



PAGE 2



PAGE 3



PAGE 4



PAGE 5



PAGE 6

BIO DIESEL PLANT IN HBTU

1. What was the vision behind establishing the biodiesel plant? Can you tell us more about the founding members of the plant?

The biodiesel plant was procured in November of 2006 under the department of Oil Technology and it received financial aid from World Bank under the TEQIP Phase 1. The idea behind procuring the plant was that we had already developed the process to produce biodiesel at a lab scale. It needed to be optimized and it had to be scaled up to pilot level. In institutes scaling up to the industry, that level is not possible, therefore the plant was established.

2. What opportunities were created with the establishment of the pilot biodiesel plant? Since the time of its establishment, what were the major challenges that it faced and how were those challenges overcome?

The lab-scale was optimized so that our BTech and MTech students could see how bio diesel was prepared and optimized at laboratory scale. This way we were able to give our students a fair idea as to how things are done at the industry level. The plant in itself is a small-scale industry with a capacity of producing 25 liters of biodiesel. I am proud to mention that with the help of the plant we could produce a Ph.D. scholar. My work was also chiefly on biodiesel, and back in the year 2009 I received second prize in Oral Paper Presentation in the research session of the International Conference on "Oils, Fats, Fuels and Surfactants" on the topic "Production of Biodiesel from Industrial By-Products at Pilot Scale". The biggest challenge that not only our plant but all the plants across the country and the globe face is the availability and selection of feedstock. In western countries, the population stress is less and they are using palm oil or corn oil. However, in our case, we are already importing a hefty amount of edible oil, so we cannot use that oil to produce biodiesel because it will give rise to a clash between food oil and fuel oil. The best possible solution is to look for alternatives and unconventional feed stocks like used cooking oil (UCO) and industry by products. In our plant, we have produced bio diesel from used cooking oil (UCO) and soap stock that is considered to be a difficult feedstock, but we were successful in producing biodiesel from it.

3. What is the basic process that is used in this pilot-scale bio diesel plant?

We use transesterification. It is a chemical process in which oil is reacted with alcohol and then the glycerol is separated leaving us with fatty acids and methyl esters. This is the fundamental process but as soon as the feedstock gets changed so does the process. At certain times we are using transesterification reactions and on other, we are using inter esterification reactions. Sometimes two-step process is also used.

4. On 4th May 2021 Minister of Petroleum & Natural Gas flagged off 1st supply of used cooking oil (UCO) from Indian Oil's Tikrikalan Terminal. He described it as a landmark in the country's pursuance of biofuels which is expected to have a positive impact on the environment. What according to you will be the major challenges that will need to be faced in order to realize this vision? What could be the major setbacks to the program?

This initiative will definitely bear fruits in the future. The government should take up certain initiatives like floating more EOIs and come up with subsidies



like that in the case of natural gas. The biggest challenge that I can see is the collection of feedstocks. If we talk about used cooking oil, the biggest source will be the restaurants, however looking at the statistics the major source will be the roadside vendors. A mechanism will have to be set so that the roadside vendors can be integrated and connected with the restaurants. If the government agencies will tie-up with the restaurants, then the collection process will be much easier and effective.

5. It's a known fact that biofuels like biodiesel can significantly enhance India's energy security and reduce petroleum import dependence, but scalability has always been a constraint. How can these issues be resolved so that entrepreneurial opportunities can be multiplied?

Our country is the third-largest consumer of energy after the USA and China. Biofuels like biodiesel will decrease our import bills and make us more self-reliant. Scalability won't be a problem because at the current speed by 2030 biodiesel will account for almost five percent of the total fuel we are consuming. Looking for alternative feedstock like used cooking oil and bridging the gap in its supply chain will boost the entrepreneurial opportunities.

6. Biodiesel reduces exhaust emission and thus helps in reducing pollution and has a high energy balance. Though it has become an attractive diesel fuel substitute due to these benefits, large areas of natural vegetation and forests have been cleared and burned to grow soyabean and palm oil trees to make biodiesel. The negative environmental effects seem to surpass all the above-mentioned advantages. What according to you can be a potential solution to this problem?

In every development project there has to be a proper balance. When we are clearing natural vegetation and forests, we are reducing oxygen availability. Therefore, this disadvantage will always surpass the advantages of using biodiesel. Though biodiesels are carbon neutral and biodegradable, the reduction in oxygen levels in the pursuit of obtaining feedstock will always create problems. The only solution is to shift towards more unconventional feedstocks like used cooking oil and industrial by-products. Nowadays we are also using algal oil.

7. After having presented and published about 11 international and national papers throughout your career, what is the most important thing that the process has taught you? What would you like to tell the young minds of our university and the country, who want to pursue their careers in this direction?

My message to all the budding engineers and technocrats is that one has to keep on working and doing good things to succeed in life. But most importantly, he or she should always keep human values and ethics as their top priority. Success is very important but not at the cost of human values. Whatever work a technocrat or engineer is doing, he or she should always think about serving the nation first. Our country is among one of the largest consumers of energy. Therefore, whoever is capable should come up with researches and innovations in this field so that our country can become more self-sufficient.

Delhi HC notice to Centre on fresh plea against IT Rules



The Delhi High Court on Thursday issued notice to the Centre on a fresh petition against certain provisions of the IT Rules 2021 that claimed they give excessive power to social media platforms to voluntarily remove content and place users under constant surveillance. A bench of Chief Justice D.N. Patel and Justice Jyoti Singh asked the Ministry of Electronics and Information Technology (MeitY) to reply to the petition filed by advocate Uday Bedi by September 13, the next date of hearing. Mr. Bedi has challenged Rules 3 and 4 of the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, brought into force from February 25, 2021. "The Rules have been made in gross disregard of the fundamental rights of the petitioner, guaranteed under Articles 14, 19 and 21 of the Constitution of India, 1950, who is a user of Social Media Intermediaries (SMIs) such as WhatsApp, Instagram, Twitter, etc.," the petition said. Mr. Bedi contended that the rules have given private SMIs the power to entertain and act upon complaints received by private persons, as well as on a voluntary basis to delete access to any information available on their platform if the conditions prescribed in Rule 3(1)(b) and 3(1)(d) are met. This, the petition stated, was against the judgment of the Supreme Court in *Shreya Singhal v. Union of India*, case, in which it was held that intermediaries cannot be given the power to judge as to which requests for taking down any information are legitimate and which are not. "While giving powers in excess of those given under the parent legislation (IT Act) to voluntarily remove access to information that does not conform to Rule 3(1)(b), the Impugned Rules have allowed the SMIs to place the users of these platforms under constant surveillance, which is a gross breach of the right to privacy," the plea said. It added that the rules also are unclear on the basis and mechanism by which the social media platforms can voluntarily take action "without peeping into all conversations that take place over the SMI platform." "Communications over WhatsApp are end-to-end encrypted, meaning that only the two users communicating with each other can view the messages and no third party has access to the same. In order to voluntarily act under the Impugned Rules, it would empower WhatsApp to constantly watch all communications taking place on the platform," the plea highlighted. The High Court is seized of several other petitions in connection with the new IT Rules filed by different online news platforms and individuals.

