अगस्त
Aug
2025

खंड/Vol. : 50 अंक/Issue : 147

07/08/2025

समाचार पत्रों से चयनित 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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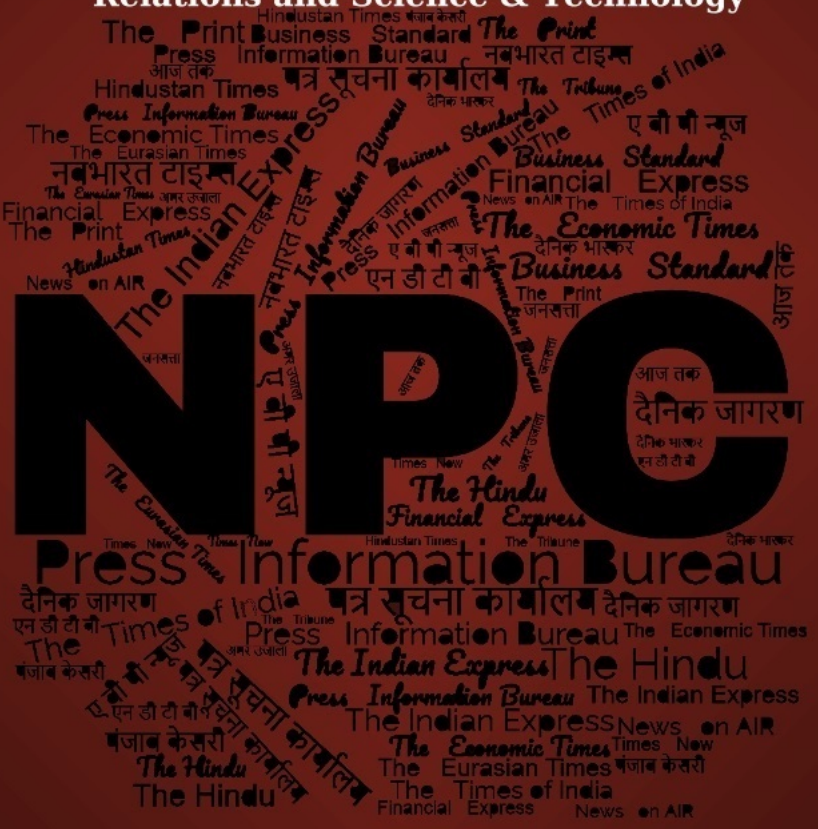

रक्षा विज्ञान पुस्तकालय
Defence Science Library
रक्षा वैज्ञानिक सूचना एवं प्रलेखन केंद्र
Defence Scientific Information & Documentation Centre
मेटकॉफ हाउस, दिल्ली - 110 054
Metcalfe House, Delhi - 110 054

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Defence News

साझा नौसेना अभ्यास पर चीनी दूतावास बोला - विवाद में तीसरे का दखल ना हो

Source: NavBharat Times, Dt. 07 Aug 2025

■ NBT रिपोर्ट, नई दिल्ली

भारत और फिलिपींस के साझा नौसेना अभ्यास को लेकर दिल्ली स्थित चीनी दूतावास ने कहा है कि क्षेत्रीय और समुद्री अधिकारों से जुड़े विवाद संबंधित पक्षों के बीच बातचीत और कंसल्टेशन से सुलझाए जाने चाहिए। इसमें किसी तीसरे पक्ष के दखल देने की कोई गुंजाइश नहीं है। दरअसल ये प्रतिक्रिया ऐसे वक्त आई है जबकि फिलिपींस के राष्ट्रपति मार्कोस जूनियर भारत के दौरे पर हैं।

दोनों देशों के बीच एक दिन पहले ही सैन्य सहयोग को लेकर कई द्विपक्षीय करार भी हुए हैं। इसके अलावा दोनों देशों के साझा बयान में भी साउथ चाइना सी में बिना चीन का नाम लिए धमकी भरे और बलपूर्ण गतिविधियों को लेकर चिंता जताई गई है। चीन की आपत्ति पर एक दिन पहले ही सचिव (ईस्ट) पी कुमारन ने कहा था कि भारत दक्षिण चीन सागर में फ्रीडम ऑफ नेविगेशन और व्यवसायिक गतिविधियों का समर्थन करता है।

भारत और फिलिपींस ने साझा नौसेना अभ्यास किया, जिसपर चीन को आपत्ति।

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NSA Ajit Doval in Russia; crude, S-400, Sukhoi upgrade on agenda

Source: The Tribune, Dt. 07 Aug 2025

National Security Adviser (NSA) Ajit Doval arrived in Russia on Wednesday for an annual meeting with his Russian counterpart Sergei Shoigu. He is also scheduled to call on Russian President Vladimir Putin.

