



Message from the Principal

It gives me great pleasure to present the 2nd issue of FabTech SciConnect, released during the Techno-Fab 2K26 technical event for engineering students. This scientific news bulletin reflects the innovative spirit, research aptitude, and technical excellence demonstrated by our students and faculty. The publication serves as a platform to share emerging ideas, recent advancements, and academic achievements, fostering a culture of curiosity and continuous learning. I congratulate all contributors and the organizing team for their dedicated efforts in making these issues a success

Editorial

I Dr. Vidyarani Kshirsagar, Editor of this bulletin, is happy to present the second edition of Fabtech SciConnect on the occasion of Technifab 2K26. This issue shares updates and highlights of academic, technical, and co-curricular activities conducted at the institute and department levels. The bulletin aims to provide the latest information and innovations in Science and Technology and serves as a platform for informative and engaging content for students and faculty. Thank You..!

“The Role of Artificial Intelligence in Transforming the Recruitment Process”



Artificial Intelligence (AI) is rapidly changing the way organizations hire employees. Traditional recruitment methods were time-consuming and often depended on manual screening of resumes and subjective decision-making. With the introduction of AI, the recruitment process has become faster, smarter, and more data-driven. One of the most significant contributions of AI in recruitment is resume screening. AI-powered tools can scan thousands of resumes within seconds and shortlist candidates based on skills, qualifications, and experience. This reduces human effort and minimizes bias in the initial screening process. AI systems can also match job requirements with candidate profiles more accurately than manual methods. AI is also transforming the interview process.



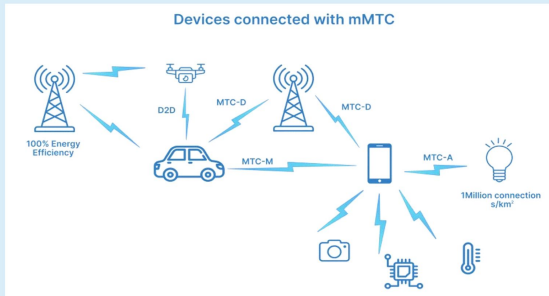
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Many companies now use AI-based chatbots and video interview tools to conduct preliminary interviews. These systems analyze responses, speech patterns, and even facial expressions to assess communication skills and confidence. Chatbots assist candidates by answering queries, scheduling interviews, and providing updates, thereby improving the candidate experience. Another important application of AI is predictive analytics. AI analyzes past hiring data to predict a candidate’s job performance and retention probability. This helps organizations make better hiring decisions and reduce employee turnover. AI tools also assist HR teams in identifying skill gaps and planning workforce requirements effectively. However, AI in recruitment should be used responsibly. Human judgment remains essential to evaluate creativity, emotional intelligence, and cultural fit. AI should support recruiters, not replace them. In conclusion, AI is transforming recruitment by making it more efficient, objective, and candidate-friendly. As technology advances, AI-powered recruitment systems will play a crucial role in building skilled and future-ready workforces.

Source: 1. IBM. (2023). AI in Human Resources Report
2. McKinsey & Company. (2023). The Future of Work with AI

- Contributed by: **Satyashil Yuvraj Kolekar**
Assistant Professor,
(Department of Basic Sciences and Humanities)



mMTC (Massive Machine-Type Communications) in 5G

5G technology has three key components: URLLC (Ultra-reliable low-latency communication), mMTC, and eMBB (Enhanced Mobile Broadband). Each element has unique applications in 5G. mMTC or Massive Machine-Type Communications enables efficient communication between 5G IoT (Internet of Things) devices. It is essential for IoT applications, smart homes, smart cities, and industries that need billions of devices connectivity. Statista states there will be more than 32.1 billion IoT devices in 2030. Even in 2033, the highest number 2.

In such conditions, mMTC will play a significant role in 5G's growth for supporting such a massive number of devices. Statista states there will be more than 32.1 billion IoT devices in 2030. Even in 2033, the highest number will be found in China, with around 8 billion consumer devices 2. In such conditions, mMTC will play a significant role in 5G's growth for supporting such a massive number of devices. 5G mMTC supports many IoT devices with minimal data and energy requirements. Before 5G, earlier generations of mobile networks were primarily focused on human-to-human communication. However, the scenario has changed now with the growing demand for IoT applications. It enabled the need for a specialized service category that could handle many low-bandwidth, low-power devices. mMTC has solved this problem. mMTC contrasts with eMBB, which emphasizes high-speed data transfer, and URLLC, which prioritizes low latency and high reliability. This ability to support up to one million devices per square kilometer is a defining feature of mMTC.

