

Frank

EMU BOOKS

**CURRENT
CAFEAIRS**

**DEC 2025
VOL 12**

IMPORTANT EVENTS

IMPORTANT DATES

**DETAILED EXPLANATION
OF EACH EVENT**

China sets new maglev speed record in superconducting test

December 30, 2025



- **China has set a new world record by accelerating a one-ton superconducting maglev vehicle from 0 to 700 km/h in about 2 seconds.**
- The test was conducted on a 400-metre track, demonstrating extreme acceleration capability.
- Magnetic levitation (maglev) technology uses magnetic fields to suspend, guide, and propel vehicles without physical contact.

Sharadchandra Pawar Centre of Excellence in AI Launched

December 30, 2025

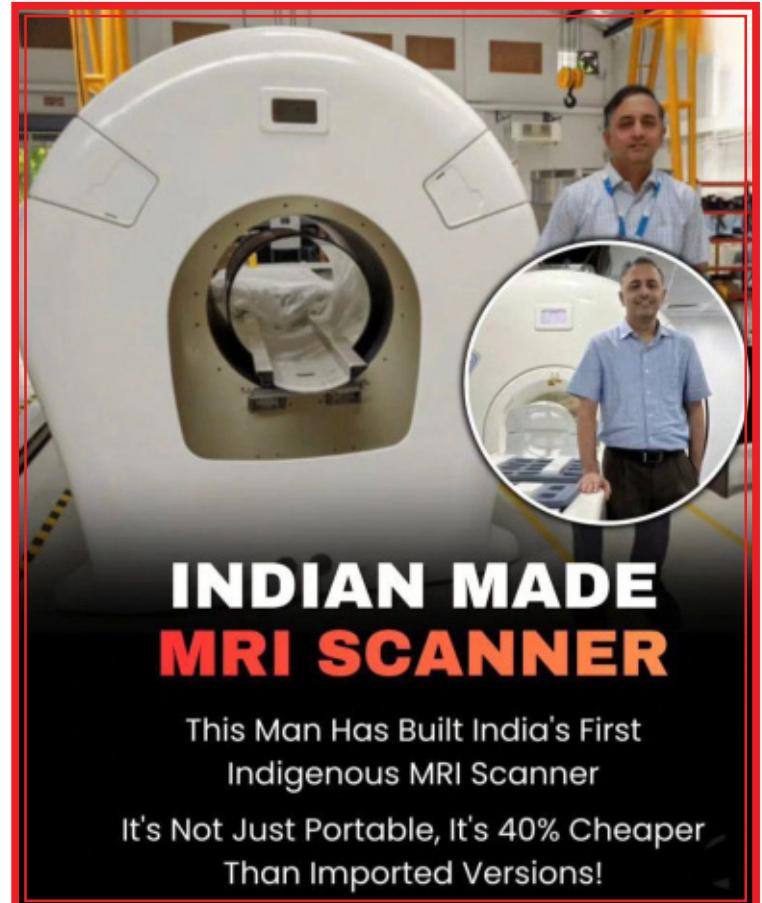
- **Gautam Adani inaugurated the Sharadchandra Pawar Centre of Excellence in AI on December 28, 2025.**
- Funded by the Adani Group, the centre aims to transform rural development through AI research.
- The event saw a rare reunion of the Pawar family, including Ajit Pawar and Supriya Sule.



India's first indigenous MRI scanner developed by Voxel Grids

December 29, 2025

- **Voxel Grids, a Zoho-backed Indian startup, has developed India's first indigenous MRI scanner.**
- The 1.5-tesla MRI scanner has been deployed at Chandrapur Cancer Care Foundation near Nagpur.
- The MRI scanner is indigenously designed and manufactured in India.
- **It uses a unique design that avoids liquid helium, drastically cutting manufacturing costs (around 40% cheaper) and operational expenses.**



ISRO Successfully Launches BlueBird Block-2 Communication Satellite

December 26, 2025

- **ISRO successfully launched the BlueBird Block-2 communication satellite from Sriharikota.**
- The satellite was carried by LVM-3, ISRO's heavy-lift launch vehicle, popularly known as 'Baahubali'.
- **The satellite enables direct broadband connectivity to smartphones without special satellite phones.**



India Optel Limited (IOL) signs Agreement with French Company to Make Defence Systems in India

December 24, 2025

- **India Optel Limited (IOL) partnered with France's Safran Electronics & Defence to manufacture advanced defence systems, boosting domestic defence production under the 'Make in India' and 'Atmanirbhar Bharat' initiatives for self-reliance in critical defence.**
- This partnership will enhance indigenous manufacturing, reduce import dependency, facilitate technology transfer, and create skilled jobs.



