



# TIREZIA

Volume 15, Issue 1

The Editorial Board  
-Beckoning Creati'wit'y

October Issue

*Perpetual Panorama*

## CONTENTS

Message from The Editorial Board	2
Message from Faculty Advisor	3
<b>Tête-à-tête</b>	4
Campus Buzz	6
Industry 4.0	8
Invisible Invaders	10
TECH inSIGHTS	12
Quotiloquy	13
प्रारब्ध	14



#National Unity Day

**Interviewing**  
Mr. Rajesh Kumar  
Director, Wishmed Pty. Ltd.



# Message From The Editorial Board

As the year escalates towards its zenith, a serene sense of renewal takes root and an unexpected imperturbation in grandeur is unveiled. Each dawn emerges as a riddle, a captivating quandary inviting relentless unravelling as we step into the tenth month of the year. October, a magnificent canvas of nature's artistry and cultural opulence, signals the transition from the searing caress of summer to the gentle embrace of the changing epochs. It is marked by a multitude of festive merriment that pays homage to our heritage. The grand parades and ceremonial submergence of sacred effigies that take place during Durga Puja create an ambience filled with an intuition of steadfast reverence evoking a milieu of unity and unwavering devotion.

Fresh off the presses, within the sphere of space exploration, India reached a momentous landmark with the successful launch of CHANDRAYAAN 3 on July 14, 2023, and subsequent landing on the South pole of the Moon on August 23, 2023, making India the first nation to reach the milestone. Amid the sports arena, Neeraj Chopra's historic gold medal win at the World Athletics Championships 2023 at Budapest made him the first Indian athlete to achieve such a remarkable feat, making the nation exuberant over this victory. On August 15, 2023, India celebrated its 77<sup>th</sup> Independence Day, marking another year of freedom and progress while on September 2, 2023, Aditya L-1 was launched into space for the study of the solar atmosphere, enhancing our comprehension of the Universe. In addition, India propitiously conducted G-20 Summit in New Delhi from September 9, 2023, to September 10, 2023, and is set to host the summit spanning 60 cities of India in all 28 states and 8 union territories by November 2023, showcasing country's global significance. India also celebrated National Unity Day on October 31, 2023, a day that resonates poignant reminder of the strength that emerges from unity, weaving yet another strand of India's rich and diverse narrative.

Cultural Synod organized its induction drive on September 14, 2023. Subsequently, on September 16, 2023, various competitions in dance, music, painting and poetry were organised under Diksha Mahotsav by the Cultural Sub-Council. NSS, MMMUT successfully completed its induction drive on September 17, 2023. The University's 8<sup>th</sup> Convocation ceremony was conducted with grandeur on September 19, 2023, marking an important milestone for the graduating students and the institution as a whole. The University organized an orientation program for the incoming students of the 2023-27 cohort to acquaint them with various societies, clubs, and the academic diversity.

As the venerated month of October unfurls its tapestry, the firmament pliable yet unyielding bestows upon us an exquisite and ambrosial essence—a salve for the spirit to imbibe. The zephyrs of this transitional period between annual equinoxes weave an ambient aura, of metamorphosis and progression that has graced our lives, guiding us toward a more enlivened existence. **The Editorial Board** with fervent ardour, entreats students to seize this interlude, a respite from the quotidian monotony, and pledge brevities unto themselves, reinvigorating their souls through an authentic and earnest embrace of their innermost selves. With these reflections, we unveil the October edition of **Tiresia**, extending our warmest wishes for the abundance and auspiciousness that October primed to confer.

*Bienvenidos!*

## Our Team

**Final Year Members:** Animesh Kumar Singh, Anoop Singh, Bhuwan Awasthi, Dilip Kumar Singh, Ishita Srivastava, Kaushki Tewari, Mohammad Ifham, Sankalp Sharma, Shivam Srivastava, Shreyashi Rai, Unnati Verma

**Third Year Members:** Abhijeet Yadav, Aditya Raj, Akanksha Pal, Akshat Saxena, Awantika Krishna, Harshita Mishra, Khwaab Jaiswal, Lavanya Gupta, Mayank Jaiswal, Nadeem Ahmed Warsi, Nikhil Tiwari, Saanvi Gupta, Shreyas Kumar, Swati Tiwari

**Second Year Members:** Aadrika Barnwal, Aastha Singh, Aashi Awasthi, Harshit Pandey, Jayant Singh, Jyoti Singh, Nandini Mishra, Prisha Agrawal, Rishika Agrawal, Shivam Pal, Shivam Rai, Sneha Verma, Vishal Kotak, Vishwadeep Singh, Vivek Mani Tripathy, Yash Pratap Singh

# MESSAGE FROM

## Faculty Advisor



Dr. Abhijit Mishra  
Faculty Advisor

Madan Mohan  
Malaviya University  
of Technology,  
Gorakhpur - 273010



[www.mmmut.ac.in](http://www.mmmut.ac.in)  
[www.mmmut.ac.in/  
ViewNewsletter.aspx](http://www.mmmut.ac.in/ViewNewsletter.aspx)

I am elated to embrace this eminent platform to convey and extend this message for the present issuance of **Tiresia**. The preceding months have borne witness to a plethora of significant events. The University commemorated its Eighth Convocation on September 19, 2023, bestowing degrees upon a distinguished cohort of 1519 accomplished graduates. The ceremony was held under the guidance of the Hon'ble Chancellor and Governor of Uttar Pradesh, her excellency Smt. Anandiben Patel, while Shri Rajesh Rai (Alumnus 1992, ECE) and the Chairman & Managing Director of ITI Ltd. embodied as the Chief Guest. The ceremony was further graced by the Guest of Honour Shri Ashish Patel, the Hon'ble Minister of Technical Education for the Government of Uttar Pradesh.

