

THE HEARTBEAT OF MIT-WPU Pune

## *Celebrating Passion, Performance & Progress*



## *From the Executive President's Desk*

Dear friends, I would like to extend my heartfelt wishes for the Year 2026 to be a year of peace, prosperity, and unparalleled excellence for Bharat in every field. The past two months have had moments of immense joy and moments equally of deep sorrow. First and foremost, I offer my Pranam to the late Shri. Ajit Dada Pawar, former Deputy Chief Minister of Maharashtra, whose untimely demise has been an irreparable loss for Maharashtra and the national political landscape. He was a visionary and a forthcoming leader he was a steadfast supporter of the National Legislators' Conference, Bharat, and the MIT School of Government. Also, we deeply mourn the passing of Sir Mark Tully, former BBC Bureau Chief, and an esteemed member of the Governing Council of Bharatiya Chhatra Sansad. Through his profound work and empathetic storytelling, he captured the souls of ordinary people of India. Their legacies continue to be the guiding light in our own journey to leadership, truth, and service to the nation.

The month of February commenced with the celebration of the Founders Day on the 3rd of February, alongside the prestigious Bharat Asmita National Awards. This year, at the BANA Awards, we honoured four great luminaries in the fields of Music, Politics, Education, and Cinema, recognizing their contributions to our nations honor and pride. The key recipients were Ustad Amjad Ali Khan, Padma Vibhushan, legendary Sarod virtuoso; S. Jothimani, Member of Parliament, Lok Sabha; Dr. Srivardhini K. Jha, Professor at IIM Bangalore; and Dr. Mohan Agashe, Veteran Actor, Psychiatrist. Turning to our milestones, this year Bharatiya Chhatra Sansad was held from 21st February to 23rd February. An annual flagship event under the aegis of the School of Government, I was highly excited to see students enthusiastically participate in the 15th Bharatiya Chhatra Sansad in a new format that encompasses Democracy, Leadership, Governance, and Public Policy through classroom deliberations and expert-led discussions. The BCS floor was graced by the presence of luminaries from Politics and the Media. Bringing together 6000+ students across 100+ classrooms, the BCS DLGP 3 Day program witnessed the educated youth of Bharat actively engaging in nation-building.

Our campus spirit further flourished with the University Annual Event Spandan, under the theme One University One Gathering One Family, which was celebrated to symbolize the collective spirit of the MIT-WPU Pune family. The event was a unifying stream for faculty, students, and staff who came together to live the spirit of cultural vibrancy, creativity, and fellowship. Similarly, the MIT-WPU student-driven Cultural Fest- Aarohan- an event by the Students for the Students, was a spectacular event that unfolded with energetic performances that showed not only the valuable talents of the MIT-WPU students but also marked a milestone in the history of MIT-WPU's vibrancy in its educational legacy.

The pulse of MIT-WPU Pune beats strongest when our students take the lead in governance, culture, and innovation. Our journey at MIT-WPU is not only about academic degrees, but of nurturing the character and leadership required to steer Bharat to its rightful place as a global leader. Let us remain united in our purpose, resilient in our challenges, and relentless in our pursuit of Excellence.



**Dr. Rahul V. Karad**  
Executive President  
MIT World Peace University

# Campus Happenings: Moments that Defined the Semester

## VLSI & Embedded Systems Conference 2026

The 39th International Conference on VLSI Design and the 25th International Conference on Embedded Systems hosted 2000+ students, featuring tutorials, AI and RISC-V discussions.



## The Winter School Program

The Winter School Program at MIT-WPU Pune engaged Grades 9–12 students in a three-day immersive experience, exploring robotics, drones, AI coding, UX design, and filmmaking through expert-led, hands-on sessions, collaborative challenges, and certifications.



## Global Academic Immersion – Japan

As part of global academic immersion in Japan, our engineering students gained first-hand insights into cutting-edge manufacturing and industry standards, advancing their technical acumen and global outlook.





### Experiential Learning at Sea: Visit to Aban VIII Jack-Up Rig

The MIT-WPU, Pune IADC Student Chapter gained valuable hands-on exposure aboard the Aban VIII Jack-Up Rig, exploring offshore drilling operations, workflows, and safety practices, transforming classroom knowledge into practical industry insight



### The Law Network Forum 2026

The Law Network Forum 2026, organised by the School of Law, convened 30 distinguished delegates from the legal and corporate sectors, fostering dialogue on emerging trends, legal education, and industry collaboration.



## HR Conclave 2026: Bridging Academia and Industry

MIT World Peace University, Pune, in collaboration with HR Shapers Group, successfully concluded HR Conclave 2026, convening senior HR leaders and academicians to deliberate on employability, workforce readiness, and strategic industry – academia collaboration.



## Leadership Lab: Values in Action

RSOL, MIT-WPU, Pune, hosted a Leadership Lab featuring Ms. Shailaja Rai, Commissioner of Income Tax, Mumbai, who shared insights on integrity, ethical judgment, and public trust, inspiring values-driven leadership.



## National Heartful Campus Award 2025

MIT-WPU, Pune, is honoured with the National Heartful Campus Award 2025 at the Global Headquarters of Heartfulness, recognising its commitment to heart-centred education and holistic, values-driven development during 2020–2025.





### National Youth Day

On the 164th Birth Anniversary of Swami Vivekananda, MIT-WPU Pune commemorated National Youth Day with addresses by university leaders and student speakers, reaffirming his vision of character-driven youth, ethical leadership, and nation-building through education.

### Police Raising Week 2026

MIT-WPU, Pune, commemorated Police Raising Week 2026, honouring the valour of the Maharashtra Police in the presence of Amitesh Kumar. The programme showcased police operations, vigilance initiatives, and safety awareness activities, reinforcing respect for service, discipline, and community protection.



### Faculty Development Programme on Commercialisation of Patents

The Internal Quality Assurance Cell (IQAC) conducted an FDP on “Commercialisation of Patents” on 31 January 2026, led by Suneet Sabale of Brainiac IP Solutions. The session strengthened faculty understanding of patent filing, valuation, licensing, and research commercialisation strategies.

### Industrial Visit to National Institute of Naturopathy

MSc Yoga and Meditation students of MIT World Peace University, Pune, visited the National Institute of Naturopathy, an autonomous body under the Ministry of AYUSH, gaining experiential exposure to naturopathy, yoga therapies, and drugless healthcare practices, strengthening interdisciplinary clinical understanding and academic engagement.



## International Grant Support for ROP Research Initiative

A project on Retinopathy of Prematurity (ROP) received \$6,200 in funding under the EPICS in IEEE program, supported by the IEEE Standards Association. The team—Rakshit Jain, Soham Gujar, Kirti Agarwal, and Tanaya Borkar—works under medical guidance from Dr. Sucheta Kulkarni, with a dataset collection at H. V. Desai Eye Hospital, advancing technology-driven neonatal eye care solutions.