Govt to launch portal to enable online registration under PM-Cares scheme for children orphaned in pandemic due to Covid-19



The government is preparing to launch a portal that proposes to enable online registration and tracking of applications with due safety precautions under the "PM-Cares for Children Scheme." The scheme seeks to provide long-term support to children who have lost both parents, surviving parents, legal guardians, or adoptive parents due to Covid-19 since the pandemic gained momentum in March 2020. The "PM Cares For Children" scheme seeks to support the child through a convergent approach, gap funding for ensuring education, monthly stipend at the age of 18 years, and lump sum amount of Rs 10 lakh on turning 23 years of age. The support plan under the scheme was launched by Prime Minister Narendra Modi on May 29. Since the ministry of women and child development is the nodal ministry for anchoring the scheme in collaboration with states and districts, this dedicated portal developed by National Informatics Centre will also be managed by the WCD ministry. The portal will enable applicants to register and access the information with regards to the update on their application using secure login procedures. Separate login facilities are proposed to enable key stakeholders like child welfare committees and district magistrates to access the portal. A manual to help fill in details of the child has also been prepared to enable a clear understanding of the registration process. The portal shared with states for testing is likely to be officially launched any day now, sources said. As per the scheme, a corpus of Rs 10 lakh in the form of a fixed deposit in the name of the child will be created. This corpus will be used for providing them a monthly stipend for five years when they turn 18 years of age. This stipend will be used to take care of their personal requirements during the period of higher education. At 23 years, each child will get the corpus amount as one lump sum for personal and professional use. This measure is cited as a step that will enable the child to have the necessary financial support when he or she moves out of school and is an adult who can take decisions regarding their future. Meanwhile, the National Commission for Protection of Child Rights has been collecting data being sent in by states in keeping with the directions of the Supreme Court with regards to children who have lost one or both parents during the pandemic. This also includes those children who had not lost parents due to Covid-19. In the last affidavit filed in SC, the count of children impacted was 30,077 and out of this 3,621 were orphaned. 26,176 had lost a single parent and 274 children were classified as abandoned. This is not the final number as states have been sending and updating data.

"Pingedemic" grips Britain as fears of food shortages grow

Britain's food supply chain is "right on the edge of falling" as absence related to COVID-19 has aggregated a critical shortage of labor. British business secretary said he was concerned by a so-called "pingedemic" in which hundreds of workers have been tested to isolate as fears grow of food and fuel shortages and added that they are monitoring the situation closely.

Ukraine seeks stronger security guarantees on Nord Stream 2

Ukraine has many questions on how a deal between the US and Germany can mitigate the security threat posed by the Nord Stream 2 pipeline. Washington and Berlin unveiled an agreement to map out the consequences for Russia if Moscow uses the pipeline to harm Ukraine and other European countries. Ukraine, which strongly opposes the \$11 billion project, signals its displeasure by formally initiating consultations with the EU and Germany. Although the deal includes sweeteners, Ukraine fears Russia will use energy as a weapon and that it will lose transit fees once the pipeline to carry gas under the Baltic sea from Russia to Germany, bypassing Ukraine, is complete.

Taliban have momentum, half of the Afghan districts under their control: US General Milley

The Khaama Press quoted General Milley that the Taliban has gained momentum in the past 10 months and over 190 out of 419 districts in Afghanistan have fallen to the Taliban and that, this will now be a test for the leadership and people of Afghanistan. He also said though the endgame is not written yet in a complete takeover by the group. Meanwhile, US Defence secretary Lloyd Austin said that the US post-withdrawal military efforts will be for countering terrorist threats, not the Taliban, and noted that US forces are still on track to leave Afghanistan by the end of August, but a small robust presence of American troops will remain in Kabul to provide security to the diplomatic facilities and the international airport.

Government claim on oxygen-scarcity deaths is appalling, say experts

COVID-19 death certification does not record lack of oxygen, says epidemiologist. The Centre's claim in the Rajya Sabha on Tuesday that a lack of oxygen did not lead to the deaths of COVID-19 patients was hollow and callous, public health experts said. Public health expert and epidemiologist Chandrakant Lahariya said that technically no COVID-19 death would be recorded as "due to lack of oxygen," but the experience of patients and the fact that the availability of oxygen would have saved lives meant that the Centre should have chosen its words with care.