The Governor also inaugurated the venerated publications issued by **The Editorial Board** namely 'Carvings' and 'Pravah'. The University was privileged to extend its hospitality to the Hon'ble Chief Minister of Uttar Pradesh, Shri Yogi Adityanath, who graced the campus to officiate the inaugural of the newly constructed State-of-the-Art Administrative Building with funding support from the Government. Under a MOU signed between Uttar Pradesh Police Gorakhpur Zone and the University, they shall offer expert technical assistance to law enforcement in the realm of cyber security. The Induction Programme for newly admitted students functioned as a seminal

initiation platform, expediting their acclimation to the educational institution and its multifarious resources, proffering nuanced discernments. A delegation comprising faculty members and officials engaged in a two days' workshop 'Shiksha Manthan', orchestrated by CSJM University, Kanpur, aimed at elevating the state position of the University on both domestic and global academic ranking systems. In an unprecedented achievement at MMMUT, a student of Computer Science and Engineering branch, secured a groundbreaking offer of Rs.52LakhPerAnnumfromGoogle, surpassing the previous record. Another feather in MMMUT's cap was recognition of two of its faculty members namely Prof. Rakesh Kumar, Computer Science & Engineering Department and Prof. R. K. Yadav, Chemistry Department being listed in World's top 2% scientists of their domains in a list published by Stanford University for the year 2023. The University established a Section 8, Charitable Company called the "MMMUT Foundation" to facilitate and promote its extension work in science and technology.

I extend my sincere felicitations to **The Editorial Board** team for their diligent endeavour in producing a splendid edition of **Tiresia**, encompassing a diverse spectrum of matters and perspectives.

With best regards  
Dr. Abhijit Mishra  
Faculty Advisor  
**The Editorial Board**  
MMMUT

# Tête-à-tête

*A talk with Mr. Rajesh Kumar*

Mr. Rajesh Kumar, a pioneering figurehead in the field of medical equipment, has been nothing short of exceptional. After earning his degree in Electronics and Communication Engineering from MMMEC, Gorakhpur in 1996, he started off as a service engineer before founding Wishmed and DiaGuru. With a career distinguished by innovation and commitment to enhancing medical services, he has played a pivotal role in transforming healthcare delivery and medical procurements. **The Editorial Board** had an honour to delve into his wealth of experience and gain valuable insights into his remarkable journey. Here we present a noteworthy snippet from the interview.



**Q How do you feel after visiting the college after so many years?**

**A** With all the great memories of this campus flooding back to me, I fondly recall my time spent in this college. It is an intricate blend of nostalgia, wonder, introspection, and possibly a hint of uncertainty and anxiety to return to the college after such a long absence. It is a strong encounter that elicits a variety of emotions and memories. There is a sense of wonder as I observe how the campus has evolved over the years. Not to forget, it is a voyage through the past, a tribute to our personal evolution, and a revival of cherished memories that etch themselves permanently into our hearts.

**Q Would you like to share some joyful memories from your college life that makes you feel nostalgic?**

**A** Many memorable events occurred during my time at Malaviya. One of them was, when we were taking the train to college, we learnt that there was a curfew nearby so no one was permitted to roam outside. We reached Gorakhpur, but did not have enough money to return home, as in mean time due to the curfew, the college had announced holidays, and no one else showed up when we arrived to the hostel, except a few of us. In those days, we did not have cell phones, so we went for three days untouched from the outside world, which was a crazy experience. Another memorable thing was that, amid all the hardships, the chaiwallah's cry at 11 O'clock at night was the happiest time during the exam season, because it was the only time, we had peddlers in the hostel wings. We would quickly disrupt fellow students with loud shouts, open windows, and

dancing, after finishing our own studies. All this was emotional and unforgettable, as we can only reminisce about our lovely time at Malaviya.

**Q What was your motivation behind joining the NCC? Were you interested in the armed forces?**

**A** I decided to join the NCC as a means to cultivate self-discipline. The NCC experience was enriched by my participation in two camps, and these also involved gruelling cycling expeditions to Bihar or Nepal for three to four days straight. Following these demanding rides, we engaged in intense parade practices, and in mean time, waiting for a comforting cup of chai at three in the morning became a cherished ritual. All of it was always a thrilling and extremely different experience.

**Q What was the inducement for such a drastic change from an engineering background to medicine?**

**A** The medical industry is analogous to engineering. I chose to major in electronics, since electronics are used everywhere and every part of medical equipment contains some electronics component. I advise anyone who is interested in electronics to seek career in informatics or medical device design. I think my experience in engineering and knowledge of medicine gives me a distinctive viewpoint on how to approach challenges in healthcare.

**Q What was the role of this college in shaping your current position?**

**A** My current position has been significantly shaped by my time at the college. During those



*Don't fret over missed opportunities, if you give your best effort in all endeavours, success will follow you wherever you go.*

years, I developed logical skills and cultivated confidence in myself. Faced with challenging scenarios, I embraced the principle of dedicating significant effort to finding solutions. This formative solid foundation was made possible only through the challenging academic program and determined faculty. In essence, the college provided me with the resources and an effective organizational framework necessary for my ongoing journey towards success.