Astronomers detect rare superkilonova 1.3 billion light-years away

December 23, 2025



- Researchers observed a bright cosmic event 1.3 billion light-years away.
- The event may be a superkilonova, a rare and energetic cosmic explosion.
- Kilonovae occur when two neutron stars merge, ejecting heavy elements like gold and platinum.

- The radioactive decay of these elements produces visible light.

ISRO completes drogue parachute tests for Gaganyaan Crew Module

December 22, 2025

- **ISRO successfully conducted drogue parachute qualification tests for the Gaganyaan Crew Module.**
- **Drogue parachutes help stabilise and slow the Crew Module during re-entry to Earth.**



German Engineer Becomes First Wheelchair User in Space

December 22, 2025

- **Michaela Benthäus, an engineer from Germany with paraplegia, has become the world's first wheelchair user to go into space.**
- She flew on a suborbital mission conducted by Blue Origin, marking the firm's 16th crewed flight.
- **The 11-minute mission reached about 100 km altitude, offering brief weightlessness and setting a milestone for inclusive space travel.**



ISRO Launches RESPOND Basket 2025 to Boost Space Research

December 20, 2025



- **The Indian Space Research Organisation (ISRO) has launched the RESPOND Basket 2025.**
- The initiative invites research proposals from premier universities, recognised academic institutions, and R & D organisations across India.
- **It supports ISRO's upcoming projects, including Bharatiya Antariksh Station, Chandrayaan-4, Gaganyaan missions, Venus orbiter, and a human Moon landing.**

Maitri II: India's Next-Generation Antarctic Research Station by 2032

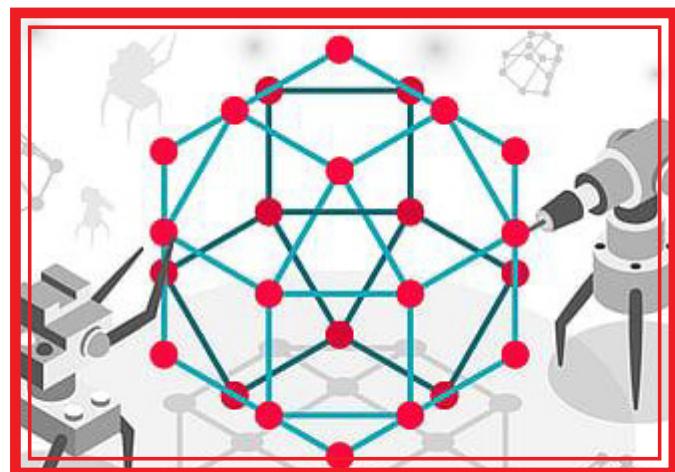
December 17, 2025

- **Maitri II is India's upcoming next-generation research station in East Antarctica, with an expected completion by 2032.**
- The project has an estimated cost of ₹2,000 crore.
- Its purpose is to serve as India's primary year-round research base, focusing on climate change, glaciology, atmospheric sciences, biology, and environmental monitoring.



Indian Scientists Develop Multi-Target Alzheimer's Therapy

December 17, 2025



- **INST Mohali (DST) developed a nanoparticle-based therapy for comprehensive Alzheimer's treatment, addressing disease progression & cognitive decline.**
- Unlike older drugs targeting just one aspect, these nanoparticles simultaneously attack four major Alzheimer's hallmarks: amyloid aggregation, oxidative stress, inflammation, and neuron degeneration.

India Launches Indigenous DHRUV64 Microprocessor

December 17, 2025

- **India has launched DHRUV64, a general-purpose microprocessor, strengthening self-reliance in semiconductor technology.**
- It has been developed by C-DAC under the Microprocessor Development Programme (MDP) of the Government of India.
- Designed for telecom base stations, automotive electronics, IoT, industrial automation, and defence systems.



Google's Project Suncatcher to Build Solar AI Data Centres in Space

December 15, 2025



- Google CEO Sundar Pichai announced Project Suncatcher, a long-term research initiative to deploy solar-powered data centres in space by 2027.

- The project explores satellite constellations equipped with high-performance AI hardware, inspired by Starlink-like networks but focused on space-based computing, not internet services.

- **These satellites will operate entirely on solar energy.**

GlowCas9 Enables DNA Editing with Real-Time Bioluminescent Tracking

December 12, 2025

- **GlowCas9 is a newly engineered variant of the CRISPR–Cas9 enzyme that emits light during DNA editing, enabling real-time observation of gene editing.**
- It has been developed at the Bose Institute, Kolkata.
- **The bioluminescence allows tracking of the gene-editing process in living cells, tissues, and even plant leaves without harming cells.**