"They will be recorded as COVID deaths and a lack of oxygen will never be noted as an immediate cause. However, oxygen is necessary for treatment, and the failure of the system to provide it to be acknowledged. The Centre's bureaucratic response is contrary to the public experience and a more empathetic view was required. Not doing so means we run the risk of repeating mistakes," Dr. Lahariya said. Manraj Anisla, Convener, All India Drug Action Network, described the Centre's position as "absurd" and reflective of a refusal to acknowledge the toll of the second wave, because of colossal failures to prepare and respond. "Oxygen shortage was undeniably a direct factor in causing numerous deaths — not limited to hospitals, but even patients who became stranded in homes and were struggling to get admission in hospitals," she told The Hindu. "There is a reality that cannot be erased from public memory — of hospitals over their making daily appeals for oxygen supplies, to media and courts, and sharing death tolls due to oxygen running out." "The statement made in Parliament that there were no deaths reported by States caused by oxygen shortage is surprising and appalling. Policymakers at both the Centre and in States should not be hiding behind guidelines on death reporting which might not have included specific questions around oxygen shortage. It is well documented that oxygen stock-outs were a trigger and a key underlying reason for several deaths. We owe it to those who lost their lives to be transparent about that were premature causes of these deaths, its accountability, and work on ensuring that such a scenario never recurs in our health system," said Anant Bhan, researcher, Global Health, Bioethics, and Health Policy, Minister of State for Health Bharti Pawar had said in her written response on Tuesday that States had not "specifically reported" instances of people dying due to lack of oxygen. While this is officially true, many States — and this includes both government and private hospitals — have admitted to an oxygen shortage during the second wave and hospital staff reveal a different story. Maharashtra Health Minister Rajesh Tope on Wednesday said that there was no record in the State of any death due to a shortage of oxygen during the two waves of the pandemic. "We have never said that because of shortage of oxygen a COVID-19 patient has died in any hospital in the State... There is no record of any such case, nor have I made any statement to this effect... The fatalities that have occurred were due to co-morbidities or other medical ailments." A Maharashtra official on condition of anonymity said: "A death due to 'oxygen deficit' usually occurs in cases of choking or drowning and is considered culpable homicide not amounting to murder. If one says COVID-19 patients have died in a hospital due to oxygen shortage, then it would involve a police or government probe and a case would have to be lodged." "No case in TN" Not a single person has died due to oxygen shortage in Tamil Nadu, Tamil Nadu Health Minister Ma. Subramanian claimed while noting that the State had faced an acute shortage in May when the daily requirement of oxygen shot up from 230 MT to over 500 MT. However, many doctors, who were on duty during the peak of the second wave, recounted that many patients with COVID-19 waited endlessly outside hospitals due to a lack of oxygen-supported beds. Doctors, who were working the wards, had a different story. "Some of them even died while waiting in ambulances," a young doctor who worked in a zero-day ward said. "We had patients dying due to oxygen shortage during the crisis. Ventilators and CPAP machines were not able to deliver the required amount of oxygen because of short supply," said a government doctor in Chennai. Another doctor pointed out that a few patients died of hypoxic brain injuries caused by a shortfall in oxygen supply. Vinata Thomas, Director, Telangana Institute of Medical Sciences, Cachibowli, Telangana said on May 11 that the deaths were part of a natural progression of the disease and complications, and not due to a shortage of oxygen. The Uttar Pradesh government did not admit to any deaths due to scarcity of oxygen but admitted facing a shortage of oxygen in several instances. On April 18, CM Adityanath after a review meeting with senior officials instructed them to take immediate steps to ensure an uninterrupted supply of medical oxygen to patients amid reports of shortage in some places. Twelve patients, including a doctor, died at Batra Hospital, a private hospital in Delhi, on May 1 as it ran out of liquid medical oxygen and oxygen cylinders and there was no oxygen in the hospital for more than an hour. On April 20, Sri Ganga Ram Hospital said that 25 severely ill patients had died in 24 hours in the hospital and they were facing an oxygen shortage.

Israel appoints commission to review "Pegasus" maker NSO



Israel has established a commission to review allegations that NSO Group's controversial Pegasus phone surveillance software was misused. Pegasus has been implicated in possible mass surveillance of journalists, human rights defenders, and 14 heads of state. NSO has said it exports to 45 countries with approval from the Israeli government and has claimed that Pegasus had "exposed many terror cells" and it was issued or sold to irresponsible bodies, then there is a need to check. Pegasus can hack into mobile phones without the user knowing, enabling clients to read every message, track a user's location and tap into the phone's camera and microphone.

9 NDRF teams deployed in Mumbai, other Maha districts after heavy rain

Nine teams of the National Disaster Response Force (NDRF) have been deployed in Mumbai, Thane and other districts of Maharashtra after heavy rain caused flooding in some coastal areas of the state on Thursday. Four teams have been deployed in Mumbai and one each in Thane and Palghar. One team will reach Chiplun in Ratnagiri by late afternoon, NDRF said.

Antitrust regulator CCI accuses Amazon of concealing facts in deal for Future Group unit



India's antitrust regulator has accused Amazon.com Inc of concealing facts and making false submissions when it sought approval for a 2019 investment in a Future Group unit, a letter to the US e-commerce giant sent by Reuters showed. The letter compiles Amazon's bitter legal battle with Future Group over the Indian firm's decision to sell its retail assets to Reliance Industries — a matter that is now before India's Supreme Court. Amazon has argued that the terms agreed upon in its 2019 deal to pay \$192 million for a 49% stake in Future's gift voucher unit prevent its parent, Future Group, from selling its Future Retail Ltd business to Reliance. In the letter dated June 4, the Competition Commission of India (CCI) said Amazon hid factual aspects of the transaction by not revealing its strategic interest in Future Retail when it sought approval for the 2019 deal. "The representations and conduct of Amazon before the Commission amounts to misrepresentation, making false statements and suppression of/and concealment of material facts," the letter said. It also noted that its review of the submissions made had been prompted by a complaint from Future Group. In the four-page letter, a so-called "show cause notice," the CCI asked Amazon why it should not take action and penalize the company for providing false information. Amazon has yet to respond, according to a source with direct knowledge of the matter who declined to be identified as the letter has not been made public. Amazon said in a statement to Reuters it had received a letter, was committed to complying with India's laws, and would extend its full cooperation to the CCI. "We are confident that we will be able to address the CCI's concerns," it said. Representatives for Future and the CCI did not respond to Reuters' requests for comment.

Vaibhav Choukse, a competition law specialist and partner at J Sagar Associates, said it was rare for the CCI to issue such a notice and that if the CCI was not satisfied by Amazon's response, it could lead to a fine and even a review of the deal. "The CCI has wide powers which include directions to re-file the approval application and even revoke the approval under exceptional circumstances," Choukse said. The CCI's 2019 approval order states its decision "shall stand revoked if, at any time, the information provided" is found to be incorrect. The dispute over Future Retail, which has more than 1,500 supermarkets and other outlets, is the most hostile flashpoint between Jeff Bezos' Amazon and Reliance, run by India's richest man Mukesh Ambani, as they try to gain the upper hand in winning over the country's consumers. Amazon also has a host of other challenges in India, a key growth market where it has committed \$6.5 billion in investments, including a separate CCI probe into alleged practices that small businesses say have hurt them. In addition, it faces the prospect of more regulations that would restrict the sale of private labels and would prohibit the U.S. firm from allowing its affiliates to list products on its website. The CCI letter compared three sets of submissions Amazon made to it in 2019 with submissions made later to other legal forums, saying they were "contradictory." In particular, it said Amazon had explained its interest in investing in Future's coupon unit as one that would address gaps in India's payments industry. But the letter stated Amazon had disclosed in other legal forums that the foundation of its relationship with Future Coupon was certain special rights it obtained over Future Retail. "Amazon has concealed its strategic interest" in Future Retail, the letter said, adding: "Such interest and the purpose of the combination... was not disclosed to the Commission despite specific requirements." The CCI also objected to one section of a submission where Amazon had told the regulator it had nothing to do with one particular legal agreement that two Future entities had signed between themselves days ahead of its 2019 deal. But Amazon later claimed before an arbitrator that the agreement was an "integrated part" of the transaction, the letter said.