Source: <https://nybsys.com/what-is-mmtc-in-5g/>

-Contributed by : Prof.Suvarna Dadaso Pujari (Department of EN&TC)

"Stomata In-Sight" Device Enables Real-Time Monitoring of Plant

The breakthrough of the Stomata In-Sight device represents a major advancement in plant science and agriculture. This palm-sized, innovative tool allows scientists to observe stomatal pores on plant leaves—in real time as they regulate the exchange of carbon dioxide, oxygen, and water vapor. Unlike traditional techniques that depend on indirect measurements or damage the plant during analysis, this device provides live, high-resolution visualization without causing harm. It enables continuous monitoring under natural conditions, giving researchers accurate insights into how plants "breathe." Key findings show that the device offers high-definition observation of gas exchange, helps track water vapor release for better understanding of drought resistance, and supports bioengineering efforts to develop crops that require less water and can withstand climate change. This technology is highly significant as rising global temperatures and water scarcity threaten agriculture and food security. By improving our understanding of plant responses to environmental stress, the device can help farmers adopt efficient irrigation practices and promote the cultivation of resilient crops. Ultimately, it contributes to sustainable agriculture by reducing water wastage and enhancing crop productivity.

Source: *Live Science & NDTV Science*

-Contributed by : Prof. Ganesh Misal (IQAC –Co-ordinator)

Smart Cities: Integrating IoT with Civil Infrastructure

The concept of a "Smart City" is no longer just a futuristic vision; it is the necessary evolution of modern Civil Engineering. At its core, a Smart City uses the Internet of Things (IoT)—a network of physical objects embedded with sensors and software—to collect data and manage assets more efficiently. For Civil Engineers, this integration transforms static infrastructure into dynamic, responsive systems. In recent years, we have witnessed numerous alarming cases of structural failure that could have been avoided. We have seen industrial sheds collapse and banner-holding steel structures fail due to wind load or corrosion.

Separately, we also saw the tragic failure of the bridge at the Kolhapur river. These different incidents highlight a common problem: we often don't know a structure is weak until it breaks. This is where IoT can save lives. By installing sensors on these structures to monitor vibrations, load, and tilting in real-time, we can detect instability early. If the data shows abnormal readings whether on a banner frame or a river bridge—the system can alert authorities immediately. Proper action can then be taken to repair the structure or stop traffic before an accident happens. Furthermore, IoT is revolutionizing urban water management—an area of particular importance to our hydraulics discipline. Smart water grids use pressure and flow sensors to detect leaks instantaneously, drastically reducing water loss. At Fabtech, we teach our students that data is now as important as cement. Civil Engineering is no longer just about building structures that stand; it is about creating systems that "speak." By mastering these smart technologies, our future engineers will design infrastructure that detects danger early and actively protects human life.

Source: *Synthesized from recent trends in Structural Health Monitoring and Smart City Infrastructure reports.*

-Contributed by : Prof. Sandip Bhusaheb Nirmal, Assistant Professor (Civil Engineering Department)



Ruthenium Prices Hit Record High as AI Boom Squeezes Supply



Ruthenium, a rare metal that belongs to the platinum-group metals (PGMs), has recently reached record-high prices due to rising demand and limited global supply. According to a report published on the Reuters platform by journalist Anushree Ashish Mukherjee on March 16, 2026, the rapid growth of artificial intelligence (AI) technologies is one of the main reasons behind the sudden increase in ruthenium prices. Although ruthenium is considered a minor metal, it plays a very important role in modern electronic systems and advanced technological infrastructure. Ruthenium is commonly used in electronics, semiconductor manufacturing, and chemical processing industries. One of its most significant uses is in the production of hard disk drives, where it is applied in the magnetic layers that store digital data. As artificial intelligence continues to expand across industries such as cloud computing, machine learning, data analytics, and automation, the demand for large-scale data storage has increased rapidly. Companies around the world are building more data centers to support AI systems, which process and store enormous amounts of information every day. This expansion of data centers has directly increased the demand for materials like ruthenium. Market data from LSEG, referencing Johnson Matthey's benchmark prices, shows that ruthenium was priced at around \$1,750 per ounce on March 13, 2026. This represents a dramatic increase compared to approximately \$560 per ounce a year earlier. Analysts believe that investors are beginning to see ruthenium as a strategic metal connected to the growth of the artificial intelligence industry. Because of this perception, financial interest in the metal has also increased. Despite the rising demand, the supply of ruthenium remains structurally limited.

Source: www.reuters.com

-Contributed by: Vivek Sunil Shivankar (Student of AI&DS Department, 3rd Year)

Research & Development Highlights-Quarter1

Research & Publications:

- Ms. Jyoti S. Shinde has published her paper titled "SqueezeNet-ImpLinknet Architecture for Crowded Anomaly Detection with Improved R-CNN Based Segmentation" in the journal Computer Animation and Virtual Worlds.
- Dr. Somnath B. Thigale has published his paper titled "Integration of Maximum A Posteriori Speech Enhancement and Discrete Wavelet Transform-Based Voice Activity Detection for Robust Speech Processing" in the journal Applied Research and Technology.
- Dr. Aashish Ainath Joshi has published his paper titled "Performance Analysis of Power Factor Correction Capacitors in Educational Institutes" in the journal Engineering, Technology & Applied Research Journal.
- Dr. Sahadev Maruti Shinde has published his paper titled "SkinAI: Affordable and Accessible Skin Cancer Diagnosis with Deep Learning and HAM10000" in an IEEE Conference.
- Dr. Sahadev Maruti Shinde has also published his paper titled "Sustainable Environment Monitoring through Machine Learning-Enabled Cloud Detection and Weather Forecasting" in the journal Nigerian Journal of Technology.

