

July - 20

TNPSC BITS

- ❖ Goa has launched India's first Roll on-Roll off (RoRo) ferry service with two new ferries, Gangotri and Dwarka, on the Chorao–Ribandar route across the Mandovi River.
- ❖ India is set to receive Japan's latest E10 Series Shinkansen trains for its first bullet train corridor by 2030.
 - The Shanghai Maglev is the world's first commercial high-speed magnetic levitation (maglev) train, reaching speeds up to 300 km/h (186 mph).
- ❖ WHO has recommended injectable lenacapavir (LEN) twice a year as a new pre-exposure prophylaxis (PrEP) option for HIV prevention.
 - This landmark guideline was announced at the 13th International AIDS Society (IAS) Conference on HIV Science in Kigali, Rwanda.

TAMIL NADU NEWS

Martyrs' Day in Tamil Nadu 2025



- ❖ In Tamil Nadu, Martyrs' Day is observed on January 25th as "Tamil Mozhi Thiyagigal Naal" (Tamil language martyrs' day) from 2025.
- ❖ Additionally, July 17th is also observed as Martyrs' Day in Tamil Nadu.
- ❖ This day is dedicated to the sacrifices of prominent figures in the Tamil movement, such as Thiyagi Arya, Thiyagi Sankaralinganar, and Thiyagi Shenbagaraman.

- ❖ Furthermore, January 30th is observed as Martyrs' Day nationwide, commemorating the death anniversary of MK Gandhi.

Alangudi Hospital - NQAS and Kayakalp certification



- ❖ The Government Hospital in Alangudi, Pudukkottai District, has been awarded the National Quality Assurance Standards (NQAS) and Kayakalp certification for the year 2025-26.
- ❖ NQAS was instituted by the National Health and Family Welfare Department in 2013.
- ❖ It aims to promote the quality of healthcare services in government hospitals and primary health centres.
- ❖ The standards are vetted by the National Society for Quality in External Health Care Quality Association.
- ❖ Kayakalp is a national initiative by the Union Ministry of Health and Family Welfare.
- ❖ It aimed at promoting cleanliness, hygiene, and infection control in public healthcare facilities.
- ❖ It has been rolled out in secondary and primary care facilities in Tamil Nadu through the Directorate of Medical and Rural Health Services and the Directorate of Public Health and Preventive Medicine, respectively.

NATIONAL NEWS

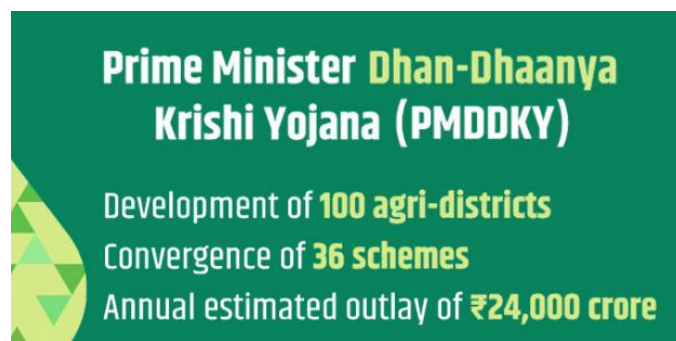
Machilipatnam greenfield port

- ❖ Around 48% of the construction of the Machilipatnam Greenfield Port in Andhra Pradesh is complete; operations may begin by the end of 2026.

- ❖ Machilipatnam (Masulipatnam) was a major port city since the Satavahana era and flourished under the Golconda Sultanate.
- ❖ It was once a global trade hub for muslin and textiles, with Dutch, British, and French trade posts in the 17th century.
- ❖ It will boost exports and imports (coal, cement, pharma, fertilisers, containers) and connect inland via a proposed dry port in Telangana.



PM Dhan-Dhaanya Krishi Yojana (PM-DDKY)



- ❖ The Union Cabinet approved the PM Dhan-Dhaanya Krishi Yojana (PM-DDKY) targeting 100 agricultural districts from 2025–31.
- ❖ The scheme has an annual budget of ₹24,000 crore for 6 years, aiming to boost productivity, irrigation, storage, and credit in low-performing regions.
- ❖ It follows the Aspirational Districts Programme model and integrates 36 schemes across 11 ministries through state, district, and private partnerships.



- ❖ District-specific agriculture & allied plans will be made under the DDKY Samiti, headed by the District Collector.
- ❖ Progress will be tracked using 117 performance indicators via a central dashboard, with NITI Aayog offering strategic guidance.

