

# PAVE PULSE

Perspectives, Advancements &  
Visionary Explorations in Civil Engineering

(2023-24)



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**TULSIRAMJI GAIKWAD-PATIL**  
**College of Engineering & Technology**

Approved by AICTE, New Delhi and Govt. of Maharashtra | An ISO 9001:2015 Certified Institution  
Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur



— AN AUTONOMOUS INSTITUTE —

## **Vision of the Institute**

To emerge as a learning Center of Excellence in the National Ethos in domains of Science, Technology and Management.

## **Mission of the Institute**

To strive for rearing standard and stature of the students by practicing high standards of professional ethics, transparency and accountability.

To provide facilities and services to meet the challenges of Industry and Society.

To facilitate socially responsive research, innovation and entrepreneurship.

To ascertain holistic development of the students and staff members by inculcating knowledge and profession as work practices.

## **Vision of the Department**

To forge learning Center of Excellence in the field of Civil Engineering.

## **Mission of the Department**

To promote academic and ethical development while upholding high standards.

To provide advance facilities with the skills needed to face Industry and societal challenges.

To promote socially responsible research, innovation, and entrepreneurship in the field of Civil Engineering.

To foster the holistic development of both students and faculty members by inculcating a blend of knowledge and professional work methods for overall progress.



## PEO's

Graduates will be able to

**PEO1** : Analyse and design civil engineering structures while keeping social awareness and ethical responsibilities in mind.

**PEO2** : Demonstrate leadership abilities in supporting sustainable practices in Civil Engineering.

**PEO3** : Exhibit a commitment to lifelong learning, staying updated on developing technologies and industry trends, and adjusting to the evolving world of Civil Engineering.

**PEO4** : Executing Proficiency in creative problem-solving and innovation, demonstrating an entrepreneurial attitude within the context of Civil Engineering.

## PSO's

Graduates will be able to

**PSO 1:** Competency to manage large infrastructure projects while providing safe and cost-effective project execution, along with expertise of rapid construction and project management.

**PSO 2:** Plan, execute, manage, maintain and rehabilitate civil engineering systems and processes.

**PSO 3:** Apply innovative construction and management techniques to compete with modern structural design and construction within the budget and time frame.



## PO's

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



Tulsiramji Gaikwad-Patil College of Engineering and Technology (TGPCET) was established in the year 2007 by Vidarbha Bahu-uddeshiya Shikshan Sanstha (VBSS), a registered society. It is a self financed Private Engineering College, which is affiliated to Rashtrasant Tukadoji Maharaj Nagpur University (RTMNU) Nagpur and is approved by All India Council for Technical Education, New Delhi. Also college is approved by Directorate of Technical Education (DTE), Mumbai, Maharashtra State. The Institute is Accredited with A+ (3.32 CGPA) by NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL (NAAC). An Autonomous Institute affiliated to RTM Nagpur University, Nagpur.

The College offers four years UG programs in Nine disciplines of engineering viz. Bio-Technology (B.Tech), Aeronautical Engineering (AE), Computer Science and Engineering (CSE), Information Technology (IT), Electronics and Communication Engineering (ECE), Mechanical Engineering (ME), Civil Engineering (CE), Electrical Engineering (EE) Computer Science and Engineering (Data Science).

TGPCET offers Eight PG programs in engineering viz. Computer Science and Engineering (CSE), Integrated Power System (IPS), Structural Engineering (SE), Electronics and Communication Engineering (ECE), Artificial Intelligence, Machine Learning (AIML) & Mechanical Engineering design (MED), Aeronautical Engineering (AERO) and Electric Vehicle (EVT) and also offers Two years PG programs in Master of Business Administration (MBA) as well as Two years Master in Computer Application (MCA).

In addition TGPCET conducts three years Diploma programs in six disciplines of engineering such as Civil Engineering (CE), Mechanical Engineering (ME), Computer Science and Engineering (CSE) and Electrical Engineering (EE), Electronics and Communication Engineering (ECE) and Information Technology (IT).

College is located in the midst of Multimodal International Cargo Hub and Airport (MIHAN) and also in the vicinity of Butibori Industrial area, Nagpur.

This sanstha is started by the dedicated and renowned academicians genuinely committed to impart quality technical education to the students, who are aspiring for carrier in Engineering, Technology and Management.

College offers additional courses beyond syllabus to expose the students towards the industrial climate by conducting courses in C++ with PYTHON, C#.NET, Java, Oracle-SQL and Administration, CCNA, PLC SCADA, MATLAB, AUTOCAD, STAAD PRO, CREO, PHP.

The college has signed MoU with Charusat University, Gujrat Dr. Panjabrao Deshmukh Krishi Vidyapeeth (PDKV), Akola and Vignan's University, Guntur to excel the academic and research capability of staff and students in the emerging fields of Science, Engineering and Agriculture.





TGPCET develops the attitude towards equality, fraternity, liberty, justice and respect for all sections of society. TGPCET grows students in the domain of latest scientific and technological areas by introducing ATME, USA, ROBOTICS and embedded programs for enhancing inter disciplinary research fields.

