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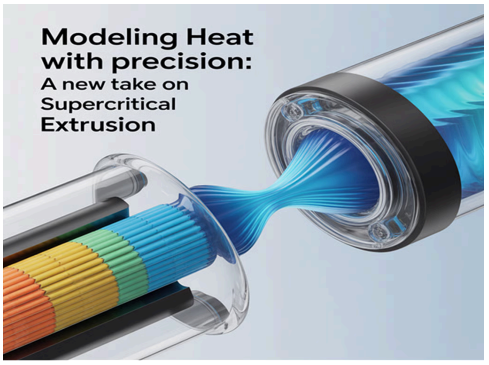
ATHARVA ROBOTICS CENTER

Daily News on Innovation & Technology

04th July, 2025

Modeling the Heat: A Semiconductor Revolution Sparked by Supercritical Thinking



By Arundhati Kumar, July 03, 2025

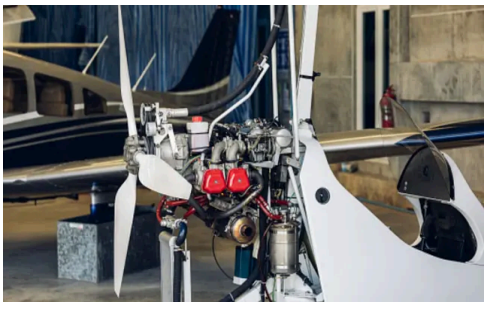
In a time when controlling thermal quantities governs the performance and yield of semiconductor devices, Sugirtha Krishnamurthy has created an exciting innovation in thermal modeling for Rajamanickam Gopirajah, Tina Ying Pan, and Syed S.H. Rizvi.

Shubhanshu Shukla working to develop brain-computer interface in space

By Benefit News Desk, July 03, 2025

Shubhanshu Shukla, India's first astronaut aboard the International Space Station (ISS), is spearheading a cutting-edge experiment to develop a brain-computer interface (BCI) in space, NASA announced Thursday.

China's first fully 3D-printed mini jet engine soars to 13,000 feet in debut test



By Aman Tripathi, July 03, 2025

China has conducted a successful maiden flight of a miniature turbojet engine manufactured entirely with 3D printing, a development that explores new methods for tackling difficulties in aerospace propulsion.

Amazon reveals DeepFleet, its AI model developed for robotics

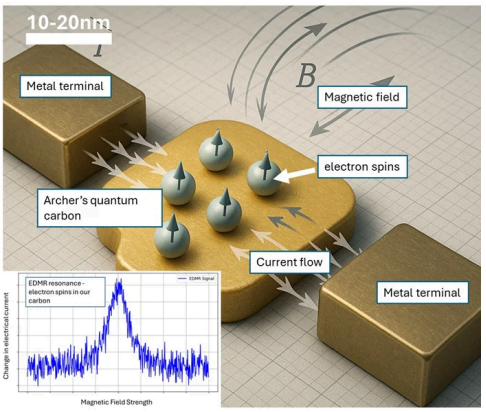
By Beth Duckett, July 03, 2025

Amazon said it's applying a new artificial intelligence (AI) model, called DeepFleet, to coordinate its growing fleet of warehouse robots, which now tops 1 million.

Archer Advances Quantum Technology with On-Chip Electrical Detection of Spin Resonance

By Archer Materials Limited, July 03, 2025

Archer Materials Limited ("Archer"), a semiconductor company advancing quantum technology and medical diagnostics industries, has achieved a significant milestone in its quantum technology development by demonstrating electrical detection of electron spin resonance (EDMR) on its carbon qubit film material.



China claims to have built first quantum-attack-proof blockchain storage tech

By Kapil Kajal, July 03, 2025

Chinese scientists claim to have created a new blockchain storage system that they say can resist attacks from quantum computers.

Solar farm construction robot with 10x more efficiency to be deployed in Australia

By Prabhat Ranjan Mishra, July 03, 2025

An efficient robot designed to automate solar panel installation will now begin working in Australia with a new funding boost.

News Articles

Startups To Giants: India Rides The AI Wave to Sustainability

TIMES NEWS NETWORK

India is fast becoming a global vanguard in marrying artificial intelligence (AI) with sustainable development. As the world faces mounting climate challenges, the country's businesses, ranging from IT behemoths to climate-tech start-ups, are weaving AI into the fabric of their green goals, making India one of the most AI-active nations in sustainability initiatives.