**Dr. Ranjana Agrawal**  
DCET (SoCSE), MIT-WPU, Pune



**Dr. Sharmishta Desai**  
DCET (SoCSE), MIT-WPU, Pune

## Prestigious ICMR Grant for Retinopathy of Prematurity Research

Prof. Ranjana Agrawal and Dr. Sucheta Kulkarni, along with Prof. Sharmishta Desai, Dr. Anita Gaikawad, and Dr. Kuldeep Dole, received a ₹1.5 Crore research grant from the Indian Council of Medical Research for their project on Retinopathy of Prematurity (ROP), marking a significant institutional achievement.

## National Academic Immersion Programme at IIT Indore

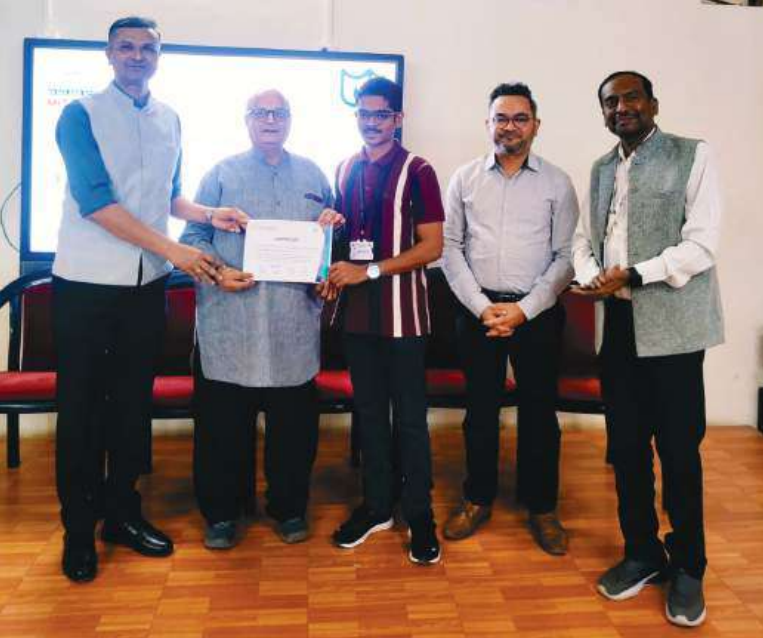
Students of T.Y. Materials Science & Engineering and T.Y. Chemical Engineering visited for a National Academic Immersion Programme at IIT Indore, gaining advanced research exposure, laboratory experience, and academic interaction in emerging engineering domains.



## Better Kitchen Culinary Competition

The WPU School of Business, Department of Hospitality Management, hosted Better Kitchen Culinary Competition, fostering culinary innovation, experiential learning, industry interaction, and professional excellence among aspiring hospitality leaders.





## Two-Day Workshop on Liquid Chromatography – Mass Spectrometry

The Department of Pharmaceutical Sciences, conducted a Two-Day Hands-on Workshop on Liquid Chromatography – Mass Spectrometry (LC-MS) with support from B. V. Patel Education Trust. Convened by Dr. Chandrashekhar Bobade, the workshop trained 24 delegates in LC-MS instrumentation and analytical applications.



## International Immersion at AIT

Students of the Department of Biosciences and Technology completed a one-month immersion at the Asian Institute of Technology, working on simulation and AI projects, strengthening research skills, global collaboration readiness, and cross-cultural academic engagement.

## Annual Industry–Institute Interaction Program

The Flagship SPE MIT-WPU Student Chapter's Annual Industry–Institute Interaction Program united global energy leaders and young professionals, offering immersive insights into oilfield operations, AI, CCUS, geothermal innovation, and evolving careers in the oil & gas sector. Guided by experts from BP, ExxonMobil, Chevron, Baker Hughes, and Quorum Software, the 29-year legacy continues to empower future petroleum engineers.



## DevConf.IN 2026

MIT World Peace University, in collaboration with Red Hat, successfully hosted DevConf.IN at its Pune campus, convening global developers, industry leaders, and academia. The summit featured strategic keynotes on Sovereign AI and scalable ecosystems, a forward-looking panel on "Classroom to Cloud," and reinforced MIT-WPU's commitment to bridging academia with industry-driven innovation.





### 6th Mitsubishi Electric Cup (MECA 2026)

MIT-WPU proudly hosted the Mitsubishi Electric Cup in association with Mitsubishi Electric India. Centered on “Automating the world through digital innovation,” the national-level competition united industry leaders and academia, empowering future engineers to demonstrate technical excellence while strengthening research, automation, and industry-academia collaboration.



## Collaborations & Partnerships | Progress Through Synergy

### MoU with United Religions Initiative (URI)

MIT-WPU, Pune formalised a strategic partnership with United Religions Initiative (URI) to strengthen interfaith dialogue, peace education, and global engagement opportunities, enhancing academic exposure and collaborative prospects for Peace Studies students.



**itsMF India**  
The IT Service Management Forum



### MoU with itsMF India

A collaboration to develop industry-aligned IT Service Management (ITSM) programmes and experiential learning frameworks, equipping students with practical competencies for evolving digital ecosystems and future-ready careers.

### MoU with CHSS Hyderabad

The School of Law, MIT-WPU, Pune formalised a collaboration with CHSS Hyderabad to facilitate expert-led internships and structured mentorship, strengthening practical exposure and domain expertise for students in law and human security studies.



### MoU with Microbiologist Society of India

A collaboration to promote mentorship, specialised training, and collaborative research initiatives, strengthening academic-scientific engagement and innovation-driven learning.





**L&T  
EduTech**



### MoU with L&T EduTech

The Department of Computer Engineering & Technology partnered with L&T EduTech to facilitate industry-aligned projects, applied learning modules, and structured skill learning development, enhancing technical proficiency and career readiness in emerging technology domains.



### IPI-MIT-WPU Students' Chapter in Collaboration with Indian Plastics Institute

The Department of Chemistry established the IPI-MIT-WPU Students' Chapter in association with the Indian Plastics Institute (IPI), fostering hands-on technical learning, industry engagement, and professional networking in polymer and plastics sciences.



**Bentley®**



### **Collaboration with Bentley Systems**

The Departments of Computer Science & Applications and Civil & Structural Engineering partnered with Bentley Systems to advance industry-academia collaboration, integrating technology-driven learning, applied projects, and practical exposure to develop globally competent engineers.