College has continuously risen in popularity amongst the aspiring students and parents and has become a preferred choice for taking admissions due to availability of elegant and vast infrastructure facilities, dedicated staff members, who provides holistic quality education.

The college is guided by its Advisory Committee consisting of Eminent Academician from Prestigious Institutes and also by the Renowned Industrialists. The institute works towards excellence in imparting quality technical education by motivating students to become a trend-setter to acquire Global leadership. For implementing the quality policy, an action plan is collectively prepared by the Principal and HoDs as per the vision of the Management and the Management regularly interacts with the Principal to review the implementation process of the quality plans.

ABP News had honored with an Award to TGPCET as "An Outstanding Institute (West)" in the year 2015. It also got feather in the cap in Academics by getting an Award from Big Research as "A Most Promising Engineering College" in the Vidarbha Region of Maharashtra in the year 2012.





## About Department

Department of Civil Engineering was established in 2009 with a degree course in Civil Engineering with an intake of 60 students for graduate course & later on intake of 30 students for Post graduation in Structural Engineering and 60 students for Diploma in civil Engineering. Civil Engineering is considered as one of the oldest engineering disciplines. Civil Engineering involves planning, designing and executing structural works. The profession deals with a wide variety of engineering tasks including designing, supervision and constructional activities of public works like roads, bridges, tunnels, buildings, airports, dams, water works, sewage systems, ports etc. and offers a multitude of challenging career opportunities. The Department is dedicated to consultancy, educational research, and an exposure of students to the trends of development in the field of Planning, Designing & Execution to meet the needs of the construction industry, consultancies and research organizations in India and abroad. The department of Civil Engineering in TGPCET possesses a faculty team of experienced & well-qualified professors, well acquainted with deep subject knowledge, commitment to disseminate quality & value-based education in technical subjects. All faculties work hard on student to meet the requirement of market and groom the student to be job friendly.

## Way of Learning:

Beyond the regular academic classes and activities, the department also is active in: -

1. Class room demonstrations, videos, LCD presentations of their course modules and latest trends in civil engineering supplement the curriculum.
2. A wide Scope for research & development is encouraged to provide better employment opportunities.
3. IEI student's chapter is installed through which lectures of eminent engineers, workshops, seminars and short term training programs are organized. IEI also provides funds for the research activities.
4. Field visits are arranged for the early exposure to industries for students.

## Major Groups / Areas:

1. Structural Engineering.
2. Computer Aided Analysis and Design.
3. Concrete Technology.
4. Surveying.
5. Project feasibility.

## Expertise in Research and Consultancy:

1. Analysis and Design of Structures.
2. Testing of Concrete, Building materials and Metals.
3. Concrete Composites, Mix Design etc.





**Dear Esteemed Readers,**

It is with great pleasure and pride that I extend my warmest greetings to you through the pages of this esteemed technical magazine. As the Head of the Civil Engineering Department, I am thrilled to share some of the extraordinary accomplishments that our department has achieved over the past year.

Our commitment to excellence in education and research is reflected in the numerous accolades earned by both our students and faculty members. One noteworthy achievement is the successful completion of NPTEL (National Programme on Technology Enhanced Learning) courses by a significant number of our students. This accomplishment not only showcases the dedication of our students but also speaks volumes about the quality of education and resources provided by our department.

In addition to individual successes, our department takes pride in securing copyrights for innovative research and projects undertaken by our faculty members. These copyrights not only validate the uniqueness of our contributions but also pave the way for further advancements in the field of civil engineering.

I am delighted to announce that our department has consistently produced university toppers, exemplifying the academic prowess of our students. This is a testament to the high standards we maintain in our teaching methodologies, as well as the continuous support provided to our students to help them excel in their academic pursuits.

Furthermore, our faculty members have actively engaged in cutting-edge research, contributing significantly to the body of knowledge in civil engineering. Their research endeavors have not only garnered attention within our academic community but have also made a valuable impact on the wider field.

As we celebrate these achievements, it is important to recognize that they would not have been possible without the collective efforts of our dedicated students, passionate faculty members, and the unwavering support from the institute administration and management.

Looking ahead, we remain committed to fostering an environment of innovation, excellence, and continuous learning within our department. We are determined to build on our successes and overcome new challenges, with the ultimate goal of contributing meaningfully to the advancement of civil engineering.

I extend my heartfelt gratitude to everyone who has been a part of this incredible journey, and I invite you to delve into the pages of this magazine to explore the depth of our achievements and the promising future that lies ahead.

Warm regards,

**Dr. Snehal Abhyankar**

Head of the Civil Engineering Department

Tulsiramji Gaikwad Patil College of Engineering and Technology, Nagpur



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9.	Faculty achievements (Swayam – NPTEL)
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## "Portable Grey Water Treatment Plant for Residential Buildings"

Shital Punde, Dhanshree Lautre, Priyanka Meshram, Rohit Dey, Ashish Sangodkar,  
Dikshay Patle, Prof. Divyani Harpal, Dr. Snehal Abhyankar

### ABSTRACT

The global demand for water is rapidly increasing, leading to severe water shortages in many regions around the world. The increasing demand for freshwater in residential, industrial, and agricultural sectors is straining our water resources. An essential approach to mitigating this problem is through the treat and reuse of wastewater. One particular area of interest is grey water, which is household wastewater that comes from sources such as washing machines, dishwashers, kitchen sinks, showers, and bathtubs.

