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TECHNICAL NEWS LETTER

## IET Karmaveer Expo 2024


Inauguration function of IET Karmaveer Expo 2024

The Department of Electrical Engineering of K. K. Wagh Institute of Engineering Education and Research has organized the IET Karmaveer Expo 2024 on 5th and 6th April 2024. On 5th April 2024, the event was inaugurated with the hands of Hon. Shri. Dinesh Dalvi, General Manager at Koso India Pvt. Ltd., Nashik in the presence of Hon. Chairman Shri. Sameer Wagh, Dr. Shirish S. Sane and project evaluators Shri. Ravindra Wadikar, Owner ofElectromotives, Mrs. Manjiri Gholap, Graphite India Ltd., Nashik Shri. Mahadeo Salunke, General Manager, Mahindra and Mahindra, Shri. Sandip Karkhanis, AMT Skill Centre, Shri. Norbert Desouza, Retired General Manager, Mahindra and Mahindra, Shri. Sarvesh Sukhatme, Adjunct Faculty, Shri. Prasad Joshi, Assistant Professor and Photographer, Ms. Neha Singh, Sr. Manager, Customer Engagement, IET India, Dr. Prashant Kushare, Chairman IET Nashik Local Network and Dr. B. E. Kushare, Leading MEP Consultant, Certified Energy Auditor and Mentor of IET Karmaveer Expo. The prize distribution ceremony of the IET Karmaveer Expo 2024 was conducted on the next day (06th April 2024) at 4 PM. Hon. Mr. Mukund Bhat working as a Senior General Manager at BOSCH India< Nashik was the Chief Guest for the event.The Guest of Honour was Shri. Kaushal Bhagat, Deputy General Manager, L&T Electric and Automation (a part of Schneider Electric). All Guests, Principal Dr. K. N. Nandurkar and Dr. B. E. Kushare distributed the prizes. Prof. Dr. Ravindra Munje and Prof. Dr. Sharad Dhamal coordinated the entire program. Hon. Shri. Sameer Wagh, Chairman of K. K. Wagh Education Society congratulated all the participants.

## Equinox 2024

Inauguration function of Equinox 2024

The event 'Equinox 2K24' was organized by the students of Department ofComputer Engineering, AIDS and CSD on 4th