**MEMORANDUM OF UNDERSTANDING**



**MoU**

**DRIVEN** by Passion,  
**DEFINED** by Performance



**SAYALI**

**WANI**



## INTERNATIONAL TABLE TENNIS PLAYER



A second-year BBA student at MIT-WPU, Pune, secured the Silver Medal in the Women's Open category at the 5th National Ranking Tournament, demonstrating competitive excellence, composure, and consistent sporting performance at the national level.

**ABEER**

**DHOND**



## NATIONAL-LEVEL SWIMMER



A BA Psychology student at MIT-WPU, Pune, secured a Top 12 National Rank at the All India Inter-University Aquatics Championship 2025-26, qualified for the Khelo India University Games and exemplified academic and sporting excellence.



**SHREYASI**

**JOSHI**



## INTERNATIONAL INLINE FREESTYLE SKATER



A third-year B.Tech Computer Science student at MIT-WPU, Pune, secured 5th place in the Senior Women category at the Inline Freestyle World Championships 2025, demonstrating exceptional athletic excellence, discipline, and global competitive performance.

**SAEE**

**PATIL**



## WOMEN DIVERS HALL OF FAME AWARD



A M.Sc. Environmental Science student, has been honoured with the prestigious Women Divers Hall of Fame Award. Her research on ghost crabs and sea turtles at Velas and Wayangani beaches advances coastal conservation, strengthens marine ecosystem protection, and exemplifies impactful environmental leadership.

**YASHODHAN**

**PATIL**



## NATIONAL ROLLER SKATING



A First-Year BBA Branding & Advertising student at MIT-WPU, Pune, secured Gold in Street and Bronze in Park Skateboarding at the 63rd National Roller Skating Championship 2025, demonstrating outstanding dedication and competitive excellence at the national level.

**SCHALEEN**

**FERNANDES**



**NATIONAL-LEVEL  
ICE SKATING AND  
ROLLER SKATING PLAYER**

A Second-Year BA LLB (Hons) student at MIT-WPU, Pune, secured Gold, Silver, and Bronze medals in Ice Skating at the Khelo India Winter Games 2026, exemplifying discipline, resilience, and competitive excellence on a national platform.

**AARYESH**

**HONRAO**



**NATIONAL-LEVEL  
ROLLER SKATING ATHLETE**

A First-Year Integrated B.Tech ECE (AI/ML) student at MIT-WPU, Pune, secured Gold in Classic Slalom and Silver in Speed Slalom at the 63rd National Roller Skating Championship 2025 in Visakhapatnam, demonstrating outstanding versatility and competitive excellence.

**DISHA**

**PUROHIT**



**NATIONAL PLAYER**



A First-Year Integrated M.Sc. Biotechnology student at MIT-WPU, Pune, secured Silver (Kata) at the 6th All India Karate National Championship and Bronze (Kata) at the 13th International Karate Tournament, demonstrating remarkable discipline and competitive excellence.

**YESHAYA**

**CONTRACTOR**



**INTERNATIONAL-LEVEL  
SHOOTER**

A BA Liberal Arts student at MIT-WPU, Pune, secured 1st place in Junior Women, 1st in Youth Women, and 3rd in Women's category at the 68th National Shooting Championship Competition 2025-26 held at Dr. Karni Singh Shooting Range, demonstrating exceptional precision and competitive excellence.



**KAUSHAL**

**KONDE**



**NATIONAL  
ROLLER SKATING**

A third-year Chemical Engineering student at MIT-WPU, Pune, received the Donald F. Othmer Second Year Student Academic Excellence Award at the AIChE Annual Student Conference 2025, marking distinguished academic performance and global recognition.

**KRUTI**

**DAVE**



**INTERNATIONAL  
TAEKWONDO ATHLETE**



First-Year student at MIT-WPU, Pune, secured six medals—Gold in Poomsae and Speed Kicks, and Silver in multiple combat events—at the GTTF 1st Open National Taekwondo Championship 2026, demonstrating exceptional discipline and competitive excellence.

## Global Representation in Synthetic Biology Innovation

Team MIT-WPU Bharat represented India on the Global Synthetic Biology Stage with Opio-Rx, a rapid, non-invasive diagnostic platform for synthetic opioid detection, demonstrating interdisciplinary research excellence, public health impact, and meaningful science outreach.



## Student Collaboration in Feature Film Production

MIT-WPU, Pune students contributed to the Marathi feature film Uttar, produced by Zee Studios and directed by Kshitij Patwardhan. The collaboration provided hands-on industry exposure, with students credited in the film's official release.





### Team Visionary Vanguard

At the Smart India Hackathon, organised by the Ministry of Education and All India Council for Technical Education, Team Visionary Vanguard secured First Prize in the Hardware category, reflecting technical excellence, strategic problem-solving, and strong mentorship-driven teamwork.

### Women's Badminton Team Qualifies for National Stage

The women's badminton team of MIT-WPU, Pune delivered an exceptional performance at the All India University Tournament, finishing among the top 16 and qualifying for the Khelo India University Games 2026, marking a significant national milestone.



### International Research Internship at Sunway University

Pratik Tabhane, Final-Year B.Tech Chemical Engineering student at MIT-WPU, Pune, completed a research internship at Sunway University under Prof. Numan Arshid, Sunway Centre for Electrochemical Energy and Sustainable Technology, focusing on sustainable catalyst development for biodiesel and wastewater treatment.



### Qualified for National Stage at the AIU Games 2026

The MIT-WPU, Pune Women's Table Tennis Team secured second position at the West Zone Inter-University Table Tennis Tournament 2025, earning qualification for the Association of Indian Universities Games 2026 and Khelo India Games 2026, reflecting resilience, teamwork, and sustained competitive excellence.

## National Recognition at NIDAR 2025

Team AVION – Aerial Vehicle Innovation in Operation and Navigation represented MIT-WPU, Pune at NIDAR 2025 hosted at Gautam Buddha University, presenting an autonomous disaster-management drone solution. The team secured AIR 8 in Business Presentation, AIR 27 Overall, and the Ignite Prize (Rank 26), demonstrating technical innovation and societal impact.



**JANHAVI KALAL**

B.Com (Hons. -International Accounting and Finance)

Congratulations for clearing ALL 13 papers of the ACCA qualification and becoming an ACCA Affiliate during the December 2025 examination.

## ACCA Achievement: Global Accounting Milestone

Janhavi Kalal and Saakshi Patadiya, B.Com (Hons. – International Accounting & Finance) students at MIT-WPU, Pune, successfully cleared all 13 papers of the Association of Chartered Certified Accountants, becoming ACCA Affiliates. Additionally, 15 students cleared key modules—AFM, SBL, SBR, PM, and FM—in the 2025 examinations.

**SAAKSHI PATADIYA**

B.Com (Hons. -International Accounting and Finance)

Congratulations for clearing ALL 13 papers of the ACCA qualification and becoming an ACCA Affiliate during the December 2025 examination.