**Keywords:** Water demand, water shortage, greywater reuse.

### CONCLUSION

Utilizing greywater serves as a vital alternative to reduce the consumption of potable water in various building types. The analysis reveals significant variations in both the quality and quantity of greywater, largely influenced by the selected treatment system. Furthermore, the review emphasizes that properly treated recycled greywater generally does not present health risks associated with heavy metals and organic micro-contaminants. The results illustrate that embracing water-efficient systems brings environmental advantages, resulting in considerable water conservation and reduced wastewater. Additionally, this approach has a minimal environmental impact, attributed to decreased energy consumption throughout its life cycle.





## "Experimental Investigation of Mechanical Properties of Concrete by Adopting Bubble Deck Technology"

Vaishnavi Kamde, Sanket Nagulwar, Shrikrushna Shirgawar, Akash Shirgawar, Amit Dhodare, Vipin Sahare, Prof. Mohitsingh Katoch, Prof. Sanjay Bhadke

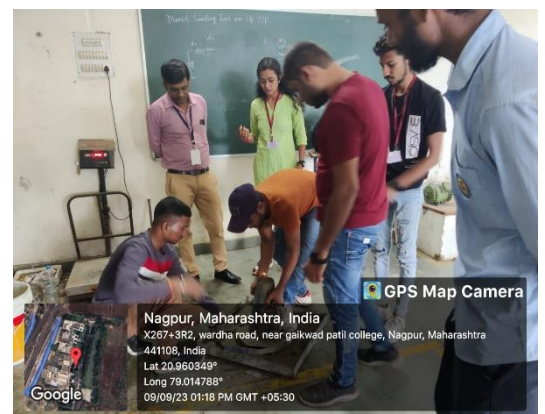
### ABSTRACT

In this Project we are proposing this study to investigate the mechanical properties of concrete by adopting bubble deck technology. Modern buildings are the most crucial structural component of a concrete structure. Most frequently, horizontal concrete reinforcing structures join floors, ceilings, and pavement outside. This study aims to assess and examine the mechanical properties of concrete by adopting Bubble Deck technology. The research methodology combines numerical calculations and experimental testing. The findings of this study will help us to understand the durability and the performance of concrete structures by adopting Bubble Deck technology.

**Keywords:** Bubble deck technology, durability, performance.

### CONCLUSION

A variation of 1.94% is present in cubes sized 150X150X150mm that were cast for a compressive strength test. Without significantly compromising compressive strength, the bubble-filled cubes weigh 1.94% less than conventional. While constructing the conventional column specimen and column specimen with bubbles we found out that we saved 3.7% of concrete by using bubbles in construction as compared to conventional. In this project, it is concluded that while casting the column specimen with bubbles, the cost of construction is Rs. 0.4 less than the conventional column specimen, and the size of the column specimen is very small, i.e., 150x300mm. If this technology is practiced on the site, it will make construction much more economical.



## Student Corner: Best Student Projects (2023-24)

Sr. No.	Name of Project Group Leader	Group Members Name	Guide Name	Title of Project	Remark
1	Shital Punde	1. Dhanshree Lautre 2. Priyanka Meshram 3. Rohit Dey 4. Ashish Sangodkar 5. Dikshay Patle	Prof. Divyani Harpal Dr. Snehal Abyankar	Portable Grey Water Treatment Plant for Residential Buildings	Social
2	Vaishnavi Kamde	1. Sanket Nagulwar 2. Shrikrushna Shirgawar 3. Akash Shirgawar 4. Amit Dhodare 5. Vipin Sahare	Prof. Mohitsingh Katoch Prof. Sanjay Bhadke	Experimental Investigation of Mechanical Properties of Concrete by Adopting Bubble Deck Technology	Research
3	Anadi Haldar	1. Rina Mohurle 2. Divya Kaushal 3. Jayesh Tembhare 4. Akash Bachar 5. Sajal Rokade	Dr. Aasif M. Baig Dr. Amey Khedikar	Effect of C&D Waste as coarse aggregate and Coconut shell as fine aggregate in Concrete	Economical
4	Aniket Dhawale	1. Pranav Pathrabe 2. Rohan Thawkar 3. Abhay Kathane 4. Pankaj Chavhan 5. Tejas Wasnik	Prof. Sanjay Bhadke Dr. Sandeep Gaikwad	Implementation of Precast Pervious Concrete for the Design of Smart Pavement	Innovative
5	Abhay Nannaware	1. Girish Khadatkar 2. Ashish Undirwade 3. Vaibhav Nirgude 4. Jatipriyo Sarkar 5. Isha Amode	Prof. Divyani Harpal Prof. Girish Sawai	To improve physical properties of soil by using Mining Waste Material	Social