India's total installed electricity capacity in 2025

A. Installed Electricity Capacity by Source as on 30.06.2025 (RE + Large Hydro Combined)		
Sector	Capacity (in GW)	Percentage
Thermal	242.04 GW	(49.92%)
Nuclear	8.78 GW	(1.81%)
RE (including Large Hydro)	234.00 GW	(48.27%)
Total	484.82 GW	(100%)

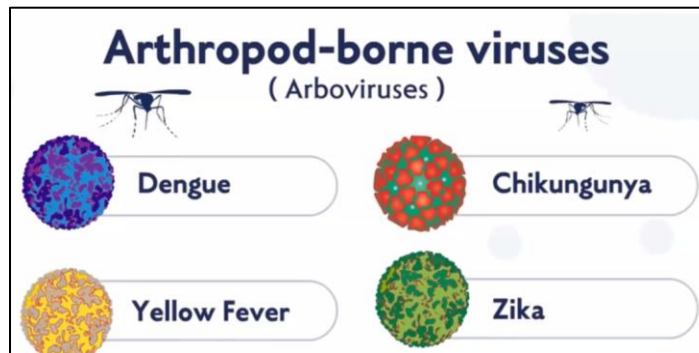
- ❖ India has achieved 50% of its installed power capacity from non-fossil fuel sources.
- ❖ It was five years ahead of the target set in the Nationally Determined Contributions (NDCs).
- ❖ As of June 30, India's total installed electricity capacity was 484.82 GW.
- ❖ It comprises 242.04 GW (49.9%) from thermal energy sources and 242.78 GW (50.1%) from non-fossil sources.
- ❖ It included renewables, large hydro, and nuclear power.
- ❖ At the COP26 climate conference in 2021, held in Glasgow, Scotland, the United Kingdom, India announced its goal of achieving 50% of its cumulative electricity capacity from non-fossil fuel resources by 2030, under its NDC targets.
- ❖ Other goals also include installing 500 gigawatts (GW) of non-fossil electricity capacity, reducing projected carbon emissions by one billion tonnes, and reducing the emissions intensity of its GDP by 45%, also by 2030.
- ❖ Despite having one of the lowest per capita emissions globally, India remains among the few G20 countries that are on track to meet—or even exceed—their NDC commitments.
- ❖ India is supposed to submit its new and more ambitious NDC in 2025.

INTERNATIONAL NEWS

Guidelines for arboviral diseases

- ❖ The World Health Organisation (WHO) has released its first global guidelines to treat arboviral diseases like dengue, chikungunya, Zika, and yellow fever.

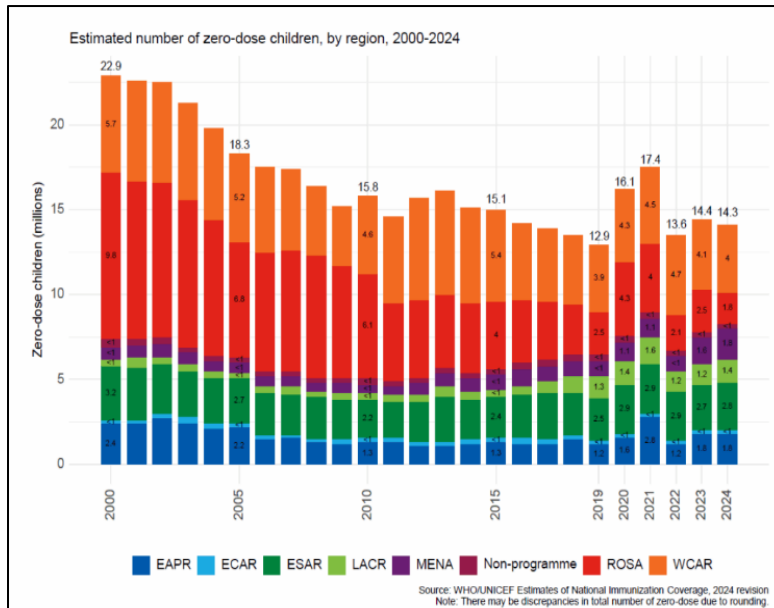
- ❖ These diseases, spread by mosquitoes, are rising quickly due to climate change, global travel, and weak health systems.
- ❖ Over 5.6 billion people are at risk of getting arboviral diseases, which often begin with fever, rash, and joint pain.
- ❖ The new guidelines help doctors and nurses treat both mild and severe cases of arboviral diseases safely and correctly.
- ❖ These clear steps aim to lower death and complications, especially where health resources are limited.