A total of 4 patents have been filed, out of which 2 patents are currently under examination. Additionally, 1 patent has been successfully published. A total of 1 copyright and 1 trademark have been filed for the ICBTSD Logo. The copyright application is currently under re-scrutiny, while the trademark application is under examination

FABTECH TECHNICAL CAMPUS
College of Engineering & Research, Sangola
An Autonomous Institute

Approved by AICTE New Delhi, DTE Maharashtra, Affiliated to DBATU Lonere Accredited by NAAC 'A' Grade

Techno-Fab 2K26

25th March 2026

Participate & Win Exciting prizes

Institute level

- ▶ Drone Zone (Only for 1-200 Per Person)
- ▶ Project Competition (Startup Idea Pitch)

Civil

- ▶ Bridge Load Testing Competition

CSE and AI&DS

- ▶ AI Prompt Engineering Challenge
- ▶ UI/UX Design - "Design Sprint: Revolutionize User Experience"

Mechanical

- ▶ CAD Modelling War

ENTC

- ▶ Line Follower Robot

Electrical

- ▶ GreenSpark- Innovation in Renewable Energy

Entry Fee
₹ 50/- Per Participant

Scan for Payment

Scan for Registration

Note:

- ▶ Minimum entries for each event should be 10 to conduct competition.
- ▶ Each participant will get the certificate.
- ▶ Prizes statements will be made available to the respective group of students.
- ▶ Registration fee includes only participation fee.
- ▶ Accommodation can be made available on request within college premises.
- ▶ Food facilities will be available on chargeable basis.
- ▶ Transportation facility will be made available from Sangola and Panharpur.

FACULTY	AI&DS	CIVIL	CSE	ENTC	MECHANICAL	Electrical
	9834101499 Prof. V. S. Meena	8329842779 Prof. G. W. Dikshesh	9860513229 Prof. S. D. Chitambar	9800753875 Prof. S. P. Pujari	9422432062 Prof. J. P. Pawar	7443059860 Prof. J. D. Sogade
STUDENT	9145721425 Mr. Shreshth Thakre	8669037164 Mr. Kishan Arale	8275726451 Mr. Pratikshesh Potdar	9021937312 Mr. Ganesh Bhat	7972823824 Mr. Akshay Kadam	8308064603 Mr. Sahaj Thakare
	7387344913 Miss. Komal Kulkarni	8265019205 Mr. Pratikshesh Thakre	8104143979 Mr. Pratikshesh Thakare	8329409137 Mr. Pratikshesh Thakare	9022143749 Mr. Pratikshesh Thakare	9373055380 Mr. Pratikshesh Thakare
	9028206714 Miss. Komal Kulkarni	9766291362 Mr. Pratikshesh Thakare	8454989871 Mr. Pratikshesh Thakare	9022975639 Mr. Pratikshesh Thakare	9975909442 Mr. Pratikshesh Thakare	9146260713 Mr. Pratikshesh Thakare

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Dr. S. B. Thigale
Dean R&D

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Dean Academics
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Dr. R. B. Shendge
Principal
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Estates Director

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Dr. A. B. Rupnar
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Shri. B. A. Rupnar
Vice President

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KURUKSHETRA 2K26

24th Hrs

Register upto 15th March

Event Info

- ▶ Event Duration : Tuesday and Wednesday
- ▶ Registration Fee : Round-1 :- Rs. 100/- per team Round-2 :- Rs. 1000/- per team
- ▶ Team Size : 2 to 4 Members
- ▶ All registered participants will get the certificate

PRIZES

- ▶ Prize Pool **Rs. 50,000/-**
- ▶ 1st Prize: Rs. 20,000
- ▶ 2nd Prize: Rs. 10,000

▶ Best Innovator team award (₹.5000/-) (5 domains)
▶ Best women empowerment team award (₹.5000/-)

Register upto 15th March

Domain

- ▶ Agri-tech
- ▶ AI and Intelligent Automation
- ▶ Core Engineering and Infrastructure
- ▶ Robotics & Drones
- ▶ IoT and Embedded Automation

Rules

- ▶ During the period of competition, at least 1 member should present at their project table.
- ▶ At the final evaluation, your prototype should be in the working phase.
- ▶ In case the completion of the competition, the team can not leave the college campus.
- ▶ Fire-kill projects are prohibited.
- ▶ Final winners will be decided by jury.

Contact Us :

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Dean R&D

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Techno-Fab 2K26

Kurukshetra 2K26 Hackathon