Sources said the visit was part of a pre-scheduled annual engagement, initially planned for two weeks ago. It is being seen as a precursor to the annual India-Russia leaders' summit, which India is set to host later this year. Putin is expected to visit India for the summit and hold talks with Prime Minister Narendra Modi.

"It is not a response to US pressure related to tariffs or penalties for buying Russian crude oil," a source clarified.

Meanwhile, Russian Deputy Defence Minister Colonel General Alexander Fomin met Indian Ambassador to Russia, Vinay Kumar, in Moscow.

The Russian Ministry of Defence underlined the continuity of strong defence ties between the two countries. Describing the meeting, it said: "The two sides confirmed their focus on further

strengthening specialised cooperation within the framework of a particularly privileged strategic partnership."

"They discussed key issues of bilateral defence cooperation," the ministry added.

Doval is expected to raise issues related to future crude oil sourcing, pending defence supplies, including the remaining S-400 missile systems and the upgrade of Sukhoi-30 MKI fighter jets. Russia has assured delivery of the remaining two S-400 air defence systems by 2026.

This is Doval's first visit to Moscow since Operation Sindoor. However, he had attended the Shanghai Cooperation Organisation's NSA-level meeting in Beijing in June, where he met Aleksandr Venediktov, Deputy Secretary of Russia's Security Council and Shoigu's deputy.

https://www.tribuneindia.com/news/india/nsa-in-russia-crude-s-400-sukhoi-upgrade-on-agenda/

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In a hostile new world, can our govt save us?

Source: The Times of India, Dt. 07 Aug 2025

Somnath Mukherjee

Consider three seemingly unrelated developments. "You can't hire Indians, set up factories in China and park profits in Ireland," Trump said to US big-tech in mid-July, following this by imposing a 25% effective tariff rate on Indian exports to US, followed up with a further 25% on account of India's Russian oil trade. Microsoft briefly stopped providing services to Nayara Energy, a Russian-owned oil refiner in India. India's flagship fighter programme, LCA, is further delayed as supplies of engines from GE are held up.

These developments are strung together via an umbilical thread defining the geo-economics of a new, post End-of-History world.

- While free trade is likely to continue, every single piece of it can (and will) be weaponised – in a way not seen since the formation of Opec in response to Israel-Arab war in 1973. Opec was a single trick pony. For a large-scale, omnibus global trade war, one needs to go back to the days preceding WW2.
- Every piece of leverage available will be used for a trade – either economic or political. The era of grand bargains – for example, US offering non-reciprocal market access in lieu of political alliances – is over.

Today, US is using its enormous consumer market to drive tariffs and select, often shifting, political objectives. China is using its monopoly of rare earth minerals as a counter. Note the significant softening of US's stance on China (it's recently denied permission to Taiwan's president to stop-over at New York en route to Latin America) as shortage of rare earths bite key industries. For Indians, it would seem US is weaponising Pakistan (economically a non-variable) too against India.

- To cap it all, large swathes of key technologies that underpin business and lives today are monopolised (manufactured goods with China, software technology with US), enabling a level of leverage that Opec lacked even at its peak.

India navigates this uniquely tough global board as a large, soon to be the 3rd largest economy in the world, but way smaller than the Big Two. Instinctively unwilling and practically unable to commit to alliances. Aspiring for global influence but hamstrung by the realities of a poor (but democratic) polity. What it needs is cold decision-making that's divorced from the vicissitudes of daily politics.

For starters, the manufacturing vs services debate is moot. As much as the premise of manufacturing as a jobs sink. Manufacturing is required as a strategic imperative. Not necessarily in stitching T-shirts that employ millions, but an ecosystem that can realistically support a domestic aero-engine effort.