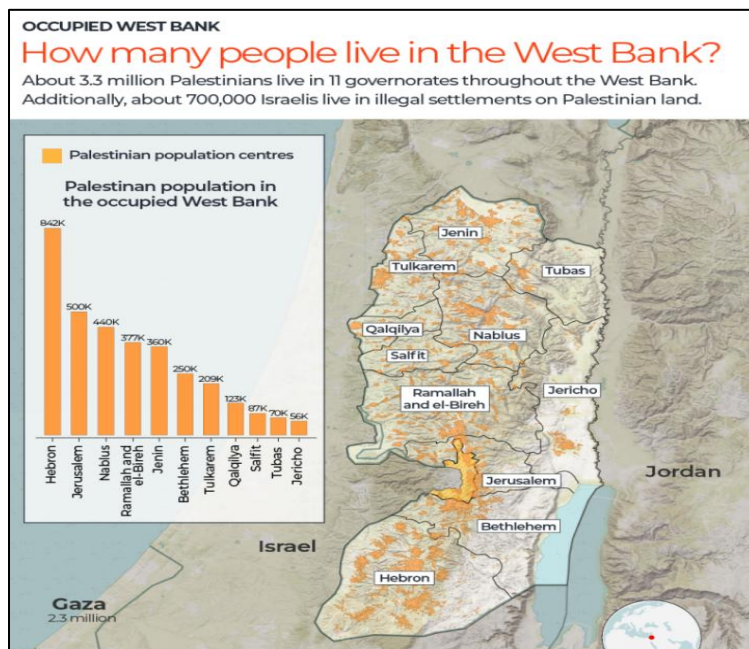
South Asia's vaccine coverage

- ❖ As per the data of WHO and UNICEF, South Asia has reached its highest-ever immunisation coverage for children in 2024.
- ❖ India recorded a 43% drop in zero-dose children, reducing the number from 1.6 million in 2023 to 0.9 million in 2024.
- ❖ Nepal achieved a 52% reduction in zero-dose children, from 23,000 to 11,000.
- ❖ Pakistan has recorded its highest-ever coverage for the third dose of Diphtheria, Tetanus, and Pertussis (DTP3) vaccine at 87%.
- ❖ Afghanistan's vaccination coverage declined by 1 percentage point, remaining the lowest in the region.
- ❖ In 2024, 92% of infants in South Asia received the third dose of DTP vaccine, up 2 points from 2023; first-dose coverage rose from 93% to 95%.
- ❖ Zero-dose children in the region dropped 27%, from 2.5 million to 1.8 million.
- ❖ Human Papillomavirus (HPV) vaccine coverage for adolescent girls increased from 2% in 2023 to 9% in 2024.
- ❖ Bangladesh has vaccinated over 7.1 million girls since launching HPV vaccination in 2023.
- ❖ Nepal launched its national HPV vaccination campaign in February 2025, vaccinating over 1.4 million girls.

- ❖ India and Pakistan plan to start HPV vaccination programs later in 2025.
- ❖ Despite gains, over 2.9 million children in South Asia remain either unvaccinated or have not received all recommended vaccines.



Largest displacement - West Bank

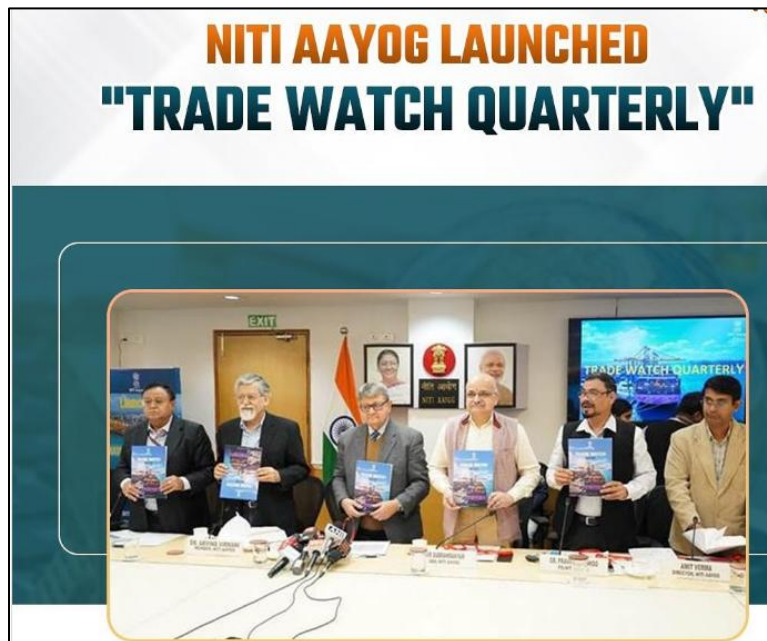


- ❖ As per the UN data, the West Bank is experiencing its largest displacement since Israel's occupation began in 1967.