## Durability Analysis and Cost Efficiency of RCC Beams using Conventional Concrete versus Bubble Deck Technique: A Statistical Investigation

Sanjay Bhadke and Tushar Shende

### Abstract

A crucial tectonic component in the building of houses and other structures are beams. The structural dead load is substantially reduced by virtually removing the non-structural concrete from the beam's core. A bubble beam is one in which various sized and shaped spheres are used in place of the beam's core. There are benefits to factory-made materials and components, regulated environments, on and off-site finishing, hollow Bubble Deck technology, and regulated settings. Numerous advantages are offered, such as reduced total expenses, reduced material usage, enhanced structural effectiveness, expedited building, and eco-friendliness. Instead of using concrete, the midsection of the beam in this project is constructed from high density polyethylene balls the content that appears most regularly.

**Keywords:** Bubble Beam Technology, High Density Polyethylene Balls, Hollow Bubble Deck, Structural Effectiveness, Material Reduction. Eco- friendly Construction

### Conclusion

The research shows that the compression strengths of bubble deck and regular concrete cubes are about the same. This means that the new bubble deck method doesn't weaken the concrete's main strength. Furthermore, it was discovered that the bending strengths of conventional beams and bubble deck beams are the same. This suggests that bubble deck technology can be used instead of traditional ways without affecting the strength of the structure. Notably, using bubble deck technology cuts down on the amount of material needed by a large amount. For example, using bubble deck technology to pour concrete uses about 19% less material than using traditional methods. This decrease also leads to a 19% drop in self-weight, which makes the building process more efficient and long-lasting. A cost study also shows that bubble deck technology can save up to 9% on costs compared to traditional building methods, which makes it an option that can be afforded. The study also discovers that concrete strength can be replaced in a 1:5 ratio with little loss in strength. This gives people more choices in materials and could lead to even lower costs. It was also found that the split tensile strength of bubble columns is almost the same as that of regular columns. This proves that the bubble deck method is strong and reliable. More study needs to be done to solve the remaining problems and restrictions of bubble deck technology. For example, the design and execution methods should be made better, and the technology should be tested in a variety of environments.



To prove that bubble deck technology works and lasts, future studies could include a lot of testing in the lab, long-term case studies, and real-world uses in a variety of regions. In the end, bubble deck technology's success and wide use will rest on how well it works technologically, economically, and commercially. Innovation and study in this area will need to keep going in order to get around the problems that are currently occurring and open up new opportunities for environment friendly and cost-effective building methods.





## Research corner: Faculty Publications (2023-24)

Sr. No.	Name of the Faculty	Title of Paper	Volume / Issue ISSN/ISBN/ DOI	Details of Journal	Indexing (Web of Science/ Scopus/ UGC Care/ Peer Reviewed)/ Year
1	Dr. Amey Khedikar	A Review of "Effect on Behaviour of Structure with types of opening at multiple locations with variation in the size of the shear wall"	ISSN No.2454-1958	Tech-Chronical (An International E-journals on emerging trends in science technology and management	Peer Reviewed
2	Dr. Amey Khedikar	Seismic response reduction of R.C. structures using multiple types of bracing framework.	ISSN No.2454-1958	Tech-Chronical (An International E-journals on emerging trends in science technology and management	Peer Reviewed
3	Dr. Aasif Baig	Investigation of charcoal as a filter material in water treatment	e-ISSN: 2582-5208	International Research Journal Of Modernization in Engineering Technology and Science	Peer-Reviewed, Open Access, Fully Refereed International Journal)
4	Dr. Aasif Baig	Analysis of Vulnerary aspect of R.C Structure under shock wave condition: A Review	e-ISSN: 2582-5208	International Research Journal Of Modernization in Engineering Technology and Science	Peer-Reviewed, Open Access, Fully Refereed International Journal)
5	Dr Snehal Abhyankar	Investigation of charcoal as a filter material in water treatment	ISSN No.2454-1958	Tech-Chronical (An International E-journals on emerging trends in science technology and management	Reviewed, Open Access, Fully Refereed International Journal)