**Q Sir, could you please share a few details about your startup?**

**A** I travelled from India via Libya, to Canada, before arriving in Australia on November 9, 2009. I had in my mind that I can manage a team, run a business, and make sales. So, in just 5 months, I started this company, Wishmed, in March 2010, doing everything by myself in my garage with an office in one of the bedrooms of my house. The initial 5-6 months were stressful and strenuous as I was the only one who completed every task. After 3 and half years, we had a warehouse and were a known name in the market. We were fortunate that our team thrived and the crew expanded rapidly. Even recently, we had a team of 30, but during the COVID period, it shrank to 20, because fewer individuals were coming in because of the pandemic. Now, we have expanded our business to India, initially importing European goods and distributing them to Australia and the Pacific Islands. As for now, we are working with 8-9 Indian companies in various metropolises.

We generate substantial revenue for our Indian partners as well, enabling them to pay wages and contribute to the Indian government

through taxes. In essence, we foster strong global connections with India. Now, I have started my own brand DiaGuru, which is all set to reach the Middle East, Europe, and beyond. Next year, we shall be launching our global initiatives and are looking ahead to collaborate with an Italian company. One valuable lesson I picked up from this place is the importance of always maintaining a positive outlook.

**Q What were the challenges you faced when you moved from India to Australia?**

**A** The strain we faced came from both the ends, hiring the working individuals in Australia and the financial concerns. I was confident up to the brim that the money I am investing would result in a great success anyhow. Therefore, we had optimism, whatever pressure came in, we handled it and continued to work diligently. Additionally, language also posed another barrier. Although they spoke English, their dialect and accent was quite different.

**Q What advice would you like to give to the budding Malaviyans for their future?**

**A** Whether a human or an animal, we all constantly face challenges. We are concerned about it, but it is important to acknowledge that by maintaining a positive, focussed, and energetic approach in our chosen field, success is inevitable. So, do not think that your opportunities are shrinking. In fact, being the best is not even a requirement. Everyone possesses assets and limitations unique to them. Even if you are not good at one thing, it may just mean that you hold capability to mastersome other thing. I would also like to mention here that, sales will definately be an important skill if you want to be at the top of the world.



Mr. Rajesh Kumar with his professional associates.

# CAMPUS

**MAY 26** The Editorial Board successfully conducted the Annual Photoshoot for Final year students under the guidance of Hon'ble Vice-Chancellor and faculty members of respective departments.

**JUN 20** NSS, MMMUT successfully organised a Plantation Drive DARPAN from June 20, 2023 to July 20, 2023.

**JUN 21** Computer Society of Software Engineers (CSSE), MMMUT facilitated two-week PYTHON programming classes from June 22, 2023 to July 5, 2023 aiming to help students remain steadfast in pursuit of their technical ambitions.

**JUN 21** NSS, MMMUT celebrated the 9<sup>th</sup> International Yoga Day on June 21, 2023 at Shaheed Smarak, Chauri Chaura by organising events like Yog Shivar, debate competitions, etc. to stimulate the criticality of Yoga in daily life.

**JUL 16** Computer Society of Software Engineers (CSSE), MMMUT efficaciously held its Python Quiz providing participants with a platform to showcase their knowledge and compete with their fellow enthusiasts.

**AUG 10** Computer Society of Software Engineers (CSSE), MMMUT conducted Code Bugger Coding Contest as a result of a collaboration with Coding Ninjas on August 10, 2023 to bestow opportunities for all budding programmers.

**SEP 12** NSS, MMMUT successfully completed its Induction Drive from September 12, 2023 to September 17, 2023.

**SEP 14** Cultural Synod successfully completed its Induction Drive from September 14, 2023 to September 18, 2023.

**SEP 15** The University unveiled VAAVE, an alumni portal, to revitalize the ties with its alumni, fostering collaboration, engagement and former relations.

**SEP 16** Codechef MMMUT Chapter organised a live webinar on Competitive Programming, hosted by Abhinav Awasthi, an ICPC regionalist from HBTU, aimed to unravel the intricacies of Competitive Programming, and problem-solving strategies.

# BUZZ

**SEP 16** Under the guidance of the Hon'ble Governor, the **Cultural Sub-Council** successfully held the **Diksha Mahotsav** which featured Dance, Music, Painting, and Poetry competition from **September 16, 2023 to September 19, 2023.**

**SEP 19** Under the guidance of Hon'ble Governor and Her Excellency Smt. Anandiben Patel, the University organized the **8th Convocation Ceremony** for 2023 batch pass out students from all the courses on **September 19, 2023.**

**SEP 16** **Sports Sub-Council, MMMUT** successfully organised its **Induction Drive** from **September 16, 2023 to September 27, 2023.**

**SEP 19** **E-Cell, MMMUT,** hosted **Convocation Talk 2023,** on **September 19, 2023** in the University premises.

**SEP 20** **Sports Sub-Council, MMMUT** organized the **Malaviyan Premier League (MPL)** tournament 2023-24, from **September 20, 2023 to September 24, 2023** at the Shaheed Bandhu Singh Stadium.