Image: AI

Today a US big-tech firm is withdrawing critical infra services to a Russian entity in response to European sanctions. Tomorrow, what prevents a similar sanctions regime from cutting off services to India? If data isn't localised, a foreign corporation (and govt) could have the switch to cut-off India's access to India's own data.

Atmanirbharta needs to get into brasstacks mode. Some areas (those related to data, access, IT infra) are best addressed via policies, maybe even weaponised as leverage in trade negotiations. In some others, especially those related to 'crown jewel' capabilities (aero-engines, quantum computing, 5th/6th generation combat aircraft), it is necessary to have domestic design-development-manufacturing capabilities.

Encouraging private sector investments through a mix of policy and tax incentives has fallen short. In most cutting-edge areas, not only is domestic talent pool shallow but Indian private capital pool is also unwilling to make large bets on ventures with high tail-risks. An Indian private entity will not invest in designing a new Indian medium aircraft and take it through a development cycle. Ergo, it's down to govt.

A proven model already exists, in the form of Project ATV (Advanced Technology Vessel). For four decades, this ultra-secretive national programme to develop a nuclear submarine (SSBN) was run directly under PMO. Design, development and final assembly were coordinated under one roof. The submarine hull was fabricated by private sector L&T, public sector shipyard capabilities were mobilised at the Ship Building Centre (SBC) that assembled the final submarines. When critical nuclear propulsion technology was proving to be a bridge too far, Vajpayee concluded a political deal with Russia for the reactor technology.

Mission-critical technologies and products will need ATV model of execution. Public sector 'work culture', inability to pay private sector (at times, global private sector) compensation for the right talent, scepticism of end-users about an Indian product delivering only 75% of the global best performance – these are not insurmountable barriers. Beg, borrow, steal, rob, trade – nothing should be beyond scope. But only a sovereign can ensure such actions remain within scope.

India's resources are too limited and its scale too small for critical missions to be left to private risk-taking. And there is no alternative. India's freedom of decision-making will be critically dependent on its ability to be atmanirbhar in critical technologies.

Rashtra Samarthya, state capacity, is the biggest imperative for India to embrace this uncertain new world. The Indian state has to rise to the occasion.

The writer is CIO of an asset & wealth management firm

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Nuclear dialogue, sans politics

-By Arun Prakash, former Navy Chief

Source: The Indian Express, Dt. 07 Aug 2025

ARUN PRAKASH

LOST IN THE thrust and parry of the parliamentary debate on Operation Sindoor were PM Narendra Modi's several references to Pakistan's "nuclear threats" and "nuclear blackmail". They reflected a deliberate articulation of India's more assertive security doctrine, representing a calculated move to redefine the deterrence equation in South Asia. That India is prepared to act against terrorism regardless of Pakistan's "nuclear bluff" is ostensibly intended to enhance India's deterrent credibility.

The three-way China-India-Pakistan nuclear relationship has created a complex web of interlocking deterrence. All three countries are modernising and expanding their nuclear arsenals and delivery systems. Given the lack of transparency regarding nuclear arsenals and doctrines, and a marked reluctance to engage in a dialogue on measures to mitigate nuclear risk, the ongoing arms race can further destabilise the region, especially in a crisis such as Pahalgam. August 6, the 80th anniversary of the bombing of Hiroshima, was a reminder of the horrors of a nuclear holocaust. We need to focus on the management of this complex dynamic and on the prevention of accidental or intentional escalation.

China, while officially maintaining principles of both "credible minimum deterrence" and "no first use" (NFU), is engaged in rapid expansion of its nuclear arsenal — predicted to reach 1,000 warheads by 2030. At the same time, the PLA's Rocket Force (PLARF) is fielding increasingly sophisticated missile systems, such as the 12,000–15,000 km range DF-41 and the hypersonic DF-17. PLARF's inventory consists of both conventionally armed and nuclear-tipped missiles, raising a question about China's posture: Is this "dual-capability" a deliberate strategic choice or merely an organisational detail?

