



# THE PULSE OF HBTU

## FORTNIGHTLY NEWSLETTER

Year II

7 July 2021, Wednesday



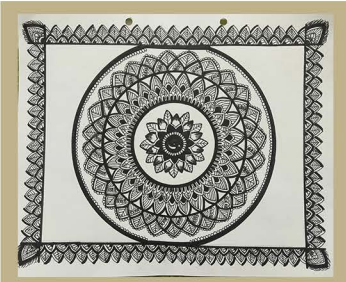
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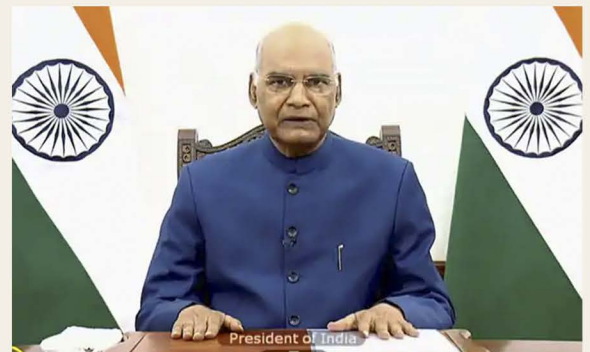
## HBTU Kanpur on its way to become a Central University!

Following a long wait, President of India, Mr. Ram Nath Kovind finally made a visit to his hometown Paraunkh on his special three-day tour to Kanpur. Later, he summoned representatives of local industries, educationists and some prominent personalities of the city. Education is of essence and keeping the same in view, the President on June 26, undertook cooperation and assistance from central government. The meeting between Vice Chancellor of HBTU and the President turned out to be constructive and valuable, as HBTU might soon, receive the status of a central university. The president said-**"Prakriya Poori Kare"**, in reference to the same. The institute will be observing its centenary celebrations in the coming November. President Kovind has been invited as a chief guest and has also been insisted, to recognize the institute as a central university, by our Vice-Chancellor.

"HBTU centenary celebrations will be held on November 25, and I have invited him to grace the occasion as the chief guest. President Kovind received the letter of invitation and asked me to get in touch with his office for the formalities. It was here I seized the opportunity to invite President to be our guest during the centenary celebrations and requested him to help in granting central university status to the institute during the big occasion", said Prof Samsher, Vice Chancellor of HBTU. Moreover, The President discussed the demands of other institutes like Chhatrapati Shahu Ji Maharaj University (CSJMU) and IIT-Kanpur during his individualized meetings with their academicians respectively.

Inauguration of an ancient science and technology center of excellence on the campus to unite new-age students with the luxuriance, heritage and traditions of Indian civilization has been proposed by CSJMU Vice-Chancellor, Prof Vinay Kumar Pathak. "Briefed him about upcoming School of Medical Research and Technology. He showed keen interest in the project and wished good luck. Discussed various innovations that IIT Kanpur has done recently." -Prof Abhaya Karandikar, Director of Indian Institute of Technology Kanpur tweeted, after meeting with the President.

Towards the end of the trip, President Kovind stopped by his motherland. He got all sentimental over visiting his native place, first time after he took over as The President of India. "I had never imagined, even in my dreams, that an ordinary village boy like me would have the honor of occupying the highest post in the country. But our democratic system made this possible,"- expressed President Kovind. On June 28, the president boarded a train at Kanpur Central railway station to reach Lucknow for his two-day visit to the state capital. On June 29, he returned to New Delhi on a special flight.



# NATIONAL INTERNATIONAL

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## GDP shrinks 7.3% in FY21; Q4 growth 1.6%



The Indian economy contracted by 7.3% in the fiscal year 2020-21, according to the GDP statistics released by the National Statistical Office, the worst ever economic performance on record, but still better than expectations. The NSO put this number at 8% in its last release in February. The recent GDP numbers and provisional fiscal numbers suggest that the 2021-22 Budget presented on February 1 was conservative in its projections of the 2020-21 economic performance. Both the level of nominal GDP and Gross Tax Revenue are higher than what was projected in the Budget. The gross fiscal deficit of the government in 2020-21, as per the provisional estimates released by the Controller General of Accounts, is ₹18.21 lakh crore compared to the ₹18.48 lakh crore according to the revised estimates given in this year's Budget. Which means it is 9.3% of GDP, not the expected 9.5%. This relative improvement in 2020-21 GDP estimates is due to a better performance in the last quarter (January-March) of 2020-21 which saw GDP growth increase to 1.6%. GDP contracted by 24.4% and 7.4% in the first and second quarters of 2020-21, and grew by 0.5% in the third quarter.