## National Victory at the ACM-W NariYukti National Hackathon 2026

Team ANTS from MIT-WPU, Pune secured 1st Prize (AIR 1) at ACM-W NariYukti 2026 held at Infosys Hubballi. During the 24-hour finale, they developed “Know Your Product,” a digital Product Passport solution advancing transparency, traceability, and responsible consumption through innovative engineering design.



## Rapta Triumphs at Firodia Karandak 2026

The Cultural Club of MIT World Peace University, Pune secured Second Prize and Best Direction (Second) at Firodia Karandak 2026 for Rapta—a powerful rap-driven play on truth, resistance, and social change.



Crowned  
Femina Miss India  
Maharashtra  
2026!

Congratulations  
**RAJNANDINI  
PAWAR,**

Alumna,  
Department of Media  
and Communication,  
MIT-WPU, Pune.



## Rajnandini Pawar

A proud alumna of MIT World Peace University, Rajnandini Pawar has been crowned Femina Miss India – Maharashtra. Her confidence, resilience, and exceptional communication skills exemplify leadership, grace, and an inspiring journey of achievement.



## Excellence in **TEACHING RESEARCH LEADERSHIP**

### Research Publication in the **JOURNAL OF KNOWLEDGE MANAGEMENT**

**Dr. Shivam Upadhyay**

Ramcharan School of Leadership

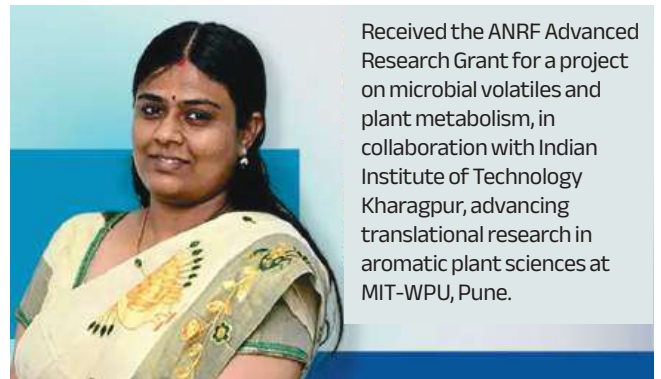


Published first-authored research in the Journal of Knowledge Management, examining leader humility and knowledge-sharing dynamics.

### ANRF Advanced Research Grant for **Plant Science Innovation**

**Dr. Nithya Kutty**

Department of Biosciences & Technology



Received the ANRF Advanced Research Grant for a project on microbial volatiles and plant metabolism, in collaboration with Indian Institute of Technology Kharagpur, advancing translational research in aromatic plant sciences at MIT-WPU, Pune.

### A step towards a **CIRCULAR FUTURE.**

**Dr. Garima Chaudhary**

Department of Visual Arts



Published a research paper in The Design Journal (Q1) titled "Unlocking AI-Driven Innovations in Textile Design for a Circular Economy"



### **Global Musical Contribution**

**Prof. Prathmesh Rohan Sonawani**

Dadasaheb Phalke International Film School

The flute compositions in Play by Ed Sheeran featured performances by Mr. Prathmesh Rohan Sonawani, Teaching Associate at Dadasaheb Phalke International Film School, MIT-WPU. His artistry also enriched the Bollywood film Saiyaara, reflecting impactful industry engagement.



### Landmark Publication in Oncology Diagnostics

**Dr. Shvetank Bhatt** from WPU School of Health Sciences & Technology, authored Liquid Biopsy in Cancer Management: Integrating Diagnostics and Clinical Applications, published by Elsevier. The volume advances clinical understanding of liquid biopsy in early detection, treatment monitoring, and personalized cancer therapy through research-driven insights and case studies.

### Faculty Publication Milestone in Applied Algorithms

**Amol P. Narke and Prashant P. Malavadkar** from the Department of Mathematics and Statistics, published a conference paper titled “An Efficient Algorithm for Path Matrix Computation and Improved Path Energy Bounds” in Applied Algorithms (ICAA 2026), first online on 6 January 2026 (Pages 15–25, Springer, Cham, Q2, Scopus). The work proposes an efficient path matrix algorithm with improved energy bounds, advancing research in applied algorithms.



### Driving Efficiency through Automation

**Surendra Pardeshi** developed advanced Excel formulas and automation tools at the Knowledge Resource Centre, MIT World Peace University, enabling stock verification 6–8 months ahead of schedule with exceptional accuracy and record authenticity.



### New Book Publication Announcement

**Umesh Dubey's** latest book, Multidisciplinary Project Management for Organisational Success: Advanced Techniques for Engineering, Science, and Management, has been published by CRC Press, part of the Taylor & Francis Group, advancing integrated project leadership across engineering, science, and management domains.



### Best Oral Research Paper Award

**CA Swati Mahanoor** received the Best Oral Research Paper Presentation Award at an international conference on Applied Sports held at Sabaragamuwa University. Her paper, “From Event to Economy: Analyzing the Financial Legacies of Mega-Sports Events Worldwide – A Comparative Perspective between India and Sri Lanka”, was recognised for its outstanding academic contribution.

### Riverbank Filtration Facilitated the Attenuation of Organic Micropollutants in the Floodplains of the River Yamuna, India

Soma Mishra, Rakesh Kumar, Pradeep Kumar, Indu Mehrotra, Rosanna Bonasia, Abraham Mora, Jian Zang, and Manish Kumar\*

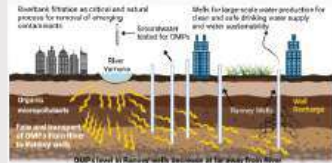
Cite This ACS ES&T Water 2025, 5, 7165–7181

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**ABSTRACT:** We investigated the occurrence of organic micropollutants (OMPs) in the floodplains of the River Yamuna, Delhi, India, with a primary focus on corroborating the fate and transport of OMPs in highly pollution-stressed floodplains being tapped for potable water supply. In addition, we traced the seasonality of riverbank filtrations (RBFs) related to the aggravation or attenuation of contaminants of emerging concern. Fifty-seven OMPs were identified, quantified, and categorized into pharmaceutically active compounds (PhACs), pesticides, personal care products (PCPs), phthalates, endocrine-disrupting chemicals (EDCs), fatty acids, food additives, hormones, and hospital wastes. Rainy wells (RWs) exhibited the presence of a lower number of C. Supporting Information OMPs with attenuated concentrations with respect to the surface water. Largely, RBF/sand filtration appears to be an effective, low-cost pretreatment step, naturally offered as the first step in potable water supply to densely populated areas. We believe that the efforts made to tap the RWs for a potable water supply in Delhi, rather than deep groundwater, provide a fair degree of sustainability to the entire process. However, a fully developed and precisely operated wastewater treatment system can be a potential way to keep the RWs safe for a longer period, providing a clean, safe, and potable water supply.