Tokyo Olympics : Mirabai Chanu wins the Silver



EARLY LIFE
Saikhom Mirabai Chanu was born on 8 August 1994 in Nongpok Kakching about 30 Km away from Imphal city, Manipur to a Meitei family. Her family identified her strength when she was just 12. It could be easily carry a huge bundle of firewood home when her elder brother found it hard to even pick it up.

CAREER
Chanu's first major breakthrough came at the Glasgow edition of the Commonwealth Games; she won the silver medal in the 48 kg weight category. Chanu qualified for the 2016 Rio Olympics in the women's 48 kg category. However, she failed to finish the event, owing to no successful lifts in any of her three attempts in the clean & jerk section. In 2017, she won the Gold medal in the Women's 48 kg category by lifting a competition record 194 kg in total (85 kg snatch and 109 kg clean & jerk) in the 2017 World Weightlifting Championships held at Anaheim, CA, United States. Chanu won the silver medal in 49 kg division at the 2020 Summer Olympics in Tokyo with a total lift of 202 kg, becoming the first Indian weightlifter to win silver at the Olympics and the second Indian weightlifter after Karnam Malleswari to win an Olympic medal. A new Olympic record was registered by Chanu with a successful lift of 115kg in clean and jerk. Manipur Chief Minister N. Biren Singh announced an award of ₹1 crore for her. Indian Railway Minister Ashwin Vaishnaw announced an award of ₹2 crore, a promotion and more for her.

AWARDS
National
Rajiv Gandhi Khel Ratna, highest sporting honour of India (2018)
Padma Shri, the fourth highest civilian award of India (2018)
Other
₹20 lakh (US\$28,000) from the Government of Manipur for the gold medal in the 2017 World Weightlifting Championships.
₹10 lakh (US\$14,000) from the Government of Manipur for qualifying for the 2020 Tokyo Summer Olympics.
₹25 lakh (US\$35,000) from the Government of Manipur for participating in the 2020 Tokyo Summer Olympics.
For winning the silver medal at the 2020 Tokyo Summer Olympics
₹50 lakh (US\$70,000) from the Government of India.
₹1 crore (US\$140,000) from the Government of Manipur, and appointment as Additional Superintendent of Police (Sports) in the Manipur State Police.
₹2 crore (US\$280,000) from the Ministry of Railways (India) and promotion in the Northeast Frontier Railway.

Madagascar prosecutors say foiled assassination bid on the president

The prosecutor general's office in Madagascar said it foiled an assassination attempt on President Andry Rajoelina, and has arrested several foreign and national suspects as a part of an ongoing investigation for undermining state security and has assured that they will shed light on this case with any further leads.

IN AND AROUND

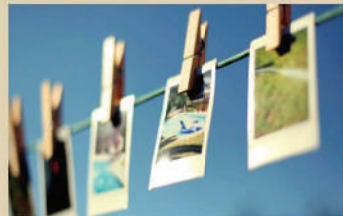
YEAR II

AUGUST 1 2021, SUNDAY

FORTNIGHTLY NEWSLETTER

University's centenary celebrations:

Opening of a Centenary Memory Bank: As a part of its centenary year celebrations, Harcourt Butler Technical University, Kanpur has opened a Centenary Memory Bank. The university has asked everyone who has been a part of it and is associated with it to help them showcase 'OUR 100'- 100 things that define its past, present and future. The Memory Bank has been opened to collect memories, anecdotes, photos, videos and more, from students, staff, alumni and friends. The university aims to showcase select memories on their website so that everyone can see other submissions online. All memories and materials will be submitted to the University's Archivist to be retained in the long-term. All the submissions can be made till 10th October 2021. Individuals can make any number of submissions about the people, places, events that they remember and want to share. Submissions about people and events from under-represented groups, for example those who identify as minority ethnic, LGBT+ or as having a disability have been especially encouraged. The submissions can be made via 'Centenary Year 1921-2021' portal on the universities' website <https://hbtu.ac.in/>. After clicking on the Submit Now button, users will be directed to a new page and the data will be saved to the HBTU Repository.



National Level Faculty Development Programme On Data Science and Machine Learning.

One Week Online National Level Faculty Development Program (FDP) cum Short Term Training Programme (STTP) on "Recent Trends & Advancement in the era of Machine Learning" was organized by The Department of Computer Science & Engineering, HBTU Kanpur from 19th to 24th July. The patron of the program was Prof. Samsher Hon'ble Vice-Chancellor HBTU Kanpur and Prof S.K. Singhal Dean, School of Engineering HBTU Kanpur. The convener was Prof. Narendra Kohli and the Resource Persons were Prof. Nishchal K. Verma, IIT Kanpur; Prof Malay K.Dutta, Centre for Advanced Studies, Lucknow; Prof. Satish Kumar Singh; Prof C. Jeyamale, TCE Madurai, and Mrs. Mamta Swarup, Director, Sapphire Application Integrators Pvt. Ltd, New Delhi. The coordinators of the program were Dr.(Mrs) Anita Yadav, Dr. Prabhat Verma, Dr.(Mrs) V.D. Kaushik. The program was technically sponsored by IEEE UP Section(INDIA). The objective of the program was to deliver a lecture on advancement in the field of Computer Science and Engineering in data science, machine learning, etc. Cultivating a good understanding of fundamental issues and provocations of machine learning; data, model selection, complexity. To develop a perception of the strength and weaknesses of popular machine learning and IoT approaches and also to gain expertise in doing independent study and research. Undergraduate/Postgraduate students, Research Scholar, Academician, and industry person participated the program and the feedback of program was excellent. Starting from very elementary concepts to the venerable concepts of cyber security and data analytics.