## HC tells Twitter to Comply with new I.T. rules

Twitter has to comply with new Information Technology (IT) rules for digital media if they have not been stayed, the Delhi High Court said. Justice Rekha Palli issued notice to the government and social media platform Twitter seeking their stand on a plea by a lawyer, Amit Acharya, claiming non-compliance of the rules by it. While the micro-blogging site claimed before the court that it has complied with rules and appointed a resident grievance officer, the central government disputed the claim.

## India Vaccinates Record 88.09 Lakh People on Day 1 of New Vaccine Regime

India has achieved a landmark milestone by administering nearly 88.09 lakh doses of COVID vaccines in one day, which is the highest single-day coverage till now. Prime Minister Narendra Modi said on the day's record-breaking vaccination numbers are "gladdening." The vaccine remains our strongest weapon to fight COVID-19. Congratulations to those who got vaccinated and kudos to all the front-line warriors working hard to ensure so many citizens got the vaccine. Well done, India! PM Modi wrote on Twitter. The centre started the process of buying 75 per cent of the vaccines produced by companies, including 25 per cent assigned to states. Private hospitals will continue to buy the remaining 25 per cent and inoculate those willing to pay for their jobs, the Prime Minister had announced earlier.

## DRDO successfully test-fires Agni-Prime missile



India successfully carried out the test-firing of a new missile of the Agni series known as Agni-Prime off the coast of Odisha on Monday, said government sources. India successfully carried out the test-firing of a new missile of the Agni series known as Agni-Prime at 10.55 am today, off the coast of Odisha. The new nuclear-capable missile is fully made up of composite material and it was a textbook launch, the sources said. As per Defence Research and Development Organisation (DRDO) officials, Agni-Prime is a new generation advanced variant of the Agni class of missiles.

## Amazon buys encrypted messaging app Wickr

Amazon said Friday it was acquiring the encrypted messaging app Wickr which offers secure communications for businesses, government agencies and individuals. Terms of the deal were not disclosed. Amazon said in a statement it would incorporate Wickr in its Amazon Web Services (AWS) division which offers cloud computing and other services. AWS will continue to offer Wickr services including end-to-end encrypted communications which meet certain regulatory requirements. "The need for this type of secure communications is accelerating," said AWS vice president Stephen Schmidt.

## Uttar Pradesh: E-tablets for government colleges students



Students enrolled in government colleges in UP will soon be able to access online content even without internet connectivity. The UP government issued an order to provide 1080 electronic tablets, preloaded with e-content to students of 120 colleges. The e-tablets will be stashed in college libraries and will be issued to students like books. The government on Friday released Rs 1.68 crore for the purchase of e-tablets for the upcoming academic session. As per the order issued by special secretary, higher education, Yogendra Dutt Tripathi, the colleges will have to float an e-tender on the GeM portal to procure e-tablets.

## Engineering students in Maharashtra's govt colleges to get ₹16k fee discount for 2021-22

State minister for higher and technical education Uday Samant announced a rebate of ₹16,250 to engineering students from government-aided institutes for not using the library, gym and other facilities on campus as students have not attended physical classes in over a year, as per a press statement. "Students admitted to government and government-aided autonomous engineering institutes have to pay fees other than tuition fees. These students were not present in the college due to Covid lockdown, so they should not be charged for the same. Considering the problems of students and parents in the backdrop of the ongoing pandemic, it has been decided to give a discount of ₹16,250 to students," he said.

## New Zealand crowned World Test Champions after thrilling final day

New Zealand are ICC World Test Champions after beating India inside the final hour of a nail-biting reserve day at the Hampshire Bowl, wrapping up an eight-wicket win with a boundary from Ross Taylor. Two years after their agonising Super over loss to England in the 50 over World Cup final at Lord's in 2019, Kane Williamson's men clinched a global title. India began the sixth day 32 runs ahead, on 64/2, with Virat Kohli and Cheteshwar Pujara at the crease, and with all results still possible. New Zealand knew that they needed a fair helping of wickets in the morning session, and Kyle Jamieson got them off to a superb start, tempting Kohli into a nubile that BJ Watling, playing in his final ever Test, gratefully grabbed behind the stumps. And the big Kiwi bowler struck again in his very next over, luring a rare wicket out of Pujara to get the edge, with Ross Taylor taking a good catch in the cordon. Jamieson's double scalp meant India had lost two wickets for just eight runs at the start of the session but also brought Rishabh Pant to the crease.