**SEP 22** The University commenced the **Orientation cum Induction programme** for newly admitted students of batch 2023-27 from **September 22, 2023 to October 5, 2023.**

**SEP 24** **Association of Civil Engineers (ACE)** successfully completed its **Induction Drive** from **September 22, 2023 to September 24, 2023.**

**SEP 26** The new **Administrative Block** of the University was inaugurated on **September 26, 2023** by the Chief Minister of Uttar Pradesh, **Shri Yogi Adityanath** with **Shri Ravi Kishan** as the esteemed chief guest.

**SEP 27** **Sports Sub-Council, MMMUT** successfully conducted the **FUTSAL tournament,** **September 27, 2023 to September 29, 2023** by the Football team of the University at the Shaheed Bandhu Singh Stadium.

**SEP 29** **IICHe Student Chapter, MMMUT** successfully presented an online expert talk by esteemed guest **Er. Puru Pandit** (R&D engineer at MKS Atotech) on the topic "Introduction to Electroplating Industry".



# Industry 4.0

“ *In the Eden of industrial renaissance, automation is the waltz.* ”

In today's rapidly evolving technological landscape, smart manufacturing is emerging as a game-changer across industries. This transformative approach to production processes, driven by cutting-edge technologies, data analytics, and connectivity, is reshaping the manufacturing sector. Smart manufacturing is not just about machines; it's about optimizing efficiency, reducing costs, enhancing product quality, and promoting sustainability.

Manufacturing has come a long way since the days of manual labor and rudimentary machines. Over time, various industrial revolutions have fundamentally altered the manufacturing landscape. The first industrial revolution, marked by the steam engine and mechanization, gave way to mass production in the second industrial revolution. The third industrial revolution introduced automation and computers, ushering in the era of digital manufacturing. Now, we find ourselves at the cusp of the fourth industrial revolution, often referred to

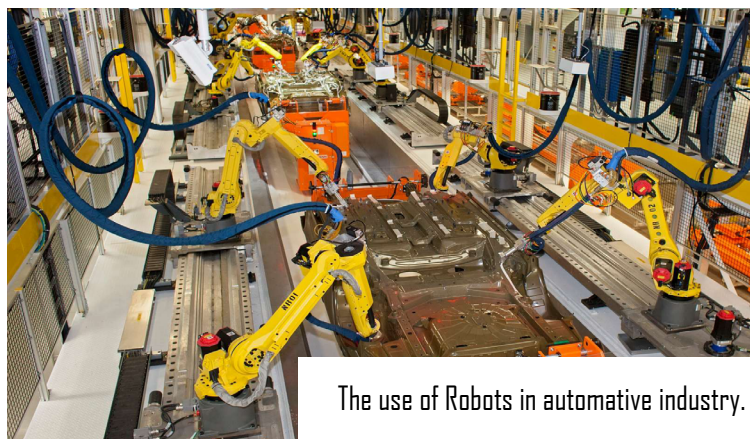
as Industry 4.0, where smart manufacturing takes center stage. Industry 4.0 is characterized by the integration of cyber-physical systems, the Internet of Things (IoT), artificial intelligence (AI), big data analytics, and more. These technologies transform traditional factories into intelligent, data-driven, and highly efficient production hubs. Internet of Things sensors and devices are the backbone of smart manufacturing. These interconnected sensors collect real-time data from various manufacturing equipments and transmit it to a central system. This enables manufacturers to monitor the performance of machines, track inventory levels, and optimize production processes in real-time. The enormous amount of data generated by IoT devices is of little use without effective analysis. Data analytics tools process this data to identify patterns, trends, and anomalies. Industries, with the help of these technologies can improve operational efficiency, quality control, and supply chain management. AI and machine learning algorithms play a crucial role in predictive maintenance, quality control, and



prevent costly breakdowns and downtime. Automation and Robotics: Smart manufacturing heavily relies on automation and robotics to perform repetitive tasks with precision and speed. Robots are increasingly being used for tasks such as assembly, welding, and material handling, improving both speed and accuracy. Additive Manufacturing i.e., 3D printing is revolutionizing the manufacturing of prototypes and small production runs. It allows for rapid design iterations, reducing time-to-market and enabling greater customization.

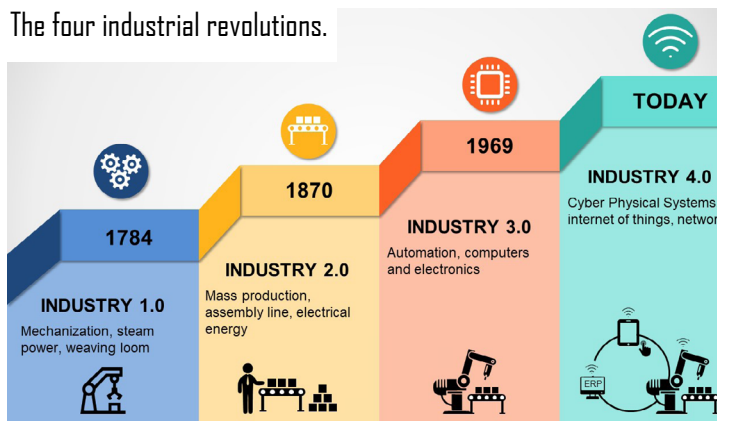
One of the most significant benefits of smart manufacturing is the dramatic improvement in operational efficiency. Real-time data and analytics enable manufacturers to optimize processes, reduce waste, and increase productivity. Through various operations such as downtime minimization, optimal energy usage and increased information sharing, smart manufacturing can lead to substantial cost savings. Predictive maintenance, for instance, helps avoid costly breakdowns and repairs. With the ability to monitor production processes closely and make real-time adjustments, manufacturers can consistently produce high-quality products. Additive manufacturing and digital design tools enable rapid prototyping and product development. This acceleration of the product development cycle can give companies a competitive edge.