- ❖ An Israeli military operation launched in January 2025 has forced about 30,000 Palestinians to flee, with thousands of homes demolished.
- ❖ Violence has surged since the October 2023 Hamas attack, with nearly 1,000 Palestinians and over 50 Israelis killed in the region.
- ❖ Settler attacks have also increased, causing injuries and further displacements.

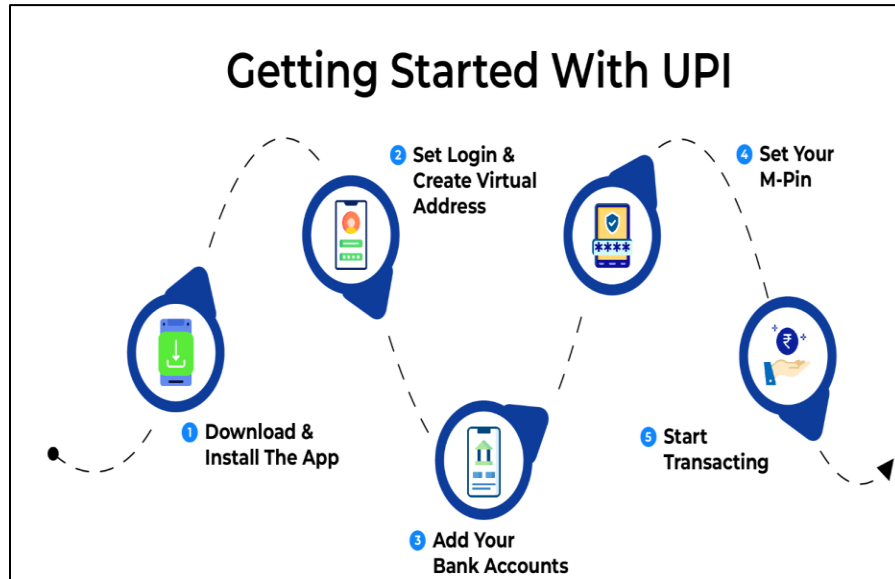
ECONOMY NEWS

Q3 edition of Trade Watch Quarterly 2025



- ❖ NITI Aayog launched the third edition of Trade Watch Quarterly in New Delhi, covering Quarter 3 of Financial Year 2024–25 (October to December 2024).
- ❖ India's merchandise exports grew by 3% to USD 108.7 billion, while imports rose by 6.5% to USD 187.5 billion during Q3.
- ❖ The Services exports increased by 17%, contributing to a services surplus of USD 52.3 billion, helping offset the trade deficit.
- ❖ Digitally Delivered Services (DDS) exports have reached USD 269 billion in 2024, ranking India fifth globally in this segment.
- ❖ High-tech merchandise exports such as electrical machinery and arms grew at a 10.6% compound annual growth rate (CAGR) since 2014.
- ❖ Aircraft, spacecraft, and related parts entered the top ten exports list with over 200% year-on-year growth.

13 More Indian Banks in UPI



- ❖ The NPCI International adds 13 more banks in UPI-PayNow linkage to ease remittances.
- ❖ The NPCI International Payments Ltd (NIPL) is the international arm of the National Payments Corporation of India (NPCI).
- ❖ It is extending its reach and simplifying cross-border remittances between India and Singapore.
- ❖ It facilitates real-time cross-border fund transfers between individuals.
- ❖ Now, the Indian users can receive funds via UPI ID and send funds to users in Singapore via their mobile number or Virtual Payment Address (VPAs).
- ❖ The UPI-PayNow service was launched as a joint initiative between the RBI and the Monetary Authority of Singapore (MAS).
- ❖ The expanded network for remittances to India now includes 19 banks.