## G-7 Summit 2021

The leaders of seven of the world's most advanced economies have just wrapped up a three-day-long summit that took place in the United Kingdom (UK). The G-7 Summit, which was held from June 11 to June 13, saw leaders discussing the economy, climate change, the coronavirus pandemic and geopolitics. The meeting took place with the leaders of the G7 which include the UK, Canada, France, Germany, Italy, Japan, and the United States (US). It was also attended by the presidents of the European Commission and the European Council. This year, the summit also saw Australia, India and South Korea who were invited as guests. Altogether, the leaders represented over 2.2 billion people and over half of the world's economy.

## Milkha Singh: India's 'Flying Sikh' dies from Covid

Popularly known as "the Flying Sikh", Singh won four Asian gold medals and finished fourth in the 400m final at the 1960 Rome Olympics. In 2013, his story was turned into the Bollywood film Bhagat Milkha Bhaag - Run Milkha Run. Singh's wife, Nirmal Kaur, a former volleyball captain, also died with Covid earlier this week, aged 85. Singh had contracted Covid-19 last month and died of complications from the disease in a hospital in the northern city of Chandigarh late on Friday. Prime Minister Narendra Modi led the tributes to the athlete, who has been described as independent India's first sporting superstar.

## The Draft National Space Transportation Policy-2020

The Draft National Space Transportation Policy-2020 is a comprehensive framework that covers all the aspects of rocket launching, launchpads, re-entry of a space object and others. Any orbital or sub-orbital rocket launch from Indian or overseas territory can only be conducted with authorization from the Indian National Space Promotion & Authorization Centre (IN-SPACE), an independent body constituted by the Government of India, under the Department of Space (DOS). As per the Draft National Space Transportation Policy-2020, IN-SPACE authorization requires the financial guarantee or insurance cover by the proposer as part of its ownership towards the fulfillment of the nation's liability as per international agreements. The Draft National Space Transportation Policy-2020 and other several initiatives by the Government of India are paving a path towards harnessing the potential of the space sector in India.

## World's 2nd largest hydropower dam goes online in China

China began operating the world's second-largest hydropower station. The 948-feet-high Baihetan Hydropower Station in southwest China, second in the world only to the country's Three Gorges Dam in terms of power generation, began partial operation. Baihetan was built with a total installed capacity of 16,000 mw, which means it will eventually be able to generate enough electricity each day. The hydropower dam will be enough to meet the power needs of 500,000 people for an entire year, according to state broadcaster CCTV. The dam spans a deep, narrow gorge on the upper section of the Yangtze, China's longest river, on the earthquake-prone border between Yunnan and Sichuan provinces.

## Pentagon report says UFOs can't be explained, and this admission is a big deal

A report from the US task force dedicated to investigating UFOs — or, in the official jargon, UAPs (Unidentified Aerial Phenomena) — has neither confirmed nor rejected the idea such sightings could indicate alien visits to Earth. On June 25, the Office of the Director of National Intelligence (ODNI) released its eagerly awaited unclassified intelligence report, titled "Preliminary Assessment: Unidentified Aerial Phenomena". The document is a brief nine-page version of a larger classified report provided to the Congressional Services and Armed Services Committees. It assesses "the threat posed by unidentified aerial phenomena (UAP) and the progress the Department of Defense Unidentified Aerial Phenomena Task Force has made in understanding this threat".

## How World celebrated 7th International Yoga Day



International Day of Yoga is celebrated with much fervour every year on June 21. This year, the International Yoga Day 2021 will be celebrated on Monday i.e. today, as Prime Minister Narendra Modi will address the seventh such event at 6:30am. The theme for the International Day of Yoga this year is, a motto aligned to the current pre-occupations. As it is an event of a global scale, preparations for the Inter "Yoga for Wellness" National Yoga Day event usually begin 3-4 months prior, ultimately culminating in a grand programme where millions of people come together to observe the spiritual history and significance of the day.

## World Environment Day 2021 launches global drive to restore nature

With the world rising to emerge from the COVID-19 pandemic, there is increasing recognition that healing from the pandemic is linked to healing the planet. Resetting humanity's relationship with nature was the focus of World Environment Day on June 5, which also marked the launch of the UN Decade on Ecosystem Restoration, a ten-year global push to prevent, halt and reverse ecosystem degradation. "It's easy to lose hope when we think of the sheer magnitude of the challenges we face and the avalanche of bad news that we wake up to every morning," said Inger Andersen, Executive Director of the United Nations Environment Programme (UNEP). "But just as we caused the climate crisis, the biodiversity crisis and the pollution crisis, we can reverse the damage that we've done; we can be the first generation to reimagine, to recreate and to restore nature to kickstart action for a better world."