In the automotive industry, smart manufacturing is used for predictive maintenance, quality control, and optimizing supply chains. The use of robots in assembly lines has also increased precision and efficiency. Pharmaceutical companies benefit from smart manufacturing by ensuring the quality and consistency of drug production. Automation plays a critical role in reducing human error and enhancing safety. One such example is the aerospace industry that relies on smart manufacturing for the production of complex, high-precision components. Another example that even impacts the smallest of us is the use of smart manufacturing technologies to help maintain food safety and ensure quality.



The use of Robots in automotive industry.

#### The four industrial revolutions.



Electronics manufacturers use smart manufacturing to improve the efficiency of circuit board assembly and testing. AI-driven quality control ensures that electronic devices meet stringent standards.

While smart manufacturing offers tremendous advantages, it also presents challenges that must be addressed: With the proliferation of IoT devices and data sharing, ensuring the security of sensitive manufacturing data is paramount. Cybersecurity measures are essential to protect against data breaches and cyberattacks. The transition to smart manufacturing requires a skilled workforce capable of operating and maintaining advanced technologies. Upskilling and training programs are necessary to bridge this gap. Many companies already have existing manufacturing systems in place. Integrating new technologies with legacy systems can be complex and costly. Implementing smart manufacturing technologies can be pretty expensive, particularly for medium and small scale industries. ROI calculations must consider both the short-term costs and long-term benefits.

Smart manufacturing is reshaping industries and revolutionizing traditional production processes. With IoT, big data analytics, AI, automation, and 3D printing at its core, smart manufacturing offers enhanced efficiency, reduced costs, improved product quality, and a path to sustainability. Its applications span diverse sectors, from automotive and pharmaceuticals to electronics and aerospace. However, the transition to smart manufacturing is not without challenges. Data security, skill gaps, integration complexities, implementation costs, and regulatory compliance must all be carefully considered and managed. As we continue to advance into the era of Industry 4.0, smart manufacturing will undoubtedly play a pivotal role in driving innovation, competitiveness, and sustainable growth across industries. Companies that embrace this transformation are poised to thrive in the evolving manufacturing landscape.



# Invisible Invaders



*The biggest dangers are not those we can see, but those that are invisible, silent, and deadly.*

The ubiquity of microplastics including nanosized plastics in the global biosphere raises increasing concerns about their implications for human health. Microplastic in the environment is an emerging contaminant that has generated intense public concern. Recent evidences indicates that humans constantly inhale and ingest microplastics; however, whether these contaminants pose a substantial risk to human health is far from understood. The lack of crucial data on exposure and hazard represents key knowledge gaps that need to be addressed to move forward.

They are created by the weathering and breakdown of plastic objects, car tires, clothing, paint coatings, and leakage of preproduction pellets and powders. They may also be intentionally added to daily life products (e.g., cosmetics and abrasive cleaners). They represent a highly diverse class of contaminants spanning five orders of magnitude in size, are of various shapes (e.g., spheres, fragments,

fibers), and have a complex composition, including polymeric materials and mixtures of chemicals. They may enter the human body through both inhalation and ingestion, potentially causing health effects. A parallel can be drawn with particulate air pollution: Small particles (<2.5 mm), such as those from diesel exhaust, are capable of crossing cell membranes and triggering oxidative stress and inflammation, and have been linked with increased risk of death from cardiovascular and respiratory diseases or lung cancer. This parallel provides ample incentive to gather more information on the potential risk of microplastic particles.

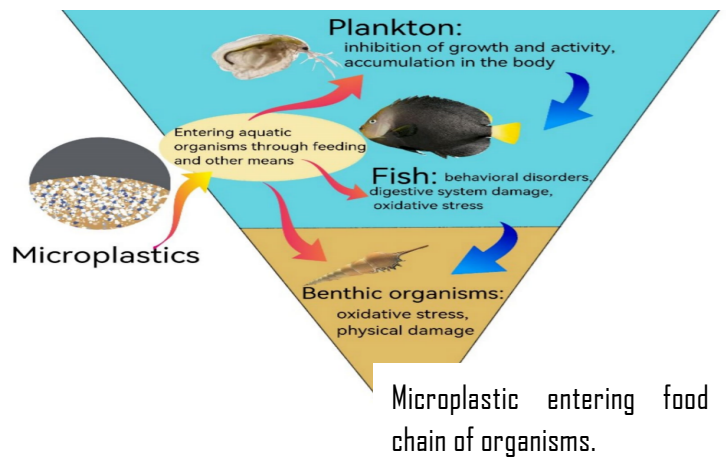
Once in contact with epithelial linings in the lung or intestine, or after being internalized microplastics may cause physical, chemical, and microbiological toxicity, which could also act cumulatively. Several in vitro (i.e., human cell culture) and in vivo rodent studies indicate the potential of inhaled or ingested microplastics to cause a variety of biological effects,

including physical toxicity, leading to oxidative stress, secretion of cytokines, cellular damage, inflammatory and immune reactions, and DNA damage, as well as neurotoxic and metabolic effects. A better understanding of the ability of microplastics to cross the epithelial barriers of the airway, gastrointestinal tract, and skin is needed to reduce the current uncertainty in the human risk assessment of microplastics. Limited *in vitro* and *in vivo* data suggest that only small fractions of administered microplastics are capable of crossing epithelial barriers of lungs and intestines, with specific uptake profiles and generally increasing uptake efficiency with decreasing particle size. This low proportion of particle uptake is not necessarily unimportant when considering life-long exposure and because of possible accumulation in tissues and organs. Studies with human cells in culture, and in rodents and aquatic species indicate translocation of microplastics.