A striking 64% of Indian companies are now actively deploying AI to boost the impact of their sustainability efforts — the highest proportion among surveyed countries, according to IBM's 2024 sustainability readiness study. This isn't just a sign of technological enthusiasm, but of a maturing mindset that places environmental responsibility at the heart of corporate strategy.

India's journey is as much about economic transformation as it is about ecological conscience. In 2022–23, the digital economy accounted for nearly 12% of the national income, underlining the country's success in harnessing tech for green growth.

Take Infosys, for instance. The IT giant achieved carbon neutrality in 2020 — well ahead of global targets — by using AI and digital tools to drive energy efficiency, adopt renewables, and run offset projects that also benefit rural communities. The company was also the first Indian firm to join the RE100 initiative, committing to 100% renewable electricity.

But it's not just industry titans making waves. India's climate-tech ecosystem now boasts over 800 operational start-ups, which have collectively raised more than $3.6 billion between 2014 and 2024.

Among them is Alt Carbon, a venture leading the charge in carbon removal technologies. The company combines geochemical innovation, environmental data platforms, and scientific validation to sequester CO_2 through enhanced rock weathering and soil improvement on farmland. With its cutting-edge platform 'Atlas', Alt Carbon can monitor soil chemistry, water dynamics, and ecosystem health at high resolution, and aims to remove 5 million metric tons of CO_2 by 2030.

AI and other emerging technologies like IoT (internet of things), 5G, and blockchain are transforming how Indian enterprises think about sustainability. From resource-efficient smart grids to traceable, ethical supply chains and real-time emissions monitoring, digital tools are offering tangible solutions to previously intractable problems.

This momentum is also evident in platforms such as EY's ESG Compass, which supports businesses in navigating ESG (Environmental, Social & Governance) goals through data automation, risk analytics, and benchmarking tools. Such solutions are helping organisations make more informed, sustainable decisions while increasing transparency for stakeholders.

Yet, as PM Narendra Modi recently reminded the world at the AI Action Summit 2025, sustainable AI must not merely be powered by clean energy, but also be efficient by design—light on data, lean on compute power, and accessible to the broader developer community. "After all," he said, "the human brain can compose poetry and design spaceships while using less power than most light bulbs."

Indeed, while AI tools are proving their worth, there are pressing concerns that must be addressed — particularly around data privacy, interoperability, and ethical design. Most current sustainability-driven AI tools focus on energy emissions during training, often ignoring emissions during the deployment and inference phases. Moreover, many are tailored for highly skilled developers, limiting access for users relying on APIs or no-code platforms.

As The Times of India Social Impact Summit approaches, the conversation is expected to pivot around these very themes: how to scale tech-enabled ESG and CSR (Corporate Social Responsibility) efforts, ensure inclusive adoption, and drive measurable impact.

With diverse stakeholders converging, the summit presented by Malabar Gold & Diamonds — Ernst & Young is knowledge partner — aims to serve as a crucible for collaboration and future-ready sustainability solutions. It is being held on July 11 and 12, 2025, in Mumbai.

INDIA AT THE FOREFRONT

64% of surveyed Indian companies use AI for sustainability

Digital economy forms 11.7% of India's national income ('22-23)

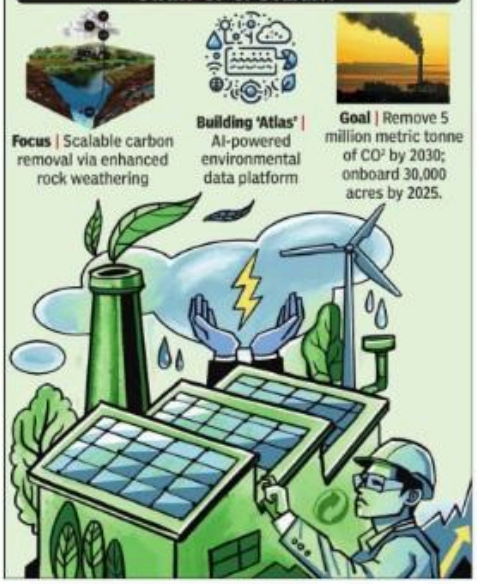
Case Study – Infosys

- Achieved carbon neutrality in 2020.
- First Indian firm in RE100 (100% renewable power pledge).
- AI used in energy efficiency, offsets, and solar adoption.