Pakistan's nuclear arsenal is aimed exclusively at India, and apart from reserving the right to "first use", it has refrained from declaring an official nuclear doctrine. Pakistan's transition from "minimum credible deterrence" to "full spectrum deterrence" (FSD), which envisages the deployment of low-yield or tactical nuclear weapons, has been rationalised as a measure to counter the Indian army's "Cold Start" doctrine. The latter, it may be recalled, was a conceptual remedy for India's slow general mobilisation during the 2001-2002 Operation Parakram. However, it is only now that this concept of integrated battle groups is seeing daylight in the form of recently announced "Rudra" brigades.

India's political leadership has stood by its two long-held beliefs: (a) that the sole purpose of nuclear weapons is to deter a nuclear attack, by holding out a threat of "massive retaliation" and (b) nuclear weapons were political instruments rather than military warfighting tools. As a status quo power, India's declarations of NFU and its intention of maintaining a "credible minimum deterrent" made eminent sense. But much has changed since this doctrine was promulgated in 2003. Moreover, emerging technologies have added to the complexity of existing nuclear conundrums.

The "dual-use" potential of technologies such as AI, advanced computing, and hypersonic delivery systems could blur the traditional distinction between conventional and nuclear. For example, a precise surface-to-surface missile could carry either a conventional or a nuclear warhead, making it difficult to ascertain the nature of an incoming attack and decide an appropriate response.

The development of smaller, "dial a yield" nuclear warheads permits calibration of a single warhead to be detonated with a range of explosive effects, varying from sub-kiloton to hundreds of kilotons. The availability of such options could make their use more thinkable in a conventional conflict scenario, potentially lowering the nuclear threshold.

Since 1998, the Subcontinent has seen a few sporadic attempts at evolving confidence-building measures and nuclear risk reduction measures (NRRMs), including the 1999 Lahore MoU on measures to prevent accidental or unauthorised use of nuclear weapons, the 2005 Agreement on Pre-Notification of Missile Tests, and the 2007 Agreement to Reduce Nuclear Risks. But these are not enough, and a sustained dialogue is essential.

In the context of NRRMs, serious note needs to be taken of media reports citing open-source intelligence that during Operation Sindoor, some of the Indian missiles that targeted Mushaf air base in Pakistan's Sargodha region and the Nur Khan air base near Rawalpindi had impacted in the close vicinity of either nuclear warhead storages or Pakistan's nuclear command and control nodes. While the IAF's DG Air Operations firmly denied the targeting of any of Pakistan's nuclear installations, mischievous speculation has persisted about India's "warning strike", implying that it was a demonstration of capability rather than an attempt to destroy the underground facilities.

The planners and custodians of nuclear weapons must note that targeting an adversary's nuclear assets, even inadvertently, with conventional weapons, can be misinterpreted as a "counter-force" strategy, which is fraught with the risk of rapid escalation to nuclear war. The hazards and doctrinal confusion that would arise from such an action bear consideration.

First, a conventional strike against a nuclear facility would be indistinguishable from a nuclear first strike. Given the extremely short timelines for decision-making in a nuclear crisis, the "use them or lose them" syndrome may cut in, leading the targeted party to launch its nuclear arsenal before it is destroyed. Desperate options like "launch on warning" or "launch under attack" may be considered.

Second, while it may not trigger a nuclear detonation, a conventional attack or "near-miss" on a nuclear storage facility could cause a massive release of radioactive material, simulating a "dirty bomb", with devastating humanitarian and environmental consequences.

Finally, conventional attacks aimed at command-and-control nodes could render the adversary deaf and blind, depriving him of the ability to assess the situation accurately, communicate with his forces or issue rational orders.

These are amongst some of the manifold reasons why there is an urgent need for initiation of a sustained nuclear dialogue between India and Pakistan, insulated from the vagaries of politics. Such an interaction, by reducing mutual suspicion and enhancing transparency, might slow down the nuclear arms race and the mindless build-up of arsenals.

The writer is a former Indian Navy chief

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Science & Technology News

‘Defect to win’: science is set to be overwhelmed by fraud papers

-by Vasudevan Mukunth

Source: The Hindu, Dt. 07 Aug 2025

A meticulous new study published in the Proceedings of the National Academy of Sciences on August 4 has warned that systematic scientific fraud is no longer a fringe concern but a pervasive, organised, and rapidly growing threat that jeopardises the foundations of research worldwide. The study has revealed a fine-grained break-up of the actors, methods, and scale behind industrialised academic misconduct.