3D Printing and Design training course

As we all know, the technology industry has taken huge strides in the 21st century. So Mechanical Engineering Department, HBTU Kanpur is organizing the future skill-training course on "3-D Printing and Design" under TEQIP III. This programme is sponsored by the Ministry of Education. The maximum duration of the course will be of 80 hours. This course is designed to meet the industry demand in respective "Advanced Technologies" and is scheduled from 26th July 2021 to 28th August 2021. Mr. Saurabh Sangal, Assistant Professor, MED, HBTU Kanpur, will give directions to the course.

A Guidance Program on career opportunities after BTech



HBTU Kanpur has successfully conducted a webinar on 'A Guidance Program on Career Opportunities After BTech' in association with ACE Engineering Academy and Deep Learn on 27th July 2021, via online meeting platform Zoom. The webinar resulted in a fruitful event with the presence of Mr. Anand Kumar (Motivational Speaker, senior faculty member at ACE Engineering Academy), Patron (Prof. Samsher, Hon'ble Vice Chancellor, HBTU Kanpur), Chairman (Prof. Ram Autar, Dean, School of Basic and applied science, HBTU Kanpur), Convener (Prof. Ram Naresh, Dean Student Welfare, HBTU Kanpur), Coordinator (Dr Raghvendra Singh, Department of Mathematics, HBTU Kanpur). The webinar was aimed to open the door of unlimited opportunities for upcoming engineers by guiding them about the career prospects after completion of BTech and how they can contribute in building our nation and helping humanity along the way. After attending the webinar, students felt highly motivated and had many a great thought about their visions for the future. The overall feedback of the Guidance Program was phenomenal.

STTP on the recent advancements in Engineering and Technology for better career prospects for the students of the university

The Training and Placement Cell of HBTU Kanpur organized a virtual Short Term Training Program (STTP) for students on the recent advances in Engineering and Technology for better career prospects. In the training sessions organized between July 15 to July 20, experts from ISRO, HAL Kanpur, IIT Kanpur, IIT Bombay, TCS and many more industries delivered lectures on a wide variety of subjects. Prof. Abhishek, IIT Kanpur on aerodynamics; Mr. Shivashish, TCS on TCS Digital Hiring Interaction; Dr. Neeraj Sinha, IIT Kanpur on Application of Rapid Prototyping in Engineering and Medical; Dr. Abhishek Kumar Gupta, IIT Kanpur on Basics of MATLAB; Mr. Rahul Bhattacharya, IIT Kanpur on blockchain and cryptocurrency for beginners; Mr. Amit Pandey, founder and CEO- Super 77, CEO- PinCap on the power of leadership, Dr. U.S. Yadav, HAL Kanpur on introduction to helicopters, Mr. Vikas Nigam, HTechSoft on Python programming and Application Development; Dr. Pradeep Dixit, IIT Bombay on MEMS & MEMS-Based Application and Mr. Abhishek, Aspirevision Tech on Career skills for young engineers. One of the major highlights of the STTP was a session by Dr. Anil Chandra Mathur, former Group Director at Space Applications Centre, ISRO on challenges and opportunities for young engineers in space science and technology. The STTP attracted a massive active participation of more than 200 students from the university and the program was rated as very satisfactory on the parameters of audio and visual quality, the structure and relevance of the content, the skill of delivery of the content. The patron of the program was Hon'ble Vice-Chancellor Prof. Samsher HBTU, Kanpur. In his statement, he said that these programs are a boost to the personality development of the students. They are encouraged to carry our research works and develop the technology. Prof. P.K. Kamani, Dean, Planning & Resource Generation, HBTU Kanpur was the chairman of the program. Dr. Anita Yadav (TnP Coordinator), Dr. S.K.S. Yadav (TnP Coordinator) were the convener. The Student Coordinator of the training program was Deepika Juneja (3rd BTech) while Akshay Kumar Singh (3rd BTech ME) being the Vice Student Coordinator.

ALUMNI INTERACTION

YEAR II

AUG 1 2021, SUNDAY

FORTNIGHTLY NEWSLETTER

INTERVIEW OF SRI. ARVIND SINGH -Project Director ,Kanpur Metro

Question1:- What has been your journey after completing your B.Tech From HBTI ?

I did my B.Tech in Civil engineering in the year 1992 from HBTI, the job opportunities were very few at that time but being a civil engineer you have an aptitude for engineering services other than civil engineering. I joined CPWD (Central Public Works Department) as a junior engineer then I was selected in UPSC IES (1995 batch) and got DOT (Department of Telecommunications) after getting training for G-A offices in Ghaziabad, I was posted in Ahmedabad as an Assistant Executive Engineer(AEE) and, in 2001, I was promoted as an Executive Engineer at Rajkot and Maison in Gujarat, In 2007, transferred to Amritsar then in 2010 in Delhi. In 2011, I joined Delhi Metro Rail Corporation Limited (DMRC) as a Deputy chief engineer and executed work of underground as well as elevated metro construction. In 2014, I joined LMRC (Lucknow Metro Rail Corporation) as a deputy chief engineer, In 2016, Chief project manager in LMRC then presently July 2020, project director of the Kanpur metro project.

Question2:- How do you see the impact of the years you spent in HBTI in your life?

See I am from Bihar, but I studied in Allahabad from 9th class onwards. At that time there were not that many opportunities, even having a telephone at home was a big deal. But in HBTI there was a diverse crowd. There were different people from different places and had great exposure. HBTI thus naturally provided better opportunities. I got 4th rank in my batch but what amazed me was that the topper of my batch was from a village background.

Question3:- How even after the Covid lockdown Kanpur metro project is progressing so fast?

Since the Janta curfew was announced so there was no work for almost 2 months from 22nd March to 15th May. On 15th May we got permission from D.M. to start the work. Our requirement was 1800 workers but initially, only 25 workers were available. We started working with minimal requirements and workers. Slowly we build confidence in workers and increased our workspace. We worked even without power supply conditions with Digi supply. Eventually, with quick and right decisions, we started working efficiently. And today we can say that no metro project has been progressed at such a rate. Also, the project has a magnificent modern design that this government project can easily beat any MNCs out there.

Question4:-The construction of Kanpur Metro is continuously creating new records, use of pre-cast T-girders, completing the piling in the priority section in just 424 days, the rapid-paced construction is quite rare, especially in Kanpur, where the COD bridge took 13 years to complete! How you are achieve this pace?