Key Enabling Tech

- **AI & Generative AI** | Climate modelling, emissions tracking, ESG reporting.
- **IoT & 5G** | Real-time resource monitoring & smart infra
- **Blockchain** | Transparent, traceable supply chains
- **Geospatial Data + AI** | Detecting land-use change, forest cover shifts

START-UP SPOTLIGHT



Focus | Scalable carbon removal via enhanced rock weathering

Building 'Atlas' | AI-powered environmental data platform

Goal | Remove 5 million metric tonne of CO_2 by 2030; onboard 30,000 acres by 2025.

Source: The Times of India Newspaper, 04-07-2025
Page No 18

Link: https://drive.google.com/file/d/1hozd3HyGGWzQouWs4SZ2k8_zl53OxsK-/view

Ten Isro technologies transferred to 6 Indian companies, says IN-SPACe

New Delhi: The country's space regulator-cum-promoter Indian National Space Promotion and Authorisation Centre (IN-SPACe) on Thursday said it facilitated the transfer of 10 state-of-the-art technologies developed by Isro to six Indian companies, reports **Surendra Singh**.

The tripartite technology transfer agreements, signed among NewSpace India Limited (NSIL), six companies and IN-SPACe at the regulator's headquarters in Ahmedabad, will give private players the opportunity to access developed technologies available with Isro, enabling them to use space-related technology for commercial applications in space as well as other sectors. The technologies that foster satellite launch, ground station infrastructure and geospatial applications are expected to deepen industry participation, enable indigenisation and reduce dependency on foreign technologies.

Source: The Times of India Newspaper, 04-07-2025
Page No 18

Link: https://drive.google.com/file/d/1hozd3HyGGWzQouWs4SZ2k8_zl53OxsK-/view

From space station, Shukla leaves children mesmerised

Godhooli Sharma
godhooli.sharma@htlive.com

LUCKNOW: When Shuchi Mishra saw her brother floating in the International Space Station during their video call on Thursday, she recognised something familiar. "I felt a similar spark in his eyes as I used to see when he was a child," she said of Group Captain Shubhanshu Shukla. "He was curious, exploring everything and wanting to show us everything."

The tele-bridge connection had brought the Shukla family face to face with their astronaut son and brother for the first time since his launch on June 25. His mother Asha was overwhelmed as Shubhanshu guided them through his orbital home, showing them how he lived, ate, and even slept floating against walls in a sleeping bag. His father Shambu Dayal watched with a mixture of pride and relief—the first three days had been difficult for his son as he adapted to weightlessness.

"We are happy that he is now in a healthy zone because he found it difficult to adapt in the first three days," Mishra said. The family had experienced their own form of weightlessness during the call, watching their loved one demonstrate life 400 kilometres above Earth. "When the call ended, we could only say that he is our hero."

On Thursday, Group Captain Shukla held live video conferences from the ISS, speaking with his family in Lucknow and with hundreds of school students.

Group Capt Shubhanshu Shukla, who is aboard the International Space Station, during a video interaction on Saturday. ANI

During the calls, he demonstrated daily life in microgravity, discussed the physical challenges of space adaptation, and shared details about eating, sleeping, and exercising in weightlessness.

The first minutes after launch had felt "as if somebody pushed him hard on his seat," Shukla told students during a separate video conference from his family. The subsequent days brought nausea and disorientation as his brain struggled to interpret motion without the gravitational cues it had relied upon for 39 years. His face had grown puffy as blood redistributed in microgravity, no longer pulled downward by Earth's relentless tug.

But by Thursday, speaking to over 500 students gathered at City Montessori School in Lucknow and others assembled in Thiruvananthapuram, Shukla had found his orbital rhythm. He described a day measured not by Earth's single sunrise but by sixteen, each orbit bringing another dawn and dusk in the span of 90 minutes. The students listened, mesmerised, as he explained how astronauts eat food in paste form to prevent crumbs from floating into sensitive equipment, and how water comes in spill-proof bottles with straws.