6	Mr. Sanjay Bhadke	A review, comparative study of even and uneven story height of high-rise structure by using time history analysis	ISSN No.2454-1958	Tech-Chronical (An International E-journals on emerging trends in science technology and management	Peer Reviewed
7	Mrs. Priyanka Petkar	An examination of the seismic response of a retrofitted multistoried building using infill bracing and shear wall in soft storey	ISSN No.2454-1958	Tech-Chronical (An International E-journals on emerging trends in science technology and management	Peer Reviewed
8	Ms. Divyani Harpal	An examination of the analysis and research of the factors influencing the design of prefabricated buildings.	e-ISSN: 2582-5208	International Research Journal Of Modernization in Engineering Technology and Science	Peer Reviewed
9	Dr. Aasif Baig	RC Structural Elements' Reactions to Blast Loads A Current Review	ISSN No :0971-3034	The Indian Journal of Technical Education UGC	May 2024
10	Dr. Aasif Baig	Assessment of Systemic Seismic Vulnerability and Risk in Urban Infrastructure and Utility Systems: A Review	ISSN No :0971-3034	The Indian Journal of Technical Education UGC	May 2024
11	Dr. Aasif Baig	Review of the Sustainable use of Industrial Waste to Replace the Fine Aggregate used to Prepare Concrete	ISSN No :0971-3034	The Indian Journal of Technical Education UGC	May 2024
12	Dr. Sandeep Gaikwad	Analysis and Design of Composite Bridge and their Design Criteria	ISSN No :0971-3034	The Indian Journal of Technical Education UGC	May 2024
13	Dr. Amey Khedikar	RC Structural Elements' Reactions to Blast Loads: A Current Review	ISSN No :0971-3034	The Indian Journal of Technical Education UGC	May 2024
14	Dr. Amey Khedikar	Seismic Analysis of Elevated Circular Water Tank with Different Sections and Orientation of the Column	ISSN No :0971-3034	The Indian Journal of Technical Education UGC	May 2024
15	Prof. Sanjay Bhadke	An Examination of the Analysis and Research of the Factors Influencing the Design of Prefabricated Buildings	ISSN No :0971-3034	The Indian Journal of Technical Education UGC	May 2024
16	Prof. Sanjay Bhadke	Correlation between Ultra Sonic Plus Velocity Test and Rebound Hammer	ISSN No :0971-3034	The Indian Journal of Technical Education UGC	May 2024



17	Prof. Sanjay Bhadke	Experimental Investigation of Mechanical Properties of Concrete by Adopting Bubble Deck Technology	ISSN No :0971-3034	The Indian Journal of Technical Education UGC	May 2024
18	Prof. Divyani Harpal	Seismic Analysis of Regular & Vertical Geometric Irregular RCC Framed Building	ISSN No: 0971-3034	The Indian Journal of Technical Education UGC	May 2024
19	Prof. Divyani Harpal	Seismic Analysis of Building with and Without Shear Wall on Different Sloping Ground Angles for Zone Five	ISSN No :0971-3034	The Indian Journal of Technical Education UGC	May 2024
20	Prof. Mohitsingh Katoch	Application of Bubble Deck Technology for the Low Cost of Construction	ISSN No :0971-3034	The Indian Journal of Technical Education UGC	May 2024
21	Prof. Priyanka Petkar	Seismic Analysis of Elevated Circular Water Tank with Different Sections and Orientation of the Column	0971-3034	The Indian Journal of Technical Education UGC	May 2024
22	Dr. Aasif Baig	RC Structural Elements' Reactions to Blast Loads A Current Review	ISSN 2394-7780	International journal of advance & innovative research	March 2024
23	Dr. Aasif Baig	Analysis and Design of G+20 Multi storied building by changing orientation of column	ISSN 2394-7780	International journal of advance & innovative research	March 2024
24	Dr. Sandeep Gaikwad	Analysis and Design of Composite Bridge and their Design Criteria	ISSN 2394-7780	International journal of advance & innovative research	March 2024
25	Dr. Snehal Abhyankar	Wind effect on pyramidal roof Structures	ISSN No 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	May 2024
26	Prof. Sanjay Bhadke	Comparative study of RCC Structure Subjected to Temperature loading with different zones	ISSN No 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	May 2024
27	Dr. Aasif Baig	Analysis & Design of Tensegrity Walkway Bridge	ISSN No 2046-0430	International Journal of Transportation Science and Technology Scopus	May2024
28	Dr. Sandeep Gaikwad	Effect of Chloride attack on new construction by using NDT Technique for Effective Repair and Restoration	ISSN No 2148-2403	Educational Administration: Theory and Practice	June 2024



29	Dr. P. L. Naktode	A review on retrofitting of deteriorated with carbon wrapping & steel plate Jacketing	ISSN No 2147-6799	A review on retrofitting of deteriorated with carbon wrapping & steel plate Jacketing	June 2024
30	Prof. Divyani Harpal	Analysis and Design of Transmission Tower for different wind zones	ISSN No 2147-6799	Analysis and Design of Transmission Tower for different wind zones	June 2024
31	Dr. Amey Khedikar	Cable stayed bridge structural component design and dynamic model analysis	ISSN No 2147-6799	Cable stayed bridge structural component design and dynamic model analysis	May 2024
32	Prof. Sanjay Bhadke	Comparative analysis of circular Roof for swimming pool by cold formed and hot rolled steel sections.	ISSN No 1112-5209	Journal of Electrical Systems Scopus	May 2024
33	Dr. Aasif Baig	Experimental evaluation of concrete strength by partial replacement of HDPE & LDPE polymers with coarse aggregate.	ISSN No 2147-6799	International Journal of Intelligent Systems and Applications in Engineering (IJISAE) Scopus	June 2024
34	Prof. Priyanka Petkar	Comparative study on design and construction methodology of precast box type road under bridge by box pushing techniques using PTFE sheet	ISSN No 2147-6799	International Journal of Intelligent Systems and Applications in Engineering (IJISAE) Scopus	June 2024
35	Dr. Sandeep Gaikwad	Comparative study of Multi storey RCC Building Based on (Non- Linear) time history analysis and pushover analysis.	ISSN No 2148-2403	Educational Administration: Theory and Practice	June 2024
36	Prof. Mohitsingh Katoch	Comparative study of Multi storey RCC Building Based on (Non- Linear) time history analysis and pushover analysis	ISSN No 2148-2403	Educational Administration: Theory and Practice	June 2024
37	Prof. Priyanka Petkar	Dynamic analysis of high rise building with transfer floor.	ISSN No 2148-2403	Educational Administration: Theory and Practice	June 2024
38	Dr. Snehal Abhyankar	Dynamic analysis of high rise building with transfer floor.	ISSN No 2148-2403	Educational Administration: Theory and Practice	June 2024
39	Dr. Aasif Baig	Comprehensive study on design and construction methodology of precast Box-Type Minor Bridge	ISSN No 2321-9653	International Journal for Research in Applied Science and Engineering Technology (IJRASET) Scopus	May 2024