See in any project contractor is the executing body and We act as the directing body. We guide and facilitate the contractor according to the plan of the project. Suppose any contractor approaches us for any query or work, now we must make sure that we make quick as well as right decisions. If we delay our decisions it could make e contractor lose his interesting work and may create pressure on them. Thus you have to give quick decisions.

The second thing is making quick payments. In KMRC Chief Deputy engineers have the authority for making payments. We are making some part of the payment within 48 hours. Rest is made with proper security within a given time. since we are making quick payments it keeps workers and contractor motivated and also give us authority to hammer the contractor if he is not working properly. Thus quick decisions and quick payment are principles to main the efficient working of the project.



Question 5:- You graduated in the 1990s, the time when the Indian economy just opened up. So what were your experiences at that time and how you adapted to the changing scenarios?

The requirement of civil engineers at that time was very less. Even in UPSC, the seats for civil engineers were very few. But things changed after 1997. Civil engineering started blooming and there was a great demand for civil engineers.

Question 6:- How did you manage the construction activities and workers during COVID lockdown and restrictions?

Until 15th May 2020, all such construction activities were completely banned in the state. On 25th May, we requested respected DM to start the work with a minimum number of labourers. We followed all the COVID SOPs put forth by the government. Thermal scanning was must. We also conducted several RT-PCR tests. We had constructed a full-fledged labour Kendra, which still works. They got all the required facilities there to stay and work. Despite of all such restrictions and struggles, Bristol managed to complete the work and that too with setting a world record of completion in just one and a half years.

Question 7:- HBTU had a glorious past, which you also have been a part of, but in the recent NIRF 2020 Rankings, HBTU ranked 166!! For an institution, which has been the parent institute of IIT-K, this rank is just terrible. So, from the perspective of an HR expert, why and where HBTU lagged?

Back then, when I was a Harcourtian, Uttar Pradesh and Uttarakhand collectively had only 6 government engineering colleges, except for IITs, where HBTU you ranked second after MLNR. Talking about tagging scenarios, it was next to nothing. And now why this ranking is 166, I don't know.

One drawback that I could find is that HBTU is constructing hostels and other embellishments in the West campus while the entire University is

established in the East campus.

Question8:- Kanpur metro project is about to complete its priority corridor from IIT-Kanpur station to Motijheel station and is in full pace to construct its corridor-1. What infrastructural and economical changes can we expect in Kanpur city during and after the completion of the Kanpur Metro project?

On a major basis, you will find social impact. There will be a complete tobacco-free environment. Each and every corner of the station will be lashed with CCTV cameras henceforth ensuring the safety of women. They will now prefer the metro over autos or other means of public transport.

In the Lucknow Metro, every day we find numerous card, cash and electronic devices of the travellers which we return to the respective owners, thanks to the CCTVs in the stations and the metro.

Since people will now prefer the metro over road travel, there will be a traffic reduction and henceforth a reduction in road accidents. Moreover, there will be a complete inauguration of a disciplinary city.

Question 9:- Our Harcourt Butler Technical University is about to complete its 100 years of establishment and to celebrate this occasion the university will be organising a Centenary Celebration on 25th November this year which will probably be blessed by the presence of the Honorable President of India, Shri Ram Nath Kovind Ji. What are your suggestions for the university to enhance the glory of this Milestone of completion of 100 years?

My first and only suggestion for the university on this occasion will be to join both the East and West campuses. This has now become a necessity. During my days of study, we used to travel from one campus to the other by bicycle which was quite hectic. And unfortunately, the scenario continues to be the same.

Question 10:- Being an expert in the field of Metro Rail System, what is your views are some of the problems and subjects of this field that require innovation and can be worked upon by the Engineering students which will enhance the future Metro projects in UP and also nationwide?

In my opinion, everybody is in his or her learning phase, even I am in the learning phase. I learn various things every day. We should always try to chase the next.

Coming to metro establishments, the Lucknow metro station has facilities far better than the Delhi metro station and henceforth us that is the Kanpur metro is even better than the Lucknow metro station and I will only wish that the next to be established metro station of the state comes out to be even better.

My second suggestion would be, be your boss, be it a private sector or a public sector. Several people will question your work and everybody will give their opinions, you just have to listen to them and not always abide by them.

Question 11:- Our Harcourt Butler Technical University's campus is divided into two parts - 77 acres East campus and a 271 acre west campus, both of them are far apart. This is one of the biggest hindrances to the growth of the University and also prohibits the students of the university to utilize all the facilities of the University. The University is planning to resolve this problem by joining both campuses through a corridor. You are a marvel in the field of infrastructure can be of great help and guidance in resolving this problem. Can we expect that you provide some help and guidance sparing some time from your busy schedule?

Sure, I am ready to provide every possible guidance.

Vaccine immune response linked to age: shows a new laboratory study

A new laboratory study from Oregon Health and Science University suggests that older people appear to have fewer antibodies against the novel coronavirus. The study was published in the Journal of the American Medical Association. "Our older populations are potentially more susceptible to the variants even if they are vaccinated," said senior author Fikadu Tafesse, Ph.D., assistant professor of molecular microbiology and immunology in the OHSU School of Medicine. Tafesse and colleagues emphasized that even though they measured diminished antibody response in older people, the vaccine still appeared to be effective enough to prevent infection and severe illness in most people of all ages. "The good news is that our vaccines are really strong," Tafesse said. Vaccinations reduce the spread of the virus and new and potentially more transmissible variants, especially for older people who appear to be more susceptible to breakthrough infections. "The more people get vaccinated, the less the virus circulates," Tafesse said. "Older people aren't entirely safe just because they're vaccinated; the people around them really need to be vaccinated as well. At the end of the day, this study really means that everybody needs to be vaccinated to protect the community." Researchers measured the immune response in the blood of 50 people two weeks after their second dose of the Pfizer vaccine against Covid-19. They grouped participants into age groups and then exposed their blood serum in test tubes to the original "wild-type" SARS-CoV-2 virus and the P.1 variant (also known as gamma) that originated in Brazil. The youngest group - all in their 20s - had a nearly seven-fold increase in antibody response compared with the oldest group of people between 70 and 82 years of age. In fact, the laboratory results reflected a clear linear progression from youngest to oldest: The younger a participant, the more robust the antibody response. "Older people might be more susceptible to variants than younger individuals," Tafesse said. The findings highlight the importance of vaccinating older people as well as others who may be more vulnerable to Covid-19, said co-author Marcel Curlin, MD, associate professor of medicine (infectious diseases) in the OHSU School of Medicine. "The vaccine still produces strong immune responses compared with natural infection in most older individuals, even if they are lower than their younger counterparts," Curlin said. "Vaccination in this group may make the difference between serious and mild disease, and likely reduces the chances of transmitting SARS-CoV-2 to another person."