## India launches Official Olympic Theme Song ahead of Tokyo Olympics



Union Minister for Youth Affairs and Sports Kiren Rijiju launched the official theme song of the Indian Olympic Team of Tokyo 2020 Olympic Games on the occasion of Olympic Day in New Delhi. The song has been composed and sung by popular playback singer Mohit Chauhan and lyrics are penned by his wife Pradhan Gahlote. Launching the theme song, Kiren Rijiju said, "It is the vision of the Prime Minister Shri Narendra Modi that the entire nation must come together to support and motivate Indian athletes going to Tokyo Olympics. The launch of the official Theme Song today is a step in that direction. The high energy song composed and sung by Mohit Chauhan encapsulates the spirit of every athlete's dream to bring glory for the country at the highest podium."

# IN AND AROUND

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## HBTU Kanpur ranked 20th amongst all Govt. run engineering colleges across the nation.

Harcourt Butler Technical University-Kanpur secured 20th position in "India Today's Best Colleges Survey" across all the Government engineering colleges throughout the country. Against all the restrictions of the Covid-19 Pandemic, the university procured an impressive overall score of 1,500.9 out of 2000, upgrading its previous year rank from 21st to 20th. HBTU, Kanpur performed well in all the criterions of the ranking including intake quality and governance, academic excellence, infrastructure and living experience, personality and leadership development, career progression and placement, objective score and perceptual score.

## World Environment Day

"Seven billion dreams, One planet, Consume with Care."

One of the main global concerns today is the issues related to the environment and it mainly refers to the natural elements that make up the earth and surround living organisms, enabling life. World Environment Day is celebrated every year on June 5th. It is an annual campaign run by United Nations Environment Programme to raise awareness of the need to preserve and enhance the environment and thus take positive environmental action to protect nature and the planet earth. We as residents of the planet Earth need to join hands and work together to reach a balance where people, habitat and wildlife can co-exist. We have a beautiful choice to use the gift of our life to make the world and our surroundings a better place to live and the HBTU family has thus come forward by celebrating the World Environment Day at local Anganwadi Kendra in suburb of Kanpur with great zeal and enthusiasm. With an objective of creating awareness about the sheer importance of the role which the environment plays in our life and the need to preserve it and achieving the same by adopting different ways to do it, we also educated the residents of Anganwadi Kendra the importance of maintaining cleanliness and hygiene and the need to make India free from open defecation for the sake of our well-being. The event was concluded by a plantation drive, with a pledge to plant trees on regular basis with a motive to combat many environmental issues like deforestation, soil erosion and hence enhancing the beauty and balance of the environment.

## Yoga Day

The Harcourt Butler Technical University witnessed a Yoga training camp and celebrated International Yoga Day from 17-21 June 2021 (8:30 am to 9:30 am) in the Gymnasium, West Campus. The event was blessed by the presence of our Chief Guest of Honor Vice-chancellor of HBTU Professor Samsher, respected Registrar Dr Neeraj Kumar Singh, and honorable Dean of student welfare Professor Ram Naresh. The event was organised by University Students Activity Council including Dr G.L. Devnani, secretary USAC, Dr Vikas Yadav, physical instructor/Dy. Secretary and Dr Archana Singh, convener. The event was inaugurated by flag hoisting and releasing a pigeon by our esteemed Chief Guest VC Prof. Samsher. On day one (Day 0) of the event, an introductory speech was given by VC Prof. Samsher, where he discussed the importance of yoga and how he has been practising yoga since 2007 followed by Dr Vikas Yadav, where he talked about three basic questions regarding yoga that is, when, how and why. DSW prof. Ram Naresh, registrar Dr. Neeraj Kumar Singh, Dr Praveen Kumar Singh and all the other college officials joined the camp either physically or virtually. The camp was live telecasted on the social media handles by the PSMSC. At the end of the day, DSW and registrar presented a plant to VC, as a token of gratitude and honor. On the second day of the event, an introductory speech was given by Dr Vikas Yadav, who in his speech highlighted the importance of Yoga for everyone and also emphasized not overdoing any asana but simply practising yoga to one's physical capabilities. He began the yoga session with Surya namaskar, and everyone joined him in performing yoga asanas of higher difficulty (Halasana, Navasana, Bhujangasana, Dhanurasana, Sukhasana, etc.) with utmost dedication and perfection. The theme for this 60-minute session was "Yoga for all". The third and final day of this transcendental event was marked by the beginning of Summer Solstice 2021. The day was started with a reminder for following the social distancing norms by Dr Vikas Yadav, which was then succeeded by a warm welcome from Yogaarchya Smt. Neelam Gupta. The words of wisdom she shared with us were: "Don't forget to bear a smile on your face. Life becomes blissful if one just remembers to smile. Embracing healthy habits not only makes one healthy but also one's family, the society that in turn makes the entire nation healthy." This beautiful message was then followed by a majestic rhythmic yoga demonstration by Yogaarchya Smt. Neelam Gupta Ma'am's team, which was comprised of national players, on the number - 'Kandho se milte hain kandhe'. After this awe-inspiring performance, Dr Vikas Yadav expressed his gratitude and congratulated everybody for making this event a successful one and ended his speech by reminding everyone of the importance of yoga during these prevailing times. He then shared a message from the world-renowned cricketer Mr Kuldeep Yadav, whose bright smile and wonderful words cheered everyone. The event was concluded by registrar Dr Neeraj Singh, who encouraged everybody to inculcate yoga in their daily lives.