To get the microplastic problem under control, the world has to take three primary steps, those who study the issue say. In the short-term society needs to significantly curtail unnecessary single-use plastic items such as water bottles, plastic shopping bags, straws, and utensils. In the medium-term governments need to strengthen garbage collection and recycling systems to prevent waste from leaking into the environment between the trash can and the landfill, and to improve recycling rates. In the long run, scientists need to devise ways to break plastic down into its most basic units, which can be rebuilt into new plastics or other materials. A growing number of materials scientists envision to reshape our relationship with all plastics is to move from physically recycling plastics by grinding them up to chemically dismantling them to weed out all the impurities that taint recycled plastic. Such a method would take a PET bottle, for example, and break it down into its most basic



Microplastic invisibly mixed in soil content.



molecules, separating added chemicals to provide the building blocks to remake virgin polymers. The lack of comprehensive data hinders evaluating human health risks from microplastic exposure, but ongoing research may advance our understanding. Anticipated technological advancements in particle analysis, particularly for nano-sized microplastics in human fluids and tissues, are expected in the coming years.

Every day, humans are exposed to a wide range of natural and manufactured particles, with particulate air pollution recognized as one of the world's leading environmental risk factors for disease. It is crucial to understand the role of microplastics and their contribution to total ambient particle exposure to evaluate their potential contribution to global disease burdens. Owing to their persistence, wide size range, and complex nature, microplastics may exhibit distinct particle properties with a different and broader toxicity profile compared to those of other ambient particles. To date, pressing microplastic-related health issues such as internal exposure; ADME processes, including the effect of the eco- or bio corona; interaction with the immune system; whether nanosized plastics can affect the placenta, foetus, and brain; and how environmental microplastics differ from other ambient natural and engineered nanoparticles are largely unexplored. Pioneering interdisciplinary research programs (such as Microplastics & Health in the Netherlands and the European Union Horizon 2020 research program) are beginning to resolve some of these issues, which are fundamental to innovation, evidence-based policy-making, and strategies to improve risk management. Multidisciplinary research efforts, involving scientists from environmental and medical sectors as well as polymer scientists, are needed to tackle this potential health hazard. Comprehensive risk assessment is still far away, but the major research gaps should be addressed now to support timely decision-making on health policies and mitigation strategies.

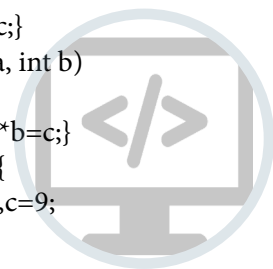
# inSights

TECH

Mail your answers at  
[literaryedb@mmmut.ac.in](mailto:literaryedb@mmmut.ac.in)

The output of following C program is :

```
void f1(int a, int b)
{ int c;
c=a;a=b;b=c;}
void f2(int a, int b)
{ int c;
c=*a;*a=*b;*b=c;}
int main (){
int a=7,b=8,c=9;
f1(a,b);
f2(&a,&b);
printf("%d",c-a-b);
}
```



COMPUTER SCIENCE  
AND ENGINEERING

A 0.3 kg mass is suspended from a wire of negligible mass. The length of the wire is 3 m and its cross-sectional area is  $9.8 \times 10^{-7} \text{ m}^2$ . If the mass is pulled a little in the vertically downward direction and released, it performs simple harmonic angular frequency  $70 \text{ rad s}^{-1}$  if Young's Modulus of the material of the wire is  $n \times 10^9$ , find the value of n?

ELECTRICAL ENGINEERING

A Germanium diode with a load resistance of  $367 \Omega$  is connected with another A.C. voltage supply of 39 V as its peak value in series, at 298 K. After the multiple measurements, it was found that it gives a peak voltage of 24 V in its output. Find the resistance offered by the diode when it is in forward bias.

ELECTRONICS AND  
COMMUNICATION ENGINEERING

Two bodies of masses m and M are connected through a metal wire passing over a frictionless fixed pulley. The area of cross-section of the wire is  $6 \times 10^{-9} \text{ m}^2$  and its breaking stress is  $4 \times 10^9 \text{ Nm}^2$ . If  $m=1\text{kg}$ , if the maximum value of M is  $K \times 3 \text{ kg}$  for which the wire will not break. Find the value of K. ( $g=10 \text{ m/s}^2$ )

CIVIL ENGINEERING

A 40 MVA, 3 phase, star connector alternator with an impedance of 5 ohm is operating in parallel with constant voltage of 12 kV, then find the armature current and power factor under maximum power condition.

MECHANICAL ENGINEERING

Water at a gauge pressure of 4.8 atm at street level flows into an office building at a speed of 0.08 m/s through a pipe 5.0 cm in diameter. The pipes taper down to 2.6 cm in diameter by the top floor, 10 m above. Calculate the flow velocity and the gauge pressure in such a pipe on the top floor. Assume no branch pipe and ignore viscosity.