Elon Musk Congratulates ISRO on "Vikas"



SpaceX chief executive Elon Musk has congratulated India in his signature one-word tweet style for successfully conducting the third "hot test" of Vikas engine. The Vikas engine will play a critical role in India's ambitious Gaganyaan mission. Musk's response came after the Indian Space Research Organisation (ISRO) tweeted about the successful engine hot test on July 14. "Congratulations!" said Musk, with India's national flag emoticon. ISRO has successfully conducted the hot test of the liquid propellant Vikas Engine for the core L110 liquid stage of the human-rated GSLV MkIII vehicle, as part of engine qualification requirements for the Gaganyaan Programme, said the space Organisation. ISRO had said the engine was fired for 240 seconds at the engine test facility of ISRO Propulsion Complex (IPRC), Mahendragiri in Tamil Nadu. The performance of the engine met the test objectives and the engine parameters were closely matching with the predictions during the entire duration of the test, added the space organisation. Elon Musk's tweet on ISRO's successful engine test comes in the backdrop of a shared vision both ISRO and his company SpaceX have for low-cost space missions. ISRO has also congratulated NASA and SpaceX for the historic first launch of the manned mission after 2011. "Great job," it said. Four Indian astronaut candidates have already undergone generic space flight training in Russia as part of the Gaganyaan Programme. ISRO's heavy-lift launcher GSLV Mk III has been identified for the mission. The formal announcement of the Gaganyaan programme was made by Prime Minister Narendra Modi during his Independence Day address on August 15, 2018. The initial target was to launch human spaceflight before the 75th anniversary of India's independence on August 15, 2022.

China rolls out high-speed maglev train at 600km/h

China on July 20, rolled out a high-speed maglev train with a designed top speed of 600 km per hour, stated to be the world's fastest ground vehicle, according to the official media. The new maglev transportation system made its public debut in the coastal city of Qingdao, China's east Shandong province, Xinhua news agency reported. Launched in October 2016, the high-speed maglev train project saw the development of a magnetic-levitation train prototype with a designed top speed of 600 km per hour in 2019, and conducted a successful test run in June 2020, the report said. Ding said, adding it fills the speed gap between aviation and high-speed trains. Compared with traditional vehicles running on wheels, high-speed maglev trains do not have contact with rail tracks. He Yunfeng, (CRRC Zhuzhou Electric Corporation Limited) said they produce very little noise. "They can start and stop quickly."

Researchers at IIT Madras develop an AI tool to study cancer causing mutations

Researchers at IIT Madras have developed an AI tool called NBDriver (neighbourhood driver) for use in analysing cancer-causing mutations in cells. By looking at the neighbourhood, or context, of a mutation in the genome, it can look at harmful "driver" mutations and distinguish them from neutral "passenger" mutations. This technique of looking at the genomic neighbourhood to make out the nature of the mutation is a novel and largely unexplored one. In a paper published in the journal *Cancers*, the researchers explain that the nature of the mutation depends on the neighbourhood, and how this tool may be used to draw the line between driver and passenger mutations. B. Ravindran, head of the Robert Bosch Centre for Data Science and AI at IIT Madras and one of the corresponding authors, said in a press release that one of the major challenges faced by cancer researchers involves the differentiation between the relatively small number of "driver" mutations that enable the cancer cells to grow and the large number of "passenger" mutations that do not have any effect on the progression of the disease. In previously published techniques, researchers typically analysed DNA sequences from large groups of cancer patients, comparing sequences from cancer as well as normal cells and determined whether a particular mutation occurred more often in cancer cells than random, said Prof. Karthik Raman, from the biotechnology department of IIT Madras and another corresponding author. "However, this 'frequentist' approach often missed out on relatively rare driver mutations," he noted, adding that some studies have also looked at the changes caused by the driver mutations in the production of essential biological products such as proteins. Statistical modeling - The method of distinguishing between driver and passenger mutations solely by looking at the neighbourhood is novel. "Through robust statistical modelling, we show that there is a significant difference in the pattern of sequences (or context) surrounding the driver and passenger mutations," said Shayantan Banerjee, who is a master's student in the Department of Biotechnology, IIT Madras, and the lead author of the paper. Accuracy of tool - The researchers studied a dataset containing 5,265 mutations to derive the model. According to Prof. Raman, NBDriver, had an overall accuracy of 89% and ranked second out of 11 prediction algorithms. In comparison, he said that the top performing tool, or FATHMM, achieved an accuracy of 91% on the same dataset. For the future, the group aims to develop an easy-to-use drag-and-drop web interface that will enable cancer researchers with limited computational or programming skills to get predictions and extract genomic information on their preferred set of mutations. The group also plans that NBDriver will be a part of a broader cancer genomic sequence analysis "pipeline" being developed at the centres.