40	Dr. P. L. Naktode	Seismic assessment of RC frames infilled considering seismic orientation effect and classes of buildings	ISSN No 2185-3118	International Journal of Intelligent Engineering and Systems UGC	June 2024
41	Dr. Snehal Abhyankar	A review on steel concrete composite structures	ISSN No 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	June 2024
42	Dr. Amey Khedikar	Dynamic Model Analysis And Design Of Structural Components Of Cable Stayed Bridge	ISSN No 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	June 2024
43	Dr. Snehal Abhyankar	Wind Effects on Pyramidal Roof Structures	ISSN No 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	June 2024
44	Prof. Divyani Harpal	A Review On Transmission Tower For Different Conditions By Using Staad. Pro Software	ISSN No 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	June 2024
45	Prof. Divyani Harpal	A Review On Effect Of Blast Loading On Structure	ISSN No 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	June 2024
46	Prof. Mohitsingh Katoch	A Review On Effect Of Chloride Attack On New Construction By Using NDT Technique For Effective Repair And Restoration	ISSN No 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	June 2024
47	Dr. Sandeep Gaikwad	A Review On Effect Of Chloride Attack On New Construction By Using NDT Technique For Effective Repair And Restoration	ISSN No 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	June 2024
48	Dr. Amey Khedikar	A Review On Analysis And Design Of Railway Steel Bridge	ISSN No 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	June 2024
49	Dr. Aasif M Baig	Review Study On Tensegrity Walkway Bridge	ISSN No 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	June 2024
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52	Prof. Priyanka Petkar	A Review On Box Pushing Techniques And Its Analysis	ISSN No: 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	June 2024
53	Dr, Sandeep Gaikwad	A Review On Comparative Study Of Multi-Storey RCC Building Based on (Non-Linear) Time History Analysis And Pushover Analysis	ISSN No: 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	June 2024
54	Prof. Mohitsingh Katoch	A Review On Comparative Study Of Multi-Storey RCC Building Based on (Non-Linear) Time History Analysis And Pushover Analysis	ISSN No: 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	June 2024
55	Prof. Sanjay Bhadke,	A Review On Rail Structure Interaction Analysis Of Metro Bridge	ISSN No: 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	June 2024
56	Prof. Priyanka Pethkar	A Review Of High-Rise Building Seismic Behavior With Transfer Floor	ISSN No: 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	June 2024
57	Dr. Snehal Abhyankar	A Review Of High-Rise Building Seismic Behavior With Transfer Floor	ISSN No: 0970-2555	Indian Institution of Industrial Engineering: IIE UGC	June 2024



## Technical Events (Session 2023-24)

Sr. No.	Activity	Details of Activity	Resource Person/ Address and Contact Number	Date of Conduction	Percentage of Participants
1	World Nature Conservation Day -2023 Celebration (IWWA)	Monthly Lecture Series topic "Integrated Water Resources Management - Mapping and Analysing the Maharashtra's Most Critical Resources"	Er. Subhash Deshpande, Former Secretary & Executive Director, Water Resources Department, Maharashtra and Dr. Kalpana Bhole, Former Executive Engineer, MJP Nagpur	20.07.2023	51%
2	Site Visit	200 MLD Sewage Treatment Plant, Bhandewadi	Mr. Vinay Wadgaonkar, Er.Prashant Waghmare NMC Office Plant Manager, Bhandewadi Sewage Treatment plant, Nagpur (200 MLD)	14.08.2023	90%
3	Workshop	One Day Bamboo Workshop	Ar. Mahesh Mokha (Co - convener), Ar. Pradyumna Sahashrabhojane & Ar. Ashish Nagpurkar	18.08.2023	84%
4	Site Visit	CSIR-NEERI campus, Nagpur	Dr. K.V. George, Ms. Megha, Mr. Diwakar, Mr. Mohammad Danish	04.10.2023	93%
5	Site Visit	Commercial Building Construction Site	Mr. Md. Haris, Site Engineer	16.12.2023	95%