CHEMICAL ENGINEERING

A programmer wants to send a message to another programmer for sake of data compression. He sends the message in form of tokens which is given by sequentially : 1,2,3,4,7,3,11,12,8,5,11,6 and here's the dictionary provided by sender:

Index	1	2	3	4	5	6
Entry	/	W	E	\$	€	A

Find the message sent by the programmer.

INFORMATION TECHNOLOGY



Winner of the Tech inSights of Tiresia Volume 14, Issue 2 is Satvik Tripathi, B. Tech. 3<sup>rd</sup> Year, ECE.  
Rest of the answers received were either late or unsatisfactory.

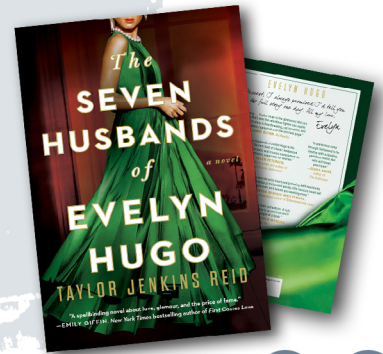
# "Quotiloquy"

"When you're given an opportunity to change your life, be ready to do whatever it takes to make it happen. The world doesn't give things, you take things."

**-The Seven Husbands of Evelyn Hugo**

This quote emphasizes the idea that one must take action and seize opportunities rather than passively waiting for them to be given.

**-Nishita Tripathi, ME 2<sup>nd</sup> year**



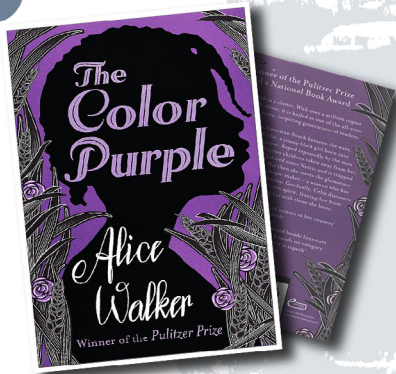
"Time moves slowly, but passes quickly."

**-The Color Purple**

This quote portrays that life's moments may seem to drag on, but in the grand tapestry of time, they swiftly weave the story of your journey.

Embrace each moment, for they shape the beautiful tapestry of your life.

**-Shivam Rai, CSE 2<sup>nd</sup> year**



"It takes great deal of bravery to stand up to our enemies, but just as much to stand up to our friends."

**-Harry Potter and the Sorcerer's stone**

This quote reminds that courage isn't solely about facing external adversaries.

It involves speaking up for the right even when it means challenging the beliefs of our close friends.

**-Aadriha Barnwal, IT 2<sup>nd</sup> year**



We invite all the students to share the book quotes that have profoundly impacted their lives. Also, provide a brief description of how that quote had such a significant influence on you at [literaryedb@mmmut.ac.in](mailto:literaryedb@mmmut.ac.in). Best ones will be published in the next issue of **Tiresia**.



# प्रारब्ध

“

जीवन पथ पर कुछ खो जाने पर मानव हो जाता अधिक विकल है। सबल निबल नहीं है मानव बस केवल प्रारब्ध प्रबल है॥

**प्रा**रब्ध हमारे द्वारा किए जा रहे वे सारे कार्य हैं, जो भविष्य में होने वाली हमारी दिनचर्या को संभवतः बदल सकते हैं। हर व्यक्ति के जीवन में प्रारब्ध का एक महत्वपूर्ण स्थान होता है। सभी पूरे मन के साथ अपना कार्य करते हैं परंतु उन्हें वह निष्कर्ष प्राप्त नहीं होता जिसके वे स्वयं को हकदार समझते हैं। यथा-स्थिति में व्यक्ति कैसे जाने की कौन से वे कारक हैं जो इसके लिए मूल्यतः प्रतिपादित है?

कई बार ऐसा होता है की सही नियत और पुरी लगन के पश्चात भी इच्छित परिणाम प्राप्त नहीं होते हैं। जो हमें विस्मय में डाल देते हैं। वस्तुतः हमें कर्म और उसके फल के मूल सिद्धांत पर गहराई से विचार करने के लिए विवश कर देते हैं कि सब कुछ सही करने के बावजूद भी हमें विपरीत परिणाम क्यों प्राप्त हुए? काफी चिंतन के बाद हम इसी निष्कर्ष पर पहुँचते हैं कि जो भी हमारे साथ घटित हो रहा है या होने वाला है वह कहीं ना कहीं हमारे प्रारब्ध से ही प्रभावित है। व्यक्ति का प्रारब्ध भी उसके द्वारा किए गए कर्मों का चलचित्रण है। इसका जीवंत उदाहरण हैं - हमारे देश के विख्यात धावक 'नीरज चोपड़ा' जी हैं, जिन्होंने अपने

कर्म को ही हमेशा महत्व दिया है और २०२३ में 'वर्ल्ड एथलेटिक्स चैंपियनशिप' में स्वर्ण पदक जीत कर देश को गौरवान्वित किया है। इनका भी यह सफर आसान नहीं था परंतु निरंतर परिश्रम और कार्य करने की लगन से यह संभव हो पाया। नीरज जी का जन्म एक किसान परिवार में हुआ था। यदी वह इसे अपना प्रारब्ध मानकर बैठ जाते तो वे यह स्वर्ण अवसर खो चुके होते।

जैसा कि हम सब जानते हैं कर्मों का संचित फल जिसका प्रभाव हमारे वर्तमान पर होता है- वह है प्रारब्ध। अब प्रश्न यह है कि यह मूल्यांकन कैसे करें कि हमारे द्वारा जो कार्य किया जा रहा है वह हमारा प्रारब्ध है या हमारा कर्म? इस पर कई सारे मत हैं पर किसी व्यक्ति विशेष ने यह समझाया है कि अगर हम कोई कार्य अपने मन से कर रहे हैं और हमारा हृदय भी यह कहता है कि हमें वह कार्य करना चाहिए तो वह प्रारब्ध है क्योंकि हमें नहीं पता होता कि हमारे इस फैसले का परिणाम क्या होगा?