SCIENCE AND TECHNOLOGY NEWS

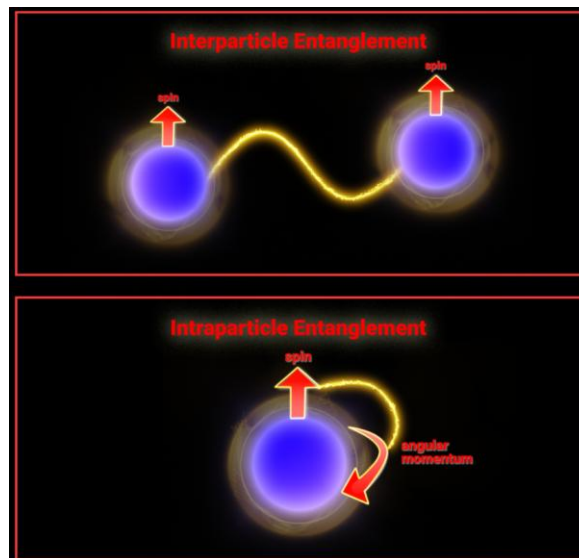
Super Earth - TOI-1846 b

- ❖ NASA has discovered a new planet called TOI-1846 b, located 154 light-years from Earth.
- ❖ The planet is about twice the size of Earth and four times heavier.
- ❖ This places it in a rare group known as the “radius gap” between the small rocky planets and large gas giants.

- ❖ TOI-1846 b orbits a red dwarf star in the Lyra constellation and completes a full orbit in just under four days.
- ❖ The planet may have a thin atmosphere with a layer of ice or a shallow ocean underneath, though life is unlikely due to extreme heat.



Quantum noise



- ❖ The Scientists from the Raman Research Institute (RRI) have discovered quantum noise.
- ❖ It can generate and revive entanglement in certain quantum systems.

- ❖ Using the Global Noise Model, researchers proved that amplitude damping (a type of noise simulating energy loss) can not only destroy but also create entanglement under the right conditions.
- ❖ The findings could advance quantum communication and computing.

Cyborg bees

- ❖ Chinese scientists have created the world's lightest brain controller (74 mg) to turn real bees into cyborgs for potential military use.
- ❖ The tiny device is strapped to the bee's back and pierces its brain, sending the electronic signals that control movement.
- ❖ The brain controller is insect-specific, meaning the same device can't work on different bugs without redesign.



The biggest black hole merger



- ❖ The Scientists detected the most massive black hole merger ever recorded using gravitational wave detectors.
- ❖ The colliding black holes were 103 and 137 times the mass of the Sun.
- ❖ They are merging into a single black hole 265 times more massive than the Sun.
- ❖ The event occurred 10 billion light years from Earth and caused space-time ripples detected by LIGO.
- ❖ The black holes were spinning about 400,000 times faster than Earth.
- ❖ Scientists believe the black holes may have been formed from previous black hole mergers, explaining their large mass and rapid spin.
- ❖ So far, around 300 black hole mergers have been recorded, and this is the most massive and possibly most complex.

Israel's Dror-1



- ❖ Israel launched its first fully government-funded and locally built communication satellite, Dror-1.
- ❖ It is a geostationary satellite positioned 36,000 km above the Earth's equator.
- ❖ Dror-1 is expected to serve national communication needs for 15 years.
- ❖ After reaching geostationary transfer orbit, it will use onboard propulsion to settle into its final orbit, maintaining communication over Israel and nearby regions.

Neuralink's speech restoration

- ❖ Neuralink has made strides in restoring communication for individuals with severe speech impairments.

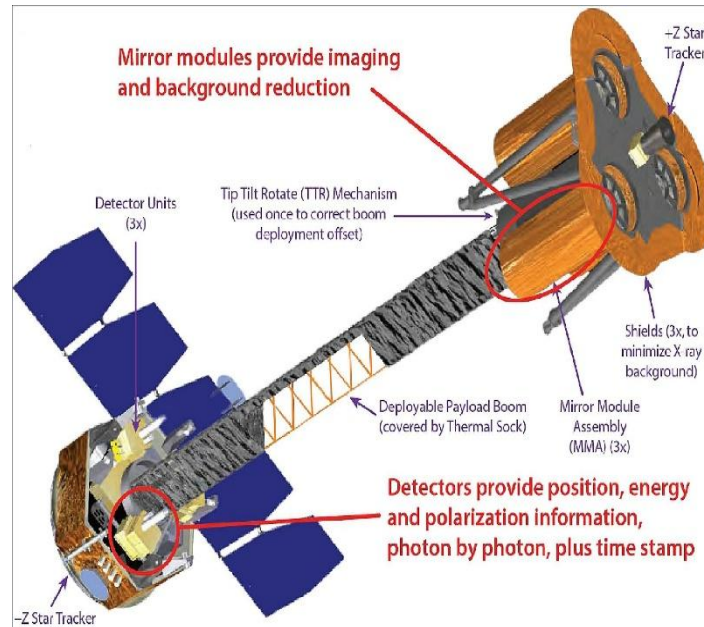
- ❖ Recently, the US Food and Drug Administration (FDA) has granted the company a Device Designation for its innovative brain-chip technology.
- ❖ This designation is awarded to the medical devices that promise more effective treatment for life-threatening conditions.
- ❖ The device would help those affected by amyotrophic lateral sclerosis (ALS), stroke, spinal cord injury, cerebral palsy, multiple sclerosis, and some other neurological conditions.
- ❖ Neuralink was a neurotechnology company founded by Elon Musk.