6	Site visit	Ambhora Bridge Kuhi (MH)	Mr. Sunil Shinde, General Manager	15.01.2024	93%
7	Site Visit	Vidharbh RMC Plant, Nagpur	Mr. Suraj Khamankar Quality incharge	17.02.2024	91%
8	Late Dr. P.R. Bhawe Memorial Lecture (IWWA)	Journey of Jal Tantra: Improving the Practice of Water Network design in India	Dr.Om Damani Professor (CSE), IIT Bombay	23.02.2024	53%
9	Guest lecture	Navigating the World of BIM	Mr. Mithilesh Kapse, Director, Level UP Structures, Nagpur	02.03.2024	88%
10	Alumni Guest lecture	Amalgamation of BIM in Structural Designing	Mr. Ganesh Khadse, Design Engineer	13.03.2024	90%
11	Guest lecture	Recent Advancements in Civil Construction Industry	Dr. Muralidhar Kamath, General Manager (Technical Services), Apple Chemie India (P) Ltd, Nagpur, Maharashtra	15.03.2024	93%
12	Guest lecture	Ground Improvement Techniques	Dr. Prasad P. Dahale Dept. of Civil Engg. Ramdeobaba College of Engineering, Nagpur	16.03.2024	93%
13	1-day Workshop to celebrate WORLD WATER DAY 2024 by IWWA (Nagpur)	Water Sustainability	Dr. KC Tayade, Dr. Pawan Labhshetwar, Dr. VA Mhaisalkar, Dr.Sanjoy Roy, Dr. Jayant, Dr. Rajesh Gupta	27.03.2024	53%





## Students' Participation/Achievements

Sr. No.	Name of Students	Activity details	Date	Organised by
1	Yogesh Chawade	ICTTSEM-2024	15.04.2023	Suryodaya College of Engineering, Nagpur
2	Pratik Ingole			
3	Adesh Pawar			
4	Sameer Gedam			
5	Ganesh Khadse	SMART - 2023	28.11.2023	Mauli Group of Institution's
6	Sameer Gattewar			
7	Sudhanshu Bujade			
8	Nikesh Lothe	ITSEMC-2023	23 to 25.11.2023	YCCE, NAGPUR
9	Sameer Gattewar	38 <sup>th</sup> NCMC	08 to 09.09.2023	VNIT, NAGPUR
10	Sonali Bhoyar			
11	Suhail Yousuf			
12	Sneha Kamde			
13	Nikesh Lothe			
14	Rucha Bhagat			
15	Nishant Tembhurne			
16	Omkar Pande	Workshop On Total Station (Reyan Engineer's & Land Surveyor)	13 to 15.07.2023	TGPCET, NAGPUR
17	Srushti Gondane			
18	Mahesh Naktode			
19	Diksha Turare			
20	Nandini Dhawale			
21	Juhi Ramteke			
22	Priyanshu Lanjewar			
23	Shyamsundar Panewar			
24	Dnyandip Wasekar			



25	Vikas Bagde	Workshop On Total Station (Reyan Engineer's & Land Surveyor)	13 to 15.07.2023	TGPCET, NAGPUR
26	Rohit Bisen			
27	Vaishnavi Burande			
28	Asutosh Wase			
29	Yash Yende			
30	Purushottam Fender			
31	Harish Bahekar			
32	Raunakl Sahare			
33	Samyak Bansod			
34	Mayur Barapatre			
35	Pranay Tekam			
36	Girish Khadatkar	IC-CISD-2024	22 to 23.03.2024	KDK College of Engineering, Nagpur
37	Ashish Undirwade			
38	Vaibhav Nirgude			
39	Jatipriyo Sarkar			
40	Anandi Haldar			
41	Rina Mohurle			
42	Divya Kaushal			
43	Jayesh Tembhare			
44	Akash Bachar			
45	Aniket Dhawale			
46	Rohan Thawkar			
47	Abhay Kathane			
48	Pankaj Chavhan			
49	Tejas Wasnik			
50	Adarsh Jondhale	International Research Journal of Modernization In Engineering Technology & Science	April 2024	IRJMETS
51	Sameer Dadmal			
52	Devendra Barathe			

53	Shital Pundey	IC-IKSAT-2K24	15 to 16.03.2024	TGPCET, NAGPUR
54	Dhanshree Lautre			
55	Priyanka Meshram			
56	Rohit Dey			
57	Aashish Sangodkar			
58	Dikshay Patle			
59	Anadi Haldar	IC-IKSAT-2K24	15 to 16.03.2024	TGPCET, NAGPUR
60	Rina Mohurle			
61	Divya Kaushal			
62	Jayesh Tembhare			
63	Akash Bachar			
64	Abhay Kathane	IC-IKSAT-2K24	15 to 16.03.2024	TGPCET, NAGPUR
65	Rohan Thawkart			
66	Pankaj Chavhan			
67	Tejas Wasnik			
68	Sameer Gedam	IC-IKSAT-2K24	15 to 16.03.2024	TGPCET, NAGPUR
69	Pratik Ingole			
70	Abhishek Thakare	IC-IKSAT-2K24	15 to 16.03.2024	TGPCET, NAGPUR
71	Mayur Rathod			
72	Nakul Kachore			
73	Rushikesh Dehankar			
74	Saurabh Rathod			
75	Abhishek Thakare	International Journal of Research & Analytical Review	18.04.2024	IJRAR
76	Mayur Rathod			
77	Nakul Kachore			
78	Rushikesh Dehankar			
79	Sandip Kumbhare	Workshop On "Research Methodology"	23 to 27.04.2024	TGPCET, NAGPUR
80	Kalyani Meshram			
81	Mayur Kumbhare			