अगर हम कर्म के सिद्धांत को देखें तो हमें यह पता चलता है कि मनुष्य अपने भविष्य का निर्माता स्वयं ही है अतः इसी बात को प्रमाणित करते हुए हमारे

प्राचीन ग्रंथ रामचरितमानस में भी लिखा है-

कर्म प्रधान विश्व रचि राखा।  
जो जस करहि सो तस फल चाखा॥

अर्थात् - जो जैसा कर्म करेगा उसको उन्ही कर्मों के अनुसार फल भी भोगना पड़ेगा, यही संसार का विधान है। बीते वर्षों में तेजी से प्रसिद्धि प्राप्त कर चुके एडटेक कंपनी पीडब्लू के संस्थापक व शिक्षक 'अलख पांडे' जी भी इसका एक जीवंत उदाहरण हैं, उन्होंने न जाने कितने बच्चों के जीवन में शिक्षा की अलख को जागृत किया है। वे भी अगर अपने प्रारब्ध को मान लेते और अपना कर्म न करते तो उन्होंने जिस असंभव कार्य को संभव किया है शायद वह ना हो पाता। भगवान श्री कृष्ण ने भी गीता में कर्म की महत्ता को रेखांकित करते हुए अपने श्री मुख से कहा है -

कर्मण्येवाधिकारस्ते मा फलेषु कदाचन।  
मा कर्मफलहेतुर्भूर्मा ते सङ्गोऽस्त्वकर्मणि॥

भावार्थ: श्रीकृष्ण ने कहा कि हे अर्जुन, कर्म करना तुम्हारा अधिकार है, फल की इच्छा करने का तुम्हारा अधिकार नहीं। कर्म करना और फल की इच्छा न करना, अर्थात् फल की इच्छा किए बिना कर्म करना, क्योंकि मेरा काम फल देना है। श्री कृष्ण हमें यह समझाते हैं कि हर कर्म का प्रतिफल होता है। समस्त कर्मों के फल हमारे सूक्ष्म अंतःकरण में संगृहीत होते हैं, जो संचित कर्म कहलाते हैं। अपने जीवन में जिन लोगों ने भी ऊंचाइयों को प्राप्त

किया है, उन्होंने हमेशा कर्म को ही महत्व दिया है अगर प्रारब्ध के फल स्वरूप उनके जीवन में कुछ कठिनाइयां आईं भी तो वे उससे भागे नहीं उसके सामने न झुके और ना ही रुके अपितु पूरी मजबूती और लगन के साथ उसका सामना किया और तन्मयता के साथ अपने कार्यों को करते हुए जीवन में चरमोत्कर्ष को प्राप्त किया है। इसी को रेखांकित करते हुए राष्ट्रकवि रामधारी सिंह दिनकर जी ने भी यह लिखा है-

वसुधा का नेता कौन हुआ?  
भूखण्ड-विजेता कौन हुआ?  
अतुलित यश क्रेता कौन हुआ?  
नव-धर्म प्रणेता कौन हुआ?  
जिसने न कभी आराम किया,  
विघ्नों में रहकर नाम किया।

अतः कर्मों के द्वारा प्रारब्ध को बदला जा सकता है, इसलिए कर्म को प्रधानता देते हुए अपने निर्धारित कर्म को पूरी सुचिता और समर्पण के साथ करना चाहिए। निःसंदेह हम अपने प्रारब्ध के रचयिता खुद ही हैं। ऐसा नहीं है कि यह कहीं से लाकर हम पर थोपा जा रहा है। हमारा वर्तमान में किया गया कर्म ही भविष्य में हमारा प्रारब्ध बन जाता है। अगर इंसान अपना कर्म पूरी मेहनत, लगन, उचित दिशा निर्देश और न हार मानने वाली प्रवृत्ति को अपनाकर करे तो असम्भव को भी सम्भव कर सकता है। अतः हमें हमेशा यह प्रयास करते रहना चाहिए कि हम अपना कर्म अच्छा ही करें ताकि भविष्य में हमें उसका परिणाम भी अच्छा ही प्राप्त हो।





## Get in Touch



[www.facebook.com/edboard.mmmut/](http://www.facebook.com/edboard.mmmut/)



[literaryedb@mmm.ut.ac.in](mailto:literaryedb@mmm.ut.ac.in)



[https://www.instagram.com/the\\_editorial\\_board/](https://www.instagram.com/the_editorial_board/)

## The Editorial Board

*-Beckoning Creati'wit'y*



Scan the code to download an electronic version of the newsletter.



Madan Mohan Malaviya University of Technology  
Gorakhpur (U.P.) India

Established by U.P. Act No. 22 of 2013 of U. P. Government  
(Formerly Madan Mohan Malaviya Engineering College)