## Placements

### PSU: Gail Limited



Offered packages of 12 lacs per annum.

Prateek Yadav (CH)  
Gaurav Kumar (CH)  
Aakash (ME)  
Aishwarya Dwivedi (ET)  
Utkarsh Srivastava (ET)

### REPL Global



Offered packages of 3.5 lacs per annum.

Shubham (CE)  
Abhinav Rathore (CE)  
Akash Yadav (CE)  
Shivank Kumar Shehna (CE)  
Akanksha Singh (CE)

### J.K. Paper Ltd.



Offered packages of 4.2 lacs per annum.

Aryan Bhartiya (CH)  
Shaurya Pratap Singh (ME)

### Technip FMC.



Offered packages of 5 lacs per annum.

Ajitesh Pratap Singh (ME)  
Anjali Prakash (ME)  
Pawan Singh (EE)

### Nykaa



Offered packages of 5 lacs per annum.

Munna Kumar Verma (CS)  
Akash Singh (EE)  
Aryan Verma (CS)  
Ajeet Singh (ET)

# SCIENCE & TECHNOLOGY

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## Central Bank digital cash will complement cryptocurrencies:

### Analysts

Central bank digital currencies will complement cryptocurrencies rather than competing with them despite not being structurally different from their country's fiat currencies, strategists and fund managers said. Around 90 percent of the world's central banks are now working on their own digital currencies unlike traditional ones like Bitcoin, some of which may be issued in the next three years, a survey from the Bank for International Settlements showed. Bitcoin price in India stood at 28.7 lakhs. Central bank digital currencies (CBDCs) "are structurally no different than fiat, and they are very much complementary to cryptocurrency, not competitive," Meltem Demirci, chief strategy officer at CoinShares, Europe's largest digital asset investment firm managing \$5 billion (roughly Rs. 38,660 crores). The interview was part of a series on digital currencies run on the Reuters Global Markets Forum over the past week.

Kevin Kelly, head of global macro strategy at digital asset research firm Delphi Digital, said he expected CBDCs to improve traditional monetary systems via easier transmission of fiscal policy, while aiding crypto markets by bridging the gap between fiat and decentralized finance (DeFi). However, analysts said, it was still possible that nations would promote their own CBDCs and sideline cryptocurrencies. "Could the United States government create its own US digital currency and say we believe in crypto, but only this crypto? Sure, I think that could absolutely happen," said Todd Cipperman, managing principal at Cipperman Compliance Services. Some central banks, including the Reserve Bank of Australia, are exploring the development of tokenised forms of CBDCs on an Ethereum-based platform. Ethereum price in India stood at Rs. 18 lakhs.

## All social media giants have to comply by new IT rules



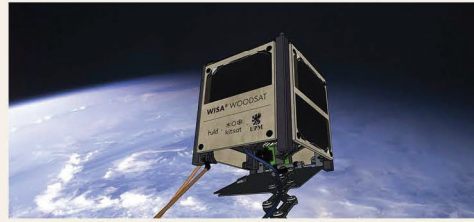
Parliamentary Standing Committee on Information Technology directed Facebook and Google to comply with new IT rules and follow rules of the country, according to ANI. Sharing statistics of manipulated content flagged by the tech giant, Google officials said, "Between January and March 2021, YouTube removed over 9.5 million videos for violating its community guidelines. 95 percent of these videos were first flagged by machines rather than humans. Of those detected by machines, 27.8 percent never received a single view and 39 percent received 1-10 views."