## List of Outstanding Performers (Student) (2023-24)

Sr. No.	Name of Students	Details of Activity	Date	Organized by	Award/ Position
1	Vaishnavi Kamde	TECHRISE	23.04.2024	TGPCET, NAGPUR	1 <sup>st</sup> Position
2	Akash Shirgawar				
3	Shrikrushnsa Shirgawar				
4	Sanket Nagulwar				
5	Amit Dhodare				
6	Vipin Sahare				
7	Pranav Pathrabe	TECHRISE	23.04.2024	TGPCET, NAGPUR	2 <sup>nd</sup> Position
8	Pankaj Chavhan				
9	Rohan Thawakar				
10	Abhay Kathane				
11	Tejas Wasnik				



## Faculty Achievements

Sr. No.	Name of Staff Member	Title of Activity/Work Done	Date	Details of Activity
1	Dr. Amey Khedikar	Patent Published	04.06.2023	Patent design no. 387592-001 published on topic "Air Quality Detecting Smart Window Partition"
2	Dr. Aasif Baig	Delivered Expert Lecture	01 to 06.09.2023	Delivered a Lecture on topic Research Methodology at Mauli College of Engineering, Shegaon
3	Prof. Divyani Harpal, Prof. Priyanka Petkar, Prof. Nitesh Jibhkate	Copyright	23.01.2024	Copyright work titled "Bending Behavior of confined ferrocete cross beam" with Application/Diary Number L-145530/2024 published
4	Prof. Nitesh Jibhkate, Prof. Amol Barde, Dr.Suryakant Mahajan	Copyright	23.01.2024	Copyright work titled "Analysis and design of G20 Multistoried building with and without shear wall by changing orientation of column" with Application/Diary Number L-145530/2024 published
5	Prof. Divyani Harpal, Prof. Priyanka Petkar, Prof. Nitesh Jibhkate	Copyright	22.01.2024	Copyright work titled "Grey water treatment plant for residential building" with Application/Diary Number L-145683/2024 published
6	Dr. Amey Khedikar, Dr. Premanand Naktode, Ms. Vaishnavi Muraskar	Copyright	22.01.2024	Copyright work titled "Seismic damage assessment of low rise medium rise and high-rise reinforced concrete building using performance based seismic design approach" with Application/Diary Number L-145742/2024 published
7	Dr. Aasif Baig, Dr. Sandeep Gaikwad, Prof. Sanjay Bhadke	Copyright	22.01.2024	Copyright work titled "Conducting a taguchi design experiment can have the following steps" with Application/Diary Number L-146546/2024 published
8	Prof. Mohitsingh Katoch, Prof. Komal Meshram, Dr. Sandeep Gaikwad	Copyright	20.03.2024	Copyright work titled "Continental Drift Theory" with Application/Diary Number L-148216/2024 published



**MAULI**  
GROUP OF INSTITUTIONS  
College Of Engineering and Technology, Shegaon





**Day 4  
Session  
3rd**

**Resource Person**  
**Prof. Mirza Aasif Baig**  
Prof & HOD  
TGP College of Engineering & Technology, Nagpur

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**1st - 6th Sept, 2023  
(4 Sept)**



## Faculty Achievements (Swayam - NPTEL)

Sr. No.	Name of Staff Member	Title of Activity/Work Done	Date	Details of Activity
1	Prof. Mohitsingh Katoch	NPTEL Domain Certification	April 2024	Completed NPTEL Domain Certification in Environment domain of Civil Engineering
2	Dr. Aasif Baig	NPTEL Elite Certification	April 2024	Completed NPTEL course "NBA Accreditation and Teaching and learning in Engineering (NATE)" with Elite grade in April 2024
3	Dr. Snehal Abhyankar	NPTEL Elite Certification	April 2024	Completed NPTEL course "NBA Accreditation and Teaching and learning in Engineering (NATE)" with Elite grade in April 2024
4	Prof. Divyani Harpal	NPTEL Elite Certification	April 2024	Completed NPTEL course "NBA Accreditation and Teaching and learning in Engineering (NATE)" with Elite grade in April 2024
5	Prof. Mohitsingh Katoch	NPTEL Motivated Learner	Jul-Dec 2023	Received NPTEL Motivated Learner certificate in Civil Engineering for the session Jul-Dec 2023
6	Prof. Mohitsingh Katoch	NPTEL Discipline Star	Jul-Dec 2023	Received NPTEL Discipline Star certificate in Civil Engineering for the session Jul-Dec 2023



## Faculty Achievements