PICK OF THE DAY

"The food we eat on Earth, for example a roti, cannot be eaten there as it can get in the suction pump in the ISS," ten-year-old Divyansh Agrawal recounted after the call. The boy had been struck by Shukla's explanation of how a whole team on Earth decides what astronauts can safely consume in space.

Shatakshi Srivastava, a ninth-grade student, was fascinated by Shukla's tour of the exercise equipment designed to combat muscle loss. "They have a couple of machines including a treadmill which they use while tying themselves to something and a cycle-like machine with no seat where they can pedal," she said. The image that lingered most was Shukla's casual observation that he could sleep anywhere—ceiling, wall, wherever—simply by getting inside a sleeping bag and tying himself to something solid.

In Kerala, students selected from across the state based on their academic performance had gathered at the Vikram Sarabhai Space Centre for their own ten-minute window with the astronaut. "He spoke about space travel, food, how he spends his free time at the space station, and the scientific experiments conducted there," said Aditya, according to PTI. "He also encouraged us to stay curious to learn and excel in science."

Between conducting experiments and equipment maintenance, Shukla told students he finds moments to watch Earth pass beneath the station's windows. For the Shukla family, watching their son and brother adapt to life in space had been "electrifying and beyond our imagination," as Mishra put it.

(With PTI inputs)

Source: The Hindustan Times Newspaper, 04-07-2025
Page No 02

Link: https://drive.google.com/file/d/15t1L0uF-z_IhcHREqnTv1ICDJPxX28pH/view

Artificial intelligence is reimagining history

Pratishtha Bagai
pratishtha.bagai@hindustantimes.com

NEW DELHI: From Mahatma Gandhi vlogging his Salt March to Shah Jahan offering a quirky home tour of the Red Fort, AI-generated videos are giving history a Gen Z twist. These short, influencer-style reels are going viral on Instagram, drawing in young audiences with their meme-worthy tone and bite-sized history lessons.

Creators are using AI tools to bring historical figures into the modern era—speaking in everyday slang, joking about steroids, or even pitching businesses on a fictional 'Mughal Shark Tank.'

"I started my page just two weeks back, as an experiment to blend AI with history," said Rahul S Nair, creator of the Instagram page Katha.Ai, which now has over 122,000 followers. "I didn't expect that these videos will be received so well, especially by the Union Public Service Commission and government exam aspirants who now have an opportunity to brush up their concepts even while using social media."

Creators are using AI tools to bring historical figures into the modern era. SHUTTERSTOCK

Nair, an Indian architect based in London, is a history buff leveraging AI to make learning fun.

He explains that the key lies in using relatable language.

"When analysing the algorithm, I've noticed that in India, short-form content primarily targets audiences in their 20s and 30s. To engage this demographic, it's crucial to use a specific style of language and slang," Nair said.

"The trick is to share facts in a fun and engaging way. Picture a historical figure acting like they belong in today's world, that surprise factor really helps people remember better."

Creating these videos, however, is far from easy.

Due to copyright limitations, AI-generated likenesses of historical figures must be approximated, not replicated.

"Due to copyright restrictions, using actual images of historical figures is often impossible... The real challenge, then, is to generate a close likeness using AI prompts and then accurately sync the lip movements to the script. This intricate process can take over 12 hours for just an 8-16 second reel," Nair said.

Tushar Gandhi, Mahatma Gandhi's great-grandson, sees merit in the approach but warns against trivialisation. "There are plus and minus points to this trend. It may make Bapu more believable to the younger generation, but there is a likelihood of oversimplification and trivialisation of the ideology," he said.

Education experts echo this sentiment. Narayanan Ramaswamy, partner and head of the education and skill development practice at KPMG in India, said such content is ideal for sparking curiosity but lacks academic depth.

"While excellent for casual learning of historical trivia, these concise and entertaining videos cater to diminishing attention spans... Still, for now, this content remains better suited for casual engagement than formal education," he said.

Meanwhile, creators are exploring ways to monetize the trend. Shubham Kolgane, a 23-year-old freelancer from Parbhani, started with an AI-generated monkey video on 20 June.

It saw modest engagement, but his pivot to historical reels paid off—his Mahatma Gandhi Salt March video garnered nearly two million views.

Source: The Hindustan Times Newspaper, 04-07-2025
Page No 06

Link: https://drive.google.com/file/d/15t1L0uF-z_IhcHREqnTv1ICDJPxX28pH/view

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