**KEYWORDS:** organic micropollutants, groundwater, Yamuna river, riverbank filtration, India.



### Research Publication in ACS ES&T Water

Soma Mishra, from MIT-WPU, Pune, recently published a research paper in ACS ES&T Water, a Q1 journal with an Impact Factor of 4.58, marking a significant contribution to water science research.

### Engineering magnetite (Fe<sub>3</sub>O<sub>4</sub>) nanoparticles: Controlled synthesis, surface functionalization, and multidisciplinary technological applications: A Review

Mahendra Kohale, Himanshu Inamdar, Kiran Kokate, Raju Ingale, Jayant Joshi, Deobrat Singh, Aavishkar Katti, Satish Polshettiwar, Rahul Aher, Sachin Kulkarni

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https://doi.org/10.1016/j.pcrysgrow.2026.100698

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#### Abstract

Magnetite (Fe<sub>3</sub>O<sub>4</sub>) nanoparticles have garnered significant attention due to their small size and high surface area, biocompatibility, and magnetic properties. This review offers an insightful and comprehensive discussion of recent advances in synthesis techniques and their impact on nanoparticle formation and characteristics. The diverse applications of Fe<sub>3</sub>O<sub>4</sub> nanoparticles in medicine, modern photonics, energy storage, biosensing, catalysis, and environmental remediation are examined. Additionally, surface

### Research Now Live on ScienceDirect

Dr. Satish Polshettiwar's review, Engineering Magnetite (Fe<sub>3</sub>O<sub>4</sub>) Nanoparticles: Controlled Synthesis, Surface Functionalization, and Multidisciplinary Technological Applications, is now published on ScienceDirect, reaching over 20 million researchers worldwide each month.

#### Exploring and Evaluating Deep Learning Techniques for Traffic Prediction in Urban Environments

Siddhant Buchade and Gopal Sakarkar | View all authors and affiliations

OnlineFirst | https://doi.org/10.1177/03611981251394676

#### ABSTRACT

Traffic congestion has been getting worse as a result of the growing population in urban areas that rely on various forms of transportation. However, transportation infrastructure has made significant strides over the last several decades. Traffic prediction plays an important part of intelligent transportation systems in smart cities, promoting relief on traffic congestion. The purpose of this paper is to survey and evaluate deep learning-based traffic forecast techniques in urban areas. It aims to give a wholesome understanding of how these methods can be used in traffic management and control. The review touches on different methods and mechanisms, such as convolutional neural networks (CNNs), recurrent neural networks (RNNs), transformer attention model, graph neural networks or hybrid models such diffusion convolutional

### Research Published in ABDC-Listed Journal

Siddhant Buchade has published a research paper in a Q2-indexed journal recognised under the Australian Business Deans Council (ABDC) Journal Quality List with a B rank, marking a significant academic achievement.



# A Comprehensive Review on Active Noise Reduction Methods for Aircraft Aerodynamics System

Mitul Solanki<sup>1</sup> · Anagha Dusane<sup>1</sup>

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## Abstract

**Purpose** To provide a comprehensive and future-focused synthesis of aerodynamic noise reduction techniques by introducing a novel classification framework that bridges traditional active control systems with emerging machine learning-based predictive approaches. The review aims to deliver actionable insights for advancing intelligent and energy-efficient aeroacoustic control solutions.

**Methods** A systematic evaluation and categorization of active noise control strategies, including plasma actuators, smart materials, and adaptive algorithms such as reinforcement learning, neural networks, and filtered-xLMS systems. Comparative analysis is performed using quantitative performance metrics including decibel (dB) reduction, computational complexity, feasibility, and implementation readiness.

**Results** The review highlights the strengths, limitations, and performance trade-offs of both conventional and AI-driven noise reduction technologies. New hybrid and adaptive approaches demonstrate promising improvements in noise attenuation, operational efficiency, and system intelligence, positioning them as viable candidates for next-generation aeroacoustic control.

**Conclusion** This study establishes a forward-looking roadmap for innovative noise control research by integrating advanced data-driven methods with established active control techniques. The structured comparative framework and identification of hybrid strategies make the review a unique and valuable contribution toward the development of sustainable, adaptive, and practical aerodynamic noise mitigation systems.

**Keywords** Aeroacoustics · Noise reduction · Computational Fluid Dynamics (CFD) · Active noise control · Aerodynamic optimization

## Introduction

Aircraft noise is a critical consideration in modern design, especially with increasingly stringent aviation regulations. In today's airliners, turbofan engines and other propulsion systems account for a large portion of the overall noise output [1]. While substantial progress has been made in reducing engine noise, vibration, and tire-road noise, aerodynamic noise has become a more prominent challenge at high speeds, significantly affecting ride comfort [2]. The area around the wheels is particularly noteworthy for its

contribution to aerodynamic noise. As air flows over the vehicle, the fender disrupts the airflow, causing stagnation and separation, while the wheels generate complex flow instabilities, including vortices created by the interaction of the body and wind. These instabilities result in turbulence and energy dissipation, with the fender further influencing the airflow around the underside and sides of the vehicle [3, 4].

The complex geometry of automobile surfaces also contributes to intricate flow behavior. Turbulence caused by flow separation leads to significant pressure fluctuations and aerodynamic noise in areas like the rear, roof, and cavities. Wind tunnel experiments and simulations have revealed that underbody noise can account for up to 50% of cabin noise, particularly in low-frequency ranges below 630 Hz [5]. Within this range, the chassis area is a major contributor, with the wheel region playing a significant role. Table 1

✉ Mitul Solanki  
mitulsolanki.75@gmail.com

<sup>1</sup> Department of Mechanical Engineering, Dr. Vishwanath Karad MIT World Peace University, Pune, India

## Academic and Innovation Milestones

**Mitul Kumar Solanki** marks notable achievements with a paper published in a Springer Nature journal, a design patent granted, and a research paper presented at an international conference hosted by BITS Pilani, Hyderabad.