Drawing on a trove of bibliometric and forensic data, the team — from the Northwestern University and the NSF-Simons National Institute for Theory and Mathematics in Biology, both in the US, and the University of Sydney in Australia — has revealed how coordinated entities like paper mills, brokerage firms, compliant editors, and unscrupulous journals work together to mass-produce fraudulent research.

In a personal blog post about the effort, Reese Richardson, the study’s lead author and a postdoctoral fellow at the Amaral Lab at Northwestern University, wrote, “The scientific enterprise is now witness to widespread, organised defection from the scientific public goods game. Large swaths of players, among them many scientists, reviewers, editors and publishers, are choosing to no longer make genuine contributions to the pot.”

A public goods game

The team framed its analysis using game theory, likening science to a sprawling public goods game in which progress is driven by collaboration, trust, and mutual investment. In the study’s framework, in exchange for generating knowledge and training the next generation, scientists receive societal rewards like funding and career advancement. However, as the size and complexity of science have both ballooned, so too have the incentives and opportunities to defect.

“While there has always been some concern that these pressures may compel some to defect from the scientific research ethos … the focus has largely been on the actions of lone individuals,” the team wrote in its paper. “Recently, however, reports of coordinated scientific fraud activities have increased”.

Richardson wrote that ‘defection’ was defined as “the act of choosing to contribute less than other players despite having the means to contribute”.

He added that in repeated public goods games simulated in the laboratory, players understand over time that defecting yields the greater advantage, leading to them contributing less and less to the collective pool. And although there is usually a group of players that cooperate to play the game in good faith, most players gradually lower their input. As a result, the total benefits from the pool dwindle while the number of defectors rises.

The paper also rationalised the use of the game theoretic framework as a means to analyse research misconduct as an organised activity rather than as errors committed by specific individuals: “Unethical behavior in science is often viewed as a character failure of an individual, not something perpetrated, enabled, and promoted by a cohort of individuals and entities. Indeed, even the definition of a now standard term such as ‘paper mill’ remains nebulous. Some of the organisations we describe may be better characterised as ‘brokerages’ than paper mills. We also cannot ascertain where our observations are due to the involvement of commercial paper mills or where they arise as a result of less formal peer networks operating on a noncommercial basis (as could be the case among some of the editors we flag).”

The authors added that the framework is also useful “because it frames some behaviour not in ethical terms but in terms of rationality. … For many junior doctors and budding scientists, engaging in defecting behavior may be the new norm.”

At the heart of this breakdown is the modern system of academic incentives. Funding and recognition increasingly hinge on quantitative proxies like publication and citation counts, h-indices, and journal impact factors, all of which can be artificially inflated.

Architecture of fraud

For their analysis, the team members used multiple data sources and analytic tools. Their sources included journal and article metadata from Clarivate’s Web of Science, Elsevier’s Scopus, PubMed/MEDLINE, and the OpenAlex databases — spanning several thousand journals and millions of articles — as well as lists of deindexed journals from the major indexing services and early-warning lists from Chinese oversight authorities. They combined this with data about retracted papers from the Retraction Watch database; metadata and content from PubPeer, a post-publication critique platform; and programmatic analyses of publisher data, notably from PLOS ONE and Hindawi, both of which label each article with its handling editor.

Upon analysis, the team found that certain editors at large journals, such as PLOS ONE and the stable of Hindawi journals, consistently handled disproportionately many articles that were eventually retracted or which received critical comments on PubPeer.

Using probabilistic modelling and statistical controls, the team could identify individuals whose pattern of acceptance couldn’t be explained by chance. These editors, many of whom also published each other’s work, formed tightly-knit clusters that, despite making up less than 1% of all editors, were implicated in most problematic articles at their journals.

One particular insight was that the fraud ecosystem has become resilient and adaptable. For example, as the paper put it, organisations such as the Academic Research and Development Association (ARDA) in India don’t only write and submit papers on behalf of clients but actively “journal hopped”, shifting its business to new journals as soon as existing venues were deindexed or scrutiny of its activities increased.