Parliamentary panel for IT headed by Congress leader Shashi Tharoor also directed the secretariat to seek in writing from Twitter within two days on what basis Twitter accounts of IT Minister Ravi Shankar Prasad and Shashi Tharoor were blocked. According to ANI, letter to will be sent June 29. The panel further said, "If the committee does not get a satisfactory reply from Twitter, then the committee can summon the Twitter official". Parliament Standing Committee on Information Technology (andT) has issued summons to Facebook India and Google India asking them to send their representatives to appear before it on June 29, to hear their views on safeguarding citizens' rights and prevention of misuse of social online news media platforms. The committee had also asked Twitter to give a representation to the panel, headed by Congress Lok Sabha MP Shashi Tharoor, on how to prevent misuse of social media and online news platforms. The committee had told the social media platform that it will have to comply with the government's rules.

## Israel says it is developing airborne laser to down drones

Israel's Defence Ministry and defence contractor Elbit Systems Ltd (ESLT) are developing an airborne laser weapon to shoot down drones and other flying targets, officials said on June 21, predicting a prototype would be ready by 2025. They said the as-yet unnamed laser weapon could be incorporated in Israel's multi-tier air defences, which include the Iron Dome system for downing short-range rockets and the David's Sling and Arrow systems against ballistic missiles. Rotem said a 100-kilowatt prototype with a range of 20 km would come out in three to four years. That suggested an operational version would take longer to roll out. The ministry, Elbit and state-owned Rafael Advanced Defense Systems Ltd are also working on a ground-based laser weapon for shooting down aerial threats. That would have a range of 8-10 km (5-6 miles) and be operational by 2025, the ministry said.

## World's First Wooden Satellite Set To Launch – Can Plywood Survive in Space?



The world's first wooden satellite is on the way, in the shape of the Finnish WISA Woodsat. ESA materials experts are contributing a suite of experimental sensors to the mission as well as helping with pre-flight testing. WISA Woodsat is a 10x10x10 cm 'CubeSat' – a type of nanosatellite built up from standardized boxes – but with surface panels made from plywood. Woodsat's only non-wooden external parts are corner aluminum rails used for its deployment into space plus a metal selfie stick. The mission was initiated by Jari Makinen, Finnish writer and broadcaster. He co-founded a company called Arctic Astronautics, which markets fully functional replicas of orbit-ready CubeSats for education, training and hobby purposes. "I've always enjoyed making model planes, involving a lot of wooden parts. Having worked in the space education field, this got me wondering: why don't we fly any wooden materials in space?" So I had the idea first of all to fly a wooden satellite up to the stratosphere, aboard a weather balloon. That happened in 2017, with a wooden version of KitSat. That having gone well, we decided to upgrade it and actually go into orbit. From there the project just snowballed: we found commercial backing, and secured a berth on an Electron launcher from Rocket Lab in New Zealand." The main difference is that ordinary plywood is too humid for space uses, so we place our wood in a thermal vacuum chamber to dry it out. Then we also perform atomic layer deposition, adding a very thin aluminum oxide layer – typically used to encapsulate electronics. This should minimize any unwanted vapors from the wood, known as 'outgassing' in the space field, while also protecting against the erosive effects of atomic oxygen. We'll also be testing other varnishes and lacquers on some sections of the wood." Woodsat is due to launch before the end of this year.

## Isro satellite launch: 'Geo-Eye' over Indian Ocean

Indian Space Research Organisation (Isro) on November 28, 2018, launched high throughput communication satellite GSAT-29 from the Satish Dhawan Space Centre at Sriharikota in Andhra Pradesh. The exercise was called GSLV Mk-III-D2 mission.

The Geosynchronous Satellite Launch Vehicle Mark III (GSLV Mk-III) carried GSAT-29 off the ground on its second developmental flight at 5.08 in the evening. The load carried by GSLV Mk-III included what is being called as Geo Eye to monitor sensitive regions along the borders. GSAT-29 is carrying Geo Eye which is expected to aid agencies involved in strategic surveillance.