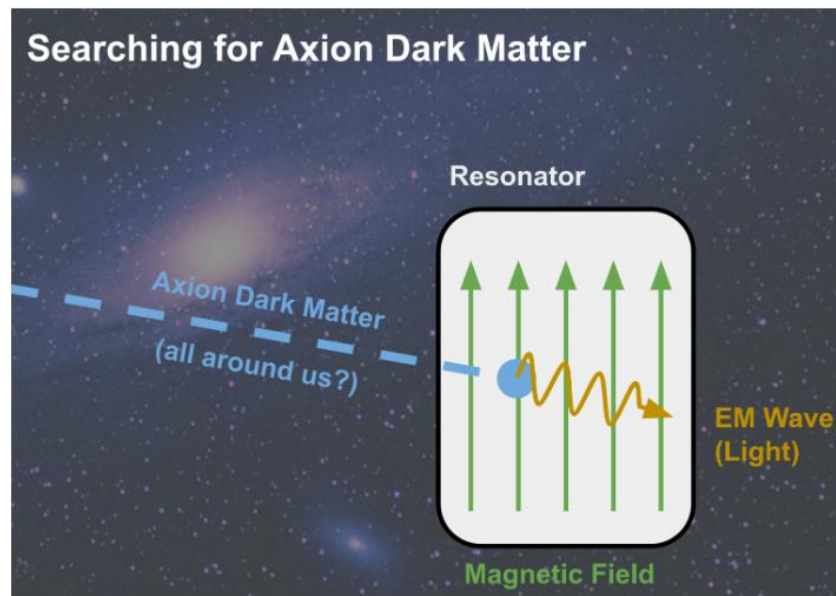
Blazar BL Lacertae's X-ray Emissions

- ❖ The blazar BL Lacertae is known for its intense jets directed towards Earth.
- ❖ It has become a focal point for understanding X-ray emissions in extreme environments.
- ❖ NASA's Imaging X-ray Polarimetry Explorer (IXPE) played an important role in this exploration.
- ❖ It was collaborating with the ground-based telescopes to unravel the mechanisms behind X-ray generation in blazar jets.
- ❖ Blazars are a type of active galactic nucleus.
- ❖ They host supermassive black holes at their centres.
- ❖ These black holes emit jets of particles moving close to the speed of light.

- ❖ BL Lacertae is one of the first blazars discovered and is located in the Lacerta constellation.
- ❖ Its study is vital for understanding the behaviour of matter and energy in extreme gravitational fields.



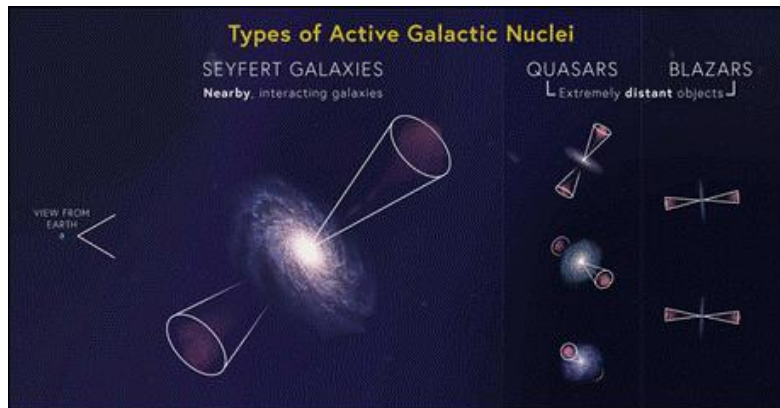
HAYSTAC Experiment 2025



- ❖ The HAYSTAC (Haloscope at Yale Sensitive to Axion Cold Dark Matter) experiment is a leading research initiative aimed at detecting axions.