## Milestone Moments that **Inspired** and **Elevated**

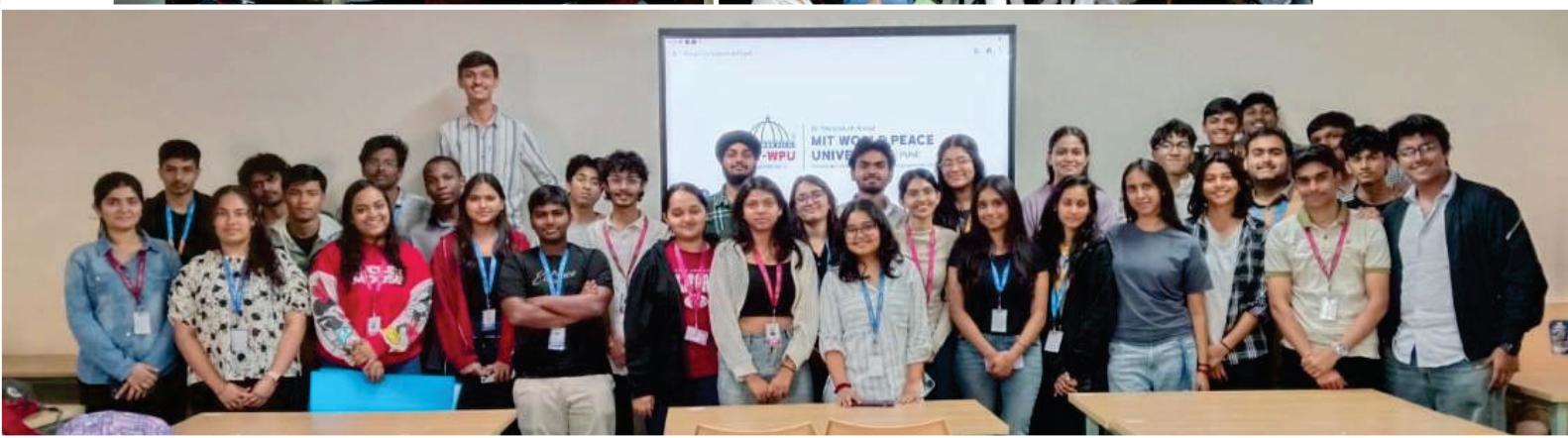
### Honouring the Spirit of the Constitution: 77th Republic Day at MIT-WPU Pune

MIT World Peace University celebrated India's 77th Republic Day with patriotic fervour. The ceremony featured an NCC Flag March, cultural performances, and addresses by Major (Dr.) Surendra Poonia, VSMa, and university leaders, reinforcing constitutional values, discipline, leadership, and the institution's commitment to nation-building and peace.



## Co-Creation Programme Fostered Social Innovation

The Co-Creation programme enabled first-year students to collaboratively address complex social challenges through design thinking. This initiative integrated experiential learning, interdisciplinary teamwork, field research, and structured problem-solving—empowering students to develop sustainable, real-world solutions while earning academic credit.



## 15th Bharatiya Chhatra Sansad: Youth Shaping the Nation

The 15th Bharatiya Chhatra Sansad convened thousands of committed students from across Bharat, fostering structured dialogue on Democracy, Leadership, Governance, and Public Policy. Inspiring addresses by Shri. Vijender Gupta, Shri. Digvijaya Singh, Shri. Rajdeep Sardesai, Shri. Anurag Singh Thakur, Shri. Sandeep Kumar Pathak, and Shri. Shahid Siddiqui enriched discussions—from Campus to Cabinet—reaffirming the mission of nurturing ethical, informed, and action-driven leadership for a participative and empowered nation.



## Founders day

Founder's Day was commemorated with dignity and gratitude, honouring the visionary leadership and enduring legacy of Rev. Prof. Dr. Vishwanath D. Karad at MIT World Peace University. The occasion reflected the institution's commitment to value-based education, peace, and nation-building, inspiring the community to uphold its founding ideals.



## 22nd Bharat Asmita National Awards 2026

MIT World Peace University hosted the 22nd Bharat Asmita National Awards, honouring India's changemakers. Guided by Dr. R. A. Mashelkar and institutional leadership, the ceremony recognised distinguished awardees, including Dr. Srivardhini K. Jha, Ms. S. Jothimani, Dr. Mohan Agashe, and Ustad A m j a d A l i K h a n , celebrating excellence, integrity, and national pride.



## SPANDAN 2026: A Celebration of Unity, Talent, and Industry Synergy

SPANDAN 2026, MIT-WPU Pune's Annual Social Gathering, uniting all schools in a vibrant showcase of culture, creativity, and professional synergy. Distinguished industry leaders from Thermax, JSW Motors, KPIT, Mahindra, Cummins India, ICSI, ICAI, Vodafone Idea, Tech Mahindra, and UST Product Engineering inspired students across engineering, business, science, design, and law—reinforcing the “One University, One Family” ethos through celebration, collaboration, and holistic development.



## AAROHAN 2026

AAROHAN 2026 unfolded as a dynamic three-day cultural spectacle from 24–26 February. Entirely student-led, the 14th edition blended music, theatre, art, and dance into a vibrant showcase of talent, leadership, and creative excellence—reaffirming its stature as Pune’s largest and most electrifying campus extravaganza.



## ‘जिथं आवड.. तिथं सवड’

“मला पुस्तक वाचायला खूप आवडतं; पण सध्या वेळच होत नाही”

“दोन परीक्षा दिल्या मी नृत्याच्या नंतर जमेच ना म्हणून सोडावं लागलं”

“लिहीणं म्हणजे माझा जीव की प्राण पण बाकी सगळ्या कामांमुळे शक्यच होत नाही”

अशी एक ना अनेक वाक्य मला ऐकायला मिळतात, माझ्याच मित्र आणि मैत्रिणींकडून! मी कायम खूप जणांकडून ऐकते मला अमुक-तमुक खूप आवडतं पण आयुष्य इतकं बिझी झालंय ना की वेळच होत नाही ते करायला.. तिकडे लक्ष घायला, मग वाचन असो, गाणं असो, लेखन असो, कुठलाही आवडता छंद असो किंवा काम असो वेळच मिळत नाही.. ही तक्रार आहे. गंमत म्हणजे ही तक्रार कुठे करणार? कुणाकडे करणार? असं कुठलंही तक्रार केंद्र नाही जिथे आपण ही वैयक्तिक तक्रार करू शकतो. मग काय करायचं? जो भेटेल त्याला सांगायचं... आपल्याला आपल्या आवडीची गोष्ट करायला कसं जमत नाही तेही सांगायचं आणि ते का जमत नाही याची एकशे एक कारणं ही सांगायची; पण जेव्हा आपल्याला एखादी गोष्ट आवडते तिला आपण ‘Passion’ असं लेबल लावतो मग त्या Passion साठी वेळ तर काढायलाच हवा. आवड असली की सवड मिळतेच आणि ही सवड मिळाली तर मग जादूच बघा. आपल्यालाही पुरतं कळालेलं नसतं आपण काय आणि किती चांगलं करू शकतो? आवड असेल तेच काम आपण केलं की परफॉर्मन्स अप्रतिम होतो, उत्कृष्ट होतो कारण जे आवडतं ते काम, ती गोष्ट आपण खूप मनापासून करतो. पण मग समजा, जे काम आपण करत असतो ते जर आवडीचं नसेल तर काय करायचं? अशा वेळी कसं ना.. ज्यांना कामच नाही त्यांना विचारा की, पोटापाण्यासाठी काम नसणं म्हणजे काय चिंता असते? काय दडपण असतं? स्वतःचं कुटुंबाचं, ज्यांची जबाबदारी आपल्यावर आहे त्या सगळ्यांचाच विचार आपल्याला जगू देत नाही. मग कळतं की आपल्या आवडीचं असू देत नाहीतर नसू देत, आपल्याकडे काम असणं ही गोष्ट किती महत्त्वाची आहे. मग आवडही जपूया आणि कामही करूया. ठीक आहे ना.. आवडीसाठी स्वतःला थंभर टक्के झोकून नाही देता आलं पण वीस टक्के ते करण्याचं समाधान.. तो समाधानाचा क्षण हा साजरा करता येण्यासारखा असतो. साजरं फक्त यश करायचं नसतं तर तो क्षणही साजरा करायचा असतो ज्या क्षणात तुम्ही तुमची आवड जगता!