'Best day ever': expressed Jeff Bezos on blasting into space in own New Shepard

Billionaire Jeff Bezos has made a short journey to space, in the first crewed flight of his rocket ship, New Shepard. He was accompanied by Mark Bezos, his brother, Wally Funk, an 82-year-old pioneer of the space race, and an 18-year-old student. They travelled in a capsule with the biggest windows flown in space, offering stunning views of the Earth. When the capsule touched back down after the 10-minute, 10-second flight, Jeff Bezos exclaimed: "Best day ever!" New Shepard, built by Bezos' company Blue Origin, is designed to serve the burgeoning market for space tourism. Amazon founder Mr Bezos - and other participants in the "billionaire space race" - have been criticised for offering what some see as joy rides for the super-wealthy. Critics say the money could be spent on pay rises for employees or fighting climate change. However, Mr Bezos insists he has an environmental vision: "We need to take all heavy industry, all polluting industry and move it into space, and keep Earth as this beautiful gem of a planet that it is," he told MSNBC. "It's going to take decades and decades to achieve, but you have to start, and big things start with small steps... that's what this sub-orbital tourism mission allows us to do, it allows us to practice over and over. On this flight was the oldest person who has been to space - Ms Funk - and the youngest, student Oliver Daemen. The spacecraft lifted off at 14:12 BST (09:12 EDT) from a private launch site near Van Horn, Texas. At a post-launch news briefing, Jeff Bezos said: "My expectations were high and they were dramatically exceeded." Two minutes into the flight, the capsule separated from its rocket and continued upwards towards the Karman Line - the most widely recognised boundary of space that lies 100km up. The newly minted-astronauts shouted "wow!" and cheered. The post-flight briefing was shown video of the occupants performing somersaults and tumbling during four minutes of weightlessness. Stunning views of the Earth could be seen outside. Jeff Bezos said he was surprised by the sensation of microgravity: "It felt so normal," he explained. Ms Funk added: "It was great, I loved it, I can hardly wait to go again." In the 1960s, Ms Funk was one member of a group of women called the Mercury 13. They underwent the same screening tests as male astronauts, but never got to fly under the US national space programme. Mr Bezos told CBS News on Monday: "Wally can outrun all of us. During the Mercury 13, she was better than all the men and I can guarantee that's still true today." Bezos' brother Mark, 53, is a senior vice president at Robin Hood, a New York-based charity. Oliver Daemen is the son of a Dutch financier. Jeff Bezos recently resigned as chief executive of Amazon, the e-commerce giant he founded, in order to concentrate on his other ventures, including Blue Origin.

India's first green hydrogen plant to be built at Mathura: IOC

India's largest oil firm IOC will build the nation's first 'green hydrogen' plant at its Mathura refinery, as it aims to prepare for a future catering to the growing demand for both oil and cleaner forms of energy. Indian Oil Corporation (IOC) has drawn a strategic growth path that aims to maintain focus on its core refining and fuel marketing businesses while making bigger inroads into petrochemicals, hydrogen and electric mobility over the next 10 years, its chairman Shrikant Madhav Vaidya said. The company will not set captive power plants at all its future refinery and petrochemical expansion projects and instead use the 250 MW of electricity it produces from renewable sources like solar power, he told PTI in an interview. "We have a wind power project in Rajasthan. We intend to wheel that power to our Mathura refinery and use that electricity to produce absolutely green hydrogen through electrolysis," he said. This will be the nation's first green hydrogen unit. Blue hydrogen uses carbon capture and storage for the greenhouse gases produced in the creation of grey hydrogen. Green hydrogen production - the ultimate clean hydrogen resource - uses renewable energy to create hydrogen fuel. "Mathura has been selected by virtue of its proximity to TITZ (Taj Trapezium Zone)," Vaidya said adding the green hydrogen will replace carbon-emitting fuels that are used in the refinery to process crude oil into value-added products such as petrol and diesel. He said all of the expansion projects will use grid electricity, preferably green power to meet the energy requirements. "We have got a number of expansions down the line which are already approved. We will not have a captive power plant and will utilise power from the grid, preferably green power. This will help decarbonise some part of the manufacturing," he said. IOC's refinery expansion plans include raising the capacity of units at Panipat in Haryana and Barauni in Bihar and setting up a new unit near Chennai. "We are going to add 25 million tonnes of our refining capacity by the year 2023-24. We are 80.5 million tonnes now including CPCL, we are going to be 105 million tonnes," he said. Petroleum refining and marketing will continue to be IOC's core businesses with much higher petrochemicals integration. Also, gas will play a larger role and the firm will have a presence in electric mobility space through charging stations at petrol pumps and a planned battery manufacturing unit. Forecasts by various agencies see Indian fuel demand climbing to 400-450 million tonnes by 2040 as against 250 million tonnes now. Vaidya said IOC had already commissioned battery swapping stations across many cities. The firm already has installed 286 charging stations, including swapping stations, across the country, which will be raised to 3,000 EV charging stations in the next few years.

LIGO Scientific Collaboration discovers new source of Gravitational Waves



Scientists have for the first time detected gravitational waves ripples in the fabric of space-time produced by the collision of a neutron star and a black hole. This finding confirms that there are neutron star-black hole systems and will help answer many questions about the cosmos, from star formation to the expansion rate of our universe. Gravitational waves are produced when celestial objects collide and the ensuing energy creates ripples in the fabric of space-time which carry all the way to detectors on Earth. The reverberations from the two celestial objects were picked up using a global network of gravitational wave detectors, the most sensitive scientific instruments ever built, according to the researchers from UK's Strathclyde University. The university is part of the international network of scientists, the LIGO Scientific Collaboration. On January 5 this year, the Advanced LIGO detector in Louisiana, US and the Advanced Virgo detector in Italy, picked up the final throes of the death spiral between a neutron star - the collapsed core of a massive supergiant star - and a black hole as they circled ever closer and merged together. Just days later, a second signal was picked up by both detectors coming from the final orbits and smashing together of another neutron star and black hole pair.

The Loon Balloons to transmit the internet to people in Cuba

From December 2018, Cubans are getting Internet access on their phones through the state telecom monopoly but the Cuban government restricts independent media and censors what's available to Cubans online. However, according to the experts, it would not be that easy to set up a guerrilla Internet service for Cuba through balloons. It would need an unused band of spectrum, or radio frequencies, to transmit a connection to Cuba, and spectrum use is typically controlled by national governments.

CREATIVE CLUSTER

YEAR II

AUG 1 2021, SUNDAY

FORTNIGHTLY NEWSLETTER

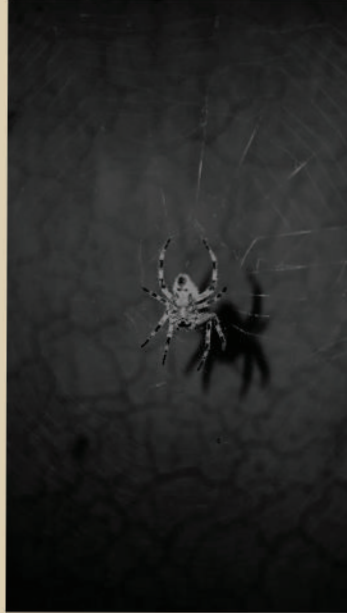
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वक्त एक सा समान नहीं होता...



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