- ❖ These hypothetical particles are considered promising candidates for dark matter.
- ❖ HAYSTAC has reported the most extensive search for axions to date, employing innovative techniques to enhance sensitivity.
- ❖ Axions are the hypothetical elementary particles proposed to resolve a major inconsistency in particle physics known as the strong CP problem.
- ❖ They are neutral (no electric charge) and are believed to have extremely small mass.
- ❖ The CP symmetry refers to the combined transformation of “C (Charge): Switching particles with their antiparticles” and “P (Parity): Reversing spatial coordinates (like a mirror image)”.

Active Galactic Nucleus



- ❖ Astronomers have detected 11 new Active Galactic Nuclei (AGNs) during their all-sky X-ray surveys.
- ❖ For that, they were using the Spektr-RG (SRG) space observatory.
- ❖ Active Galactic Nuclei (AGNs) are compact regions at the centres of galaxies.
- ❖ It emits exceptionally high levels of electromagnetic radiation, often outshining the rest of the galaxy.
- ❖ This intense emission arises from either accretion of matter by a supermassive black hole or intense star formation activity.
- ❖ AGNs are among the very most luminous and persistent energy sources in the universe and are critical to understanding galaxy formation and evolution.

Aminated Graphene Supercapacitor

- ❖ The Scientists from the Nagaland University have developed a supercapacitor material that charges faster, lasts longer.

- ❖ It outperforms traditional lithium-ion batteries.
- ❖ Supercapacitors are energy storage devices that bridge the gap between conventional capacitors and batteries.
- ❖ The research focuses on aminated graphene, derived from reduced graphene oxide.
- ❖ This material is produced using a streamlined, single-step process that converts ordinary graphite into high-performance aminated graphene.