कुणी आपल्या आवडत्या गाण्यात हरवून जातं तो क्षण...

कुणी चित्र रंगवण्यात रंगून जातं तो क्षण...

कुणी खास पदार्थ बनवण्यात रमून जातं तो क्षण...

कुणी वाचण्यात - लिहिण्यात दंग होतं तो क्षण...

कुणी गप्पांमध्ये अगदी मोकळेपणाने सामील होतं तो क्षण...

नृत्य, अभिनय यांसारख्या कलांच्या विश्वात कुणी स्वतःलाही विसरून जातं तो क्षण... जगता यायला हवा, साजरा करता यायला हवा.. तो प्रत्येक क्षण जिथे आपण आणि आपलं Passion यातलं अंतर संपलेलं असतं .....

डॉ. शालिनी संतोष टोणपे

(स्कूल ऑफ एज्युकेशन)

## MORE THAN A TREK:

# How the Mountains CHANGED ME



What happens when a fourteen-year-old steps onto a mountain trail for the first time? Seven years later, the answer is written in footsteps across the Himalayas and Sahyadris—a journey from trembling novice to confident mountaineer, forged through frozen nights at  $-21^{\circ}\text{C}$ , near-misses with water snakes, and moments of pure magic watching sunrises paint snow-covered peaks in gold.

### - Vaidehi Bhamre

B.Tech., 3rd Year  
Computer Science and Engineering



### IT STARTED WITH TEN KILOMETERS: PINDARI GLACIER (2018)

Barely fourteen, walking ten kilometers a day through the Kumaon Himalayas. The question wasn't just about reaching the glacier—it was whether young legs could endure what an ambitious mind had committed to. They did. And standing at that first summit, something fundamental shifted. The body proved capable. The impossible became possible. A lifelong obsession was born.

### WALKING WITH GODS: KEDARNATH PILGRIMAGE (2022)

Twenty-two kilometers from Gaurikund. No horse, no mule, no helicopter shortcut—just human determination versus the mountain. The Himalayas threw everything: sudden downpours, bone-chilling cold, fog so thick it swallowed the trail. The air itself thinned with every upward step, turning breathing into conscious effort. But crossing that finish line on your own two feet? That delivered something no vehicle could carry you to—a spiritual energy that only comes from refusing to quit when every muscle screams otherwise.

### WHEN NATURE STOPS PLAYING NICE: KUARI PASS WINTER (2024)

Picture this: you wake up buried. Half your tent is under snow. Ice crystals cling to the walls like frozen art. Your water bottle? Solid ice. Touch a metal container with bare skin and it'll tear your flesh off. Welcome to  $-21^{\circ}\text{C}$  at altitude, where the wind doesn't just blow—it attacks your tent all night like it's personally offended by your presence. Yet dawn breaks, and those same brutal mountains paint themselves in gold and pink so spectacular that frostbitten toes become footnotes. On summit day, when doubt crept in, the trek leader taught a deceptively simple trick: count to ten. One foot forward per count. Breathe. Ten steps, ten-second rest, repeat. Turns out, you can climb anything if you break it into pieces small enough.

### DON'T TRUST THE PRETTY PICTURES: KASHMIR GREAT LAKES (2025)

Seven glacial lakes—Vishansar, Krishansar, Gangbal—each an impossible shade of blue or green that cameras can't

quite capture. The photographs make it look easy: just walking through endless meadows under perfect skies. The reality? A masterclass in humility. Every single day: 12+ kilometers of relentless up- and-down that never lets your legs rest. Three mountains pass over 13,000 feet—and here's the kicker—crossed within just the first two days, before your body has time to properly adjust. Your thighs burn, your knees protest every descent, and the altitude plays tricks with your breathing. But those seven days from Sonamarg to Naranag, crossing rivers and watching landscapes transform? They teach you exactly what 'moderate-to-difficult' really means.

### THE SAHYADRI CHRONICLES

Maharashtra's Sahyadris offered their own brand of adventure through Andharban Forest, Raigad Fort, and other one-day treks steeped in Maratha warrior history. But Sandhan Valley? That's where things got real. Imagine scrambling over boulders the size of houses wedged between canyon walls, learning rock-climbing fundamentals through sheer necessity. Then came the 200-foot rappel—that heart-stopping moment when every survival instinct screams 'don't lean back!' but you trust the rope anyway. Finally, wading through knee-deep frigid pools seemed adventurous enough. Until watching a friend's video later revealed a thick water snake gliding through that exact pool, inches from oblivious feet. Sometimes ignorance truly is bliss.

### WHAT SEVEN YEARS IN THE MOUNTAINS ACTUALLY DOES TO YOU

The changes run deeper than stronger legs or better lung capacity. Sure, there's the practical knowledge—how to pack a backpack so every item earns its weight, how to layer clothes for  $-21^{\circ}\text{C}$ , how to breathe at altitude. But the real transformation? An almost supernatural adaptability. Drop into any challenging situation and the response becomes automatic: assess, adjust, overcome. No panic, no whining, just problem-solving and forward motion. The mountains don't teach this through lectures—they teach it through frozen nights when quitting seems perfectly reasonable, yet somehow, you don't.

### THE QUESTION THAT KEEPS YOU COMING BACK

Why return? Because nothing—absolutely nothing—replicates that feeling. Not academic awards, not career wins, not any amount of comfort or convenience. It's the sunrise that makes you forget frozen toes. It's the trek mates who become family when teamwork literally means survival. It's that ridiculous counting technique carrying you to summits you swore you couldn't reach. It's discovering you're capable of exponentially more than you believed possible. The mountains are calling. The real question isn't whether you should go—it's whether you're brave enough to find out who you become up there.