The team wrote that between 2018 and 2024, ARDA’s roster of guaranteed publication venues ballooned from 14 to more than 86 journals, including obscure or hijacked periodicals as well as journals indexed in Scopus, Web of Science, and MEDLINE. They added that the journals listed by ARDA have also been deindexed at rates vastly exceeding the baseline, often in apparent response to exposure events — although the deindexing also occurred too slowly to offset the tide of fraudulent output.

Evidence from journal archives has indicated that most articles published through ARDA's network are beyond scope, with a significant share also representing improbable international collaborations. For example, the researchers found that of the five journals they comprehensively inspected from ARDA's offerings, 10.1% of publications had authors from different countries; they also spotted a paper about roasting hazelnuts appearing in a journal about HIV/AIDS care. The team interpreted this to mean ARDA was selling papers' authorships to the highest bidders.

Sobering numbers

An important plank of the analysis is the team's construction of networks based on image duplication, which has become a hallmark of fabricated science. The researchers identified large clusters of articles published in the same journal, in the same year, and by the same publishers, all connected through shared or manipulated images. They were able to use statistical methods to show that this was not a random occurrence: instead, the numbers are consistent with mass production and coordinated placement.

While all of science is susceptible, the extent of infiltration seems to be uneven. By comparing closely related subfields in RNA biology, Richardson et al. found that while error rates were similar across disparate new and expanding fields, the retraction rates differed dramatically. Subfields with formulaic, template-driven research, such as lncRNAs, miRNAs, and cancer, had retraction rates peaking at 4%, which significantly exceeded what the researchers said can be expected from honest error.

Perhaps the most sobering data exposed a mismatch between the scale of fraudulent output and the integrity of the mechanisms designed to address it. The corpus of suspected paper mill products has been doubling every 1.5 years, which the team has estimated is 10x faster than legitimate scientific publishing and far outpacing the growth of both retracted and flagged articles.

Even aggressive measures such as deindexing journals have been dwarfed by the sheer volume of compromised outlets. For example, fewer than 100 journals have been deindexed every year whereas there have been tens of thousands of journals and a staggering number of suspect publications.

According to the paper, "In response to concerns about editorial practices, [a few bibliometric aggregators] can deindex a journal. Web of Science and Scopus deindex on the order of a hundred journals each annually. While this may appear to be a large number, it is ten-fold smaller than the number of journals that publish paper mill products."

"Extrapolating from current trends," the paper added, "we estimate that only around 25% of suspected paper mill products will ever be retracted and that only around 10% of suspected paper mill products will ever reside in a deindexed journal."

The winning strategy

The researchers also acknowledged some important limitations of their work. Foremost was that scientific fraud is by nature clandestine and even comprehensive data is not likely to accurately estimate its full scale. The patterns of detection and exposure are themselves biased by resources, attention, and field-specific vulnerabilities. Even so, the team wrote, the aggregate evidence "shows that the integrity of the extant scientific record and of future science is being undermined through the shortcomings in the very systems through which scientists infer the trustworthiness of each other's work."

The study and its accompanying reflections constitute both an urgent warning and a call for collective action within the scientific community. Industrialised scientific fraud is no longer a marginal concern, nor is it adequately deterred by current measures. Instead, the researchers have revealed a resilient ecosystem of actors who have been incentivised to defect repeatedly, by exploiting the metrics and weaknesses of the current system at the expense of honest research and scientific progress.

“These networks are essentially criminal organisations, acting together to fake the process of science,” the study’s senior author and Northwestern University professor of engineering sciences and applied mathematics Luís A. Nunes Amaral said in a statement. “Millions of dollars are involved in these processes.”

Without coordinated, better-resourced, and systematically independent approaches to detect, investigate, and sanction misconduct, the study’s findings suggest that the future of science is at risk of being shaped by those for whom defection is the rational way to go.

https://www.thehindu.com/sci-tech/science/defect-to-win-science-is-set-to-be-overwhelmed-by-fraud-papers/article69896014.ece

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The Tribune
The Statesman
पंजाब केसरी जनसत्ता
The Hindu
The Economic Times
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The Indian Express
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