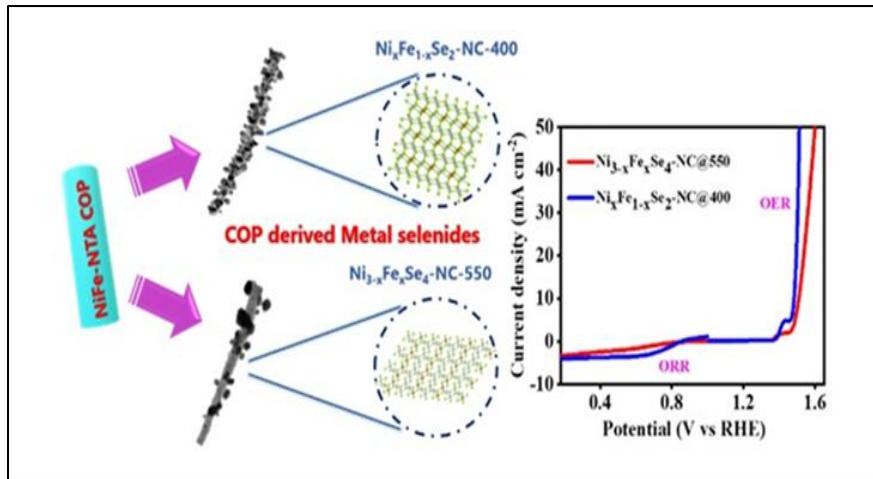


**BREAKTHROUGH BY NU SCIENTISTS BOOSTS
NEXT-GEN ENERGY STORAGE TECH**

Oxygen Electrocatalysis Efficiency

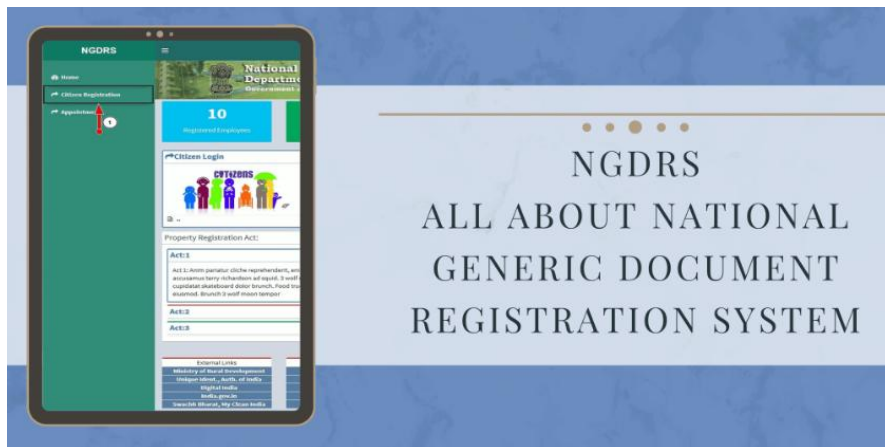
- ❖ Researchers have created a new catalyst designed to make crucial oxygen-related catalytic reactions faster, more affordable, and efficient.
- ❖ They are from the Centre for Nano and Soft Matter Sciences (CeNS), Bengaluru.
- ❖ It enhances oxygen-related electrocatalytic reactions.
- ❖ This catalyst aims to improve the efficiency and affordability of clean energy technologies.
- ❖ Traditional catalysts often rely on expensive precious metals, which pose cost and performance challenges.
- ❖ The new catalyst, developed using nickel selenide with iron doping, promises to address these issues effectively.
- ❖ Electrocatalysis is vital for clean energy applications.
- ❖ It plays an important role in processes like water splitting for hydrogen production and the synthesis of chemicals such as hydrogen peroxide.

- ❖ The research team began with metal-organic frameworks (MOFs).
- ❖ These materials have a porous structure ideal for chemical reactions but lack electrical conductivity.



STATES' NEWS

Himachal Pradesh - 'My Deed' NGDRS project



- ❖ Himachal Pradesh launched the 'My Deed' NGDRS (National Generic Document Registration System) pilot project to modernise land registration.
- ❖ The system allows online property registration, requiring citizens to visit the tehsil offices only once for the final steps.
- ❖ The pilot has also been implemented in 10 tehsils across 10 districts, including Bilaspur Sadar, Dalhousie, Bhuntar, and Rajgarh.
- ❖ The very Key digital reforms include a new Jamabandi format in simple Hindi, e-Roznamcha Vakhyati (the digital Patwari diary), and Kaarguzari (the online work reporting).

- ❖ The state aims to implement 'Khangri Takseem' in mission mode, moving toward a 'Single Khata, Single Owner' model to reduce disputes in joint land ownership.

Punjab - New Anti-Sacrilege Bill



- ❖ The Punjab government introduced the Punjab Prevention of Offences against holy Scriptures Bill, 2025.
- ❖ The Bill criminalises sacrilege against sacred texts to protect religious harmony.
- ❖ It covers scriptures from multiple faiths, including the Sri Guru Granth Sahib, Srimad Bhagavad Gita, Quran Sharif, and Holy Bible.
- ❖ The Bill prescribes imprisonment from a minimum of 10 years up to life and fines ranging from Rs 5 lakh to Rs 10 lakh for sacrilege convictions.
- ❖ Attempted sacrilege attracts 3 to 5 years imprisonment and fines up to Rs 3 lakh.
- ❖ Abetment is also punishable.
- ❖ The Punjab government did not consult the Union Law Ministry before drafting the bill.

Chin refugees to Mizoram

- ❖ Over 4,000 refugees from Myanmar's Chin State entered Mizoram's Champhai district in July 2025 following violent clashes between Chin rebel groups.

- ❖ The Chins are an ethnic group related to the Mizos in India.
- ❖ Many are part of anti-junta groups fighting Myanmar's military.
- ❖ Mizoram's Mizo people have strong ties with the Chins, but border movement was stopped in 2024.
- ❖ Mizoram provides shelter and aid but faces high resource pressure and seeks permission to register non-citizens.



Behdeinkhlam festival 2025



- ❖ The Behdeinkhlam Festival was celebrated in Jowai, Meghalaya, reflecting the cultural heritage of the Pnar community.
- ❖ The term "Behdeinkhlam" means "driving away the plague," symbolising spiritual purification and community strength.
- ❖ The celebrations held across West Jaintia Hills, featuring colourful processions and tall decorative structures known as Rots.

India's First Aqua Tech Park



- ❖ Assam's Chief Minister opened the country's first Aqua Tech Park in Sonapur, near Guwahati.
- ❖ Although Assam has many rivers, it still depends on other states like Andhra Pradesh to meet its fish demand.
- ❖ Assam doubled its fish production to 4.99 lakh metric tonnes, making it the fourth-largest fish-producing state in India.
- ❖ Andhra Pradesh emerges as the largest fish-producing state in India.
- ❖ In 2024, Andhra Pradesh was followed by West Bengal, Gujarat and Kerala.