GSAT-29 is the 33rd Made-by-India communications satellite. It is a multi-beam and multiband communications satellite. Once operational, GSAT-29 will provide internet connectivity in some of the remotest areas in Jammu and Kashmir, and the Northeast

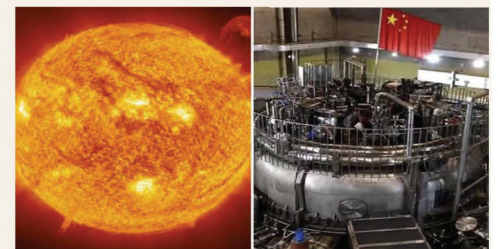
## IT cos set to slash 3 mn jobs by 2022 due to automation, to save \$100 bn in cost

With automation taking place at a much faster pace across industries especially in the tech space, domestic software firms that employ over 16 million are set to slash headcounts by a massive 3 million by 2022, which will help them save a whopping USD 100 billion mostly in salaries annually, says a report. The domestic IT sector employs around 16 million, of them around 9 million are employed in low-skilled services and 3PO roles, according to Nasscom. Of these 9 million low-skilled services and BPO roles, 30 per cent or around 3 million will be lost by 2022, principally driven by the impact of robot process automation or RPA. Roughly 0.7 million roles are expected to be replaced by RPA alone and the rest due to other technological upgrades and upskilling by the domestic IT players, while it the RPA will have the worst impact in the US with a loss of almost 1 million jobs, according to a Bank of America report. Based on average fully-loaded employee costs of USD 25,000 per annum for India-based resources and USD 50,000 for US resources, this will release around USD 100 billion in annual salaries and associated expenses for corporates, the report says. "TCS, Infosys, Wipro, HCL, Tech Mahindra and Cognizant and others appear to be planning for a 3 million reduction in low-skilled roles by 2022 because of RPA up-skilling.

## World's Fastest: Quantum Random Number Generator Sets New Benchmark for Size and Performance

At roughly the size of a fingertip, the integrated photonics chip delivers random number output more than twice as fast as conventional QRNGs. As pervasive as they are in everyday uses, like encryption and security, randomly generated digital numbers are seldom truly random. So far, only bulky, relatively slow quantum random number generators (QRNGs) can achieve levels of randomness on par with the basic laws of quantum physics, but researchers are looking to make these devices faster and more portable. In Applied Physics Letters, by AIP Publishing, scientists from China present the fastest real-time QRNG to date to make the devices quicker and more portable. The device combines a state-of-the-art photonic integrated chip with optimized real-time post-processing for extracting randomness from quantum entropy source of vacuum states. "Recently, the technology of integrated quantum photonics has exhibited significant advantages in terms of size reduction," said author Jun Zhang. "In this work, we further prove that such technology could be used for ultrafast, real-time quantum random number generation." Most QRNGs today use discrete photonic and electronic components, but integrating such components within a chip remains a technical challenge. "Quantum random numbers are unpredictable, irreproducible and unbiased, whose randomness comes from the intrinsic indeterministic nature of quantum physics," Zhang said. The group's chip uses indium-germanium-arsenide photodiodes and a transimpedance amplifier integrated onto a silicon photonics chip that includes several couplers and attenuators. Combining these components allows the QRNG to detect signals from a quantum entropy source with significantly improved frequency response. "The surprising point in our work is that the high-frequency response performance of the final photonic integrated chip is better than expected," Zhang said. Once randomness signals are detected, they are processed by a field programmable gate array, which extracts truly random numbers from the raw data. The resulting device can generate numbers at nearly 19 gigabits per second, which is a new world record.

## China's 'Artificial Sun' Sustains 120 Million Degree Celsius for Over 100 Seconds; Sets New World Record



China's 'artificial sun' recently broke the world record as it achieved a plasma temperature of 120 million degree Celsius for 101 seconds and 160 million Celsius for 20 seconds. This has set new records in the field of nuclear fusion, media reports said. The experiment was achieved by Experimental Advanced Superconducting Tokamak (EAST) device, or the 'artificial sun', located at the Hefei Institutes of Physical Science of the Chinese Academy of Sciences, the Global Times reported. EAST is part of the International Thermonuclear Experimental Reactor (ITER) facility—a collaboration of 35 nations also comprising India.

EAST is designed to replicate the nuclear fusion process that occurs naturally in the sun and stars to provide almost infinite clean energy through controlled nuclear fusion, which is often dubbed the 'artificial sun.' Previously, the plasma could be maintained up to a temperature of 100 million Celsius for 100 seconds. The breakthrough is significant progress, and the ultimate goal should be keeping the temperature at a stable level for a long time. Li Miao, director of the Physics Department of the Southern University of Science and Technology in Shenzhen, was quoted as saying. The next milestone might be to maintain the stability for a week or more, Li added.

Achieving a plasma temperature above 100 million Celsius is one of the key challenges to harness nuclear fusion. The temperature at the core of the sun is widely believed to be 15 million degrees Celsius, meaning that the plasma at the device's core will be seven times hotter than that of the sun. The ITER project aims to prove that fusion power can be produced on a commercial scale and is sustainable. ITER, the world's largest experimental fusion facility, is being built in Saint-Paul-lès-Durance, some 35 km north of Aix-en-Provence in southern France. India is one of the seven partners (China, India, Japan, South Korea, Russia, the US, and Europe) both in-kind and in-cash, in a first-of-a-kind global collaboration.