## Peace, Harmony, and Knowledge: What Young People Should Live By

- Amogh Satish Joshi

First-year Masters in Pharmaceutical Chemistry

**The best things a person can have inside are peace, harmony, and knowledge. They aren't just words in books or speeches; they are real feelings that affect how people think, act, and how society moves forward. These values are like a soft light for today's young people, showing them the way to a happy, balanced, and meaningful life.**

When you're young, you have a lot of energy, dreams, and curiosity. It is a time when people are open-minded, hopeful, and eager to learn. During this phase, peace, harmony, and knowledge come together to help young people become wise, caring, and confident. These values give young people strength from within and help them make good, clear decisions in life.

**Peace** starts on the inside. A calm mind thinks clearly, feels deeply, and acts kindly. Young people learn more about themselves when they learn to stay calm, patient, and focused. They can make good choices and have good relationships when they are at peace with themselves. It also gives them the strength and confidence to face challenges, making every experience a chance to grow.

**Harmony** helps young people make real connections with the world around them. It teaches how to get along, respect others, and work together. Young people learn to listen, accept differences, and work together when they practice harmony. This builds strong friendships, families that help each other, and communities that work together. Harmony fosters empathy and collaboration, enabling youth to evolve into authentic leaders who motivate others through constructive behaviour.

**Knowledge** is a strong force that makes people peaceful and harmonious. It doesn't just mean learning in school; it also means learning about feelings, values, and life skills. Young people use what they learn wisely when they do so with a calm mind. Knowledge teaches us how important it is to be kind, honest, and responsible. It shows that real success means growing as a person and making the world a better place.

**Peace, harmony, and knowledge all work together** to make things balanced. This balance keeps young people's minds clear and their feelings steady. A person who is balanced is happy, motivated, and creative. Young people who follow these values enjoy learning, sharing, and helping others. They know that being happy on the inside is just as important as being successful on the outside.

Peace and harmony have always brought people together and helped communities grow. These values still help

people work together and respect each other in their daily lives. When young people follow these principles, they become links between generations, cultures, and ideas. Their calm way of talking makes conversations warmer and relationships clearer.

Peaceful young people help society in a positive way. Their calm presence makes places safe and welcoming. Their positive attitude builds trust and brings people together. They can solve problems in a smart and creative way because they know a lot. These young people naturally become role models by showing others how to be kind and have dignity.

Teaching young people to live in peace and harmony builds a strong foundation for their minds. It makes them want to learn and grow without being afraid. Young people gain confidence and self-belief when they learn in places that are respectful and supportive. The knowledge acquired in these environments becomes significant and enduring, influencing both character and competence.

Peace and harmony also help people feel good emotionally. Young people who are mindful, grateful, and empathetic tend to feel more connected to themselves and others. They learn how to be patient and how to appreciate understanding. These traits help them stay positive and hopeful as they try out new things and ideas.

When young people choose peace over war, harmony over division, and knowledge over confusion, the world gets better. Every peaceful thought calms things down, every kind sharing of knowledge makes people stronger, and every harmonious action builds trust. These timeless values can help young people shape the future.

Young people find their true potential when they choose the path of peace and harmony. They understand that success means being happy, wise, and making a difference. Progress is good when it makes everyone better. Their journey serves as an inspiration, demonstrating how intrinsic values can change lives and communities.

In conclusion, peace, harmony, and knowledge are gifts that will always be valuable to young people. They help people have strong minds, kind hearts, and lives that have meaning. These values help people grow and make everyone better off. As young people accept them, they bring light to the present and shape a future full of hope, understanding, and unity. Their strength is peace, their guide is harmony, and their lasting treasure is knowledge.

You can copy and paste this into a word processor (like Microsoft Word or Google Docs) and set the alignment to Justify for the perfect full-justified look with even edges on both sides. Let me know if you need it in a different style or format!



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# भारतीय छात्र संसद<sup>®</sup>

Estd. 2011

## (INDIAN STUDENT PARLIAMENT)

INSPIRING YOUTH STRENGTHENING DEMOCRACY

### भारतीय छात्र संसद युवा नेता का निर्माण यही है मकसद (1)

युवाओ, हो तुम इस देश का भविष्य  
देश की उन्नती है अपना लक्ष्य  
जनतंत्र से प्रेरणा लेकर  
बनना है उज्ज्वल सांसद  
भारतीय छात्र संसद  
युवा नेताओ का निर्माण यही है मकसद (2)

भ्रष्टाचार आतंकवाद का करना है खात्मा  
युवाओ उठो, हो तुम इस देश की आत्मा  
क्रांती लायेगी अब हर एक चिंगारी  
कंधो पर है तुम्हारे भारत वर्ष की जिम्मेदारी  
अब यही है भावना पहचानी हर एक युवा तक,  
भारतीय छात्र संसद  
युवा नेताओ का निर्माण यही है मकसद (3)

देना है आज खुद को एक वचन  
नहीं बिखरने देंगे यह शांती का चमन  
शपथ लो राजनीति में बेझिझक आर्येंगे  
उज्ज्वल संपन्न भारत वर्ष बनायेंगे  
नवयुवक ही लायेंगे विकास की आँधी,  
तुम में है छुपा कल का नेहरू और गांधी  
उठो लेकर नये विचार और चेतना  
नये भारत को सुबह का सूरज है देखना  
युवा शक्ति ही देंगी नये भारत का दस्तक

भारतीय छात्र संसद  
युवा नेताओ का निर्माण यही है मकसद (4)

- प्रा. डॉ. चंद्रशेखर बोबाडे

स्कूल ऑफ हेल्थ सायन्सेस अंड टेक्नॉलॉजी  
एम-आयटी पुणे



## *The Heartbeat of MIT-WPU*



*Dear Readers,*

*As we conclude this Jan–Feb edition, “Celebrating Passion, Performance & Progress,” we look back with gratitude on a journey filled with energy, achievements, and shared purpose. Each story and milestone featured here reflects the spirit of resilience, innovation, and togetherness that defines the MIT World Peace University community.*

*The start of a new year marks a time of fresh beginnings and renewed focus. We hope this edition inspires you to embrace change, spark new ideas, and contribute to the positive transformation around you. As we move ahead, let us continue to champion the values of peace, harmony, and sustainability that form the foundation of MIT-WPU.*

*Thank you for being an integral part of this journey. Together, we will continue to explore new possibilities, create meaningful impact, and empower each other to achieve greater heights.*

*Wishing you a year filled with growth, discovery, and success.*

*Warm regards,  
Team Pulse*