# CREATIVE CLUSTER

Year II

7 July 2021, Wednesday

सूरज के टुकड़े होकर,  
जब इन शाखों पर गिरे थे,  
राह ही चला एक-एक पत्ता...  
प्रेम की ताप से जन्मे कुछ फूल खिले थे  
जब हम तुम मिले थे...  
पलाश के फूल खिले थे।

लहु के रंग से, लहु के जुनून सा  
उन पलाश के बागी फूलों सा...  
प्रेम हो गया था तुमसे,  
क्योंकि जब हम तुम मिले थे...  
पलाश के फूल खिले थे।

पलाश के फूल ये नहीं जानते  
कि वे जब शाम को ज़मीन पर गिरेंगे,  
तब राह पर कुचले जाएंगे...  
या किसी प्रेमिका के बालों में गूथे जाएंगे।  
पलाश सा प्रेम हो गया था तुमसे,  
बागी! ज़िंदी! जुनूनी! इसलिए...  
जब तक हम तुम मिलते रहेंगे...  
पलाश के फूल खिलते रहेंगे!

Bhawini Prasad  
PhD Mathematics



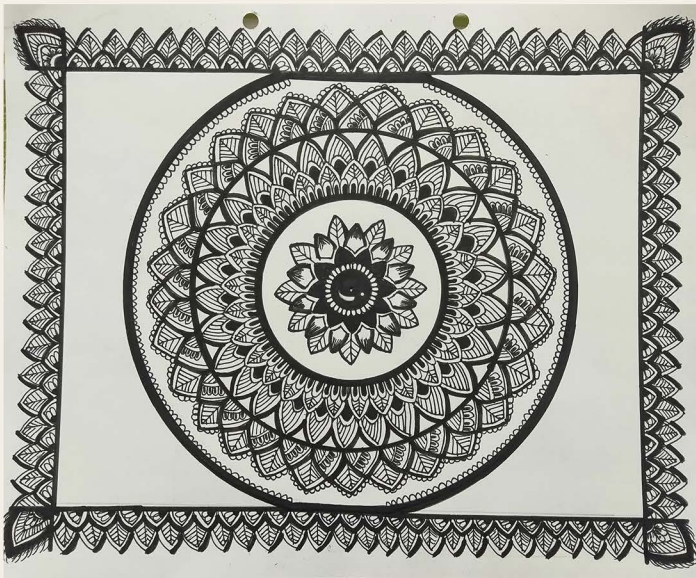
Ayushi Pal  
1st BTech CSE

## Ideology VS Political gains

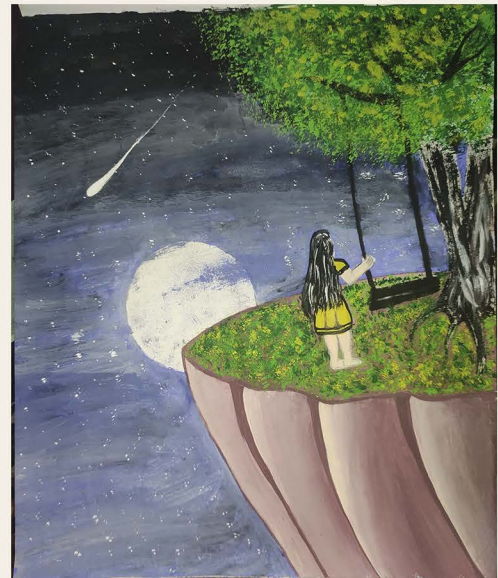
Any political party is formed on the grounds of ideology. Ideology place the dominant role with people in background. Any ideology can bring the change that in desires. The question here is not on the ideology but on the character possessed by the people behind. Whatever may be the reason behind the change, it has two consequences. First, people doubting the political party and second, people doubting the individual. The latter seems more prominent. The change may be acceptable but on the grounds that it does not bring a change in the ideology. Constitutionally, there is no error but ethically, it changes the character, the character that builds the political party, the character that tries to kill the nation.

Political gains always seem to be superior than belief gains, the belief of the people, the belief of the voter. But in the long run it devastates both the political gains as well as the belief gains. There may be differences between people or in the way of functioning but this does not open ways to new ideology. Rather it may open the way to new move that must have the elements of original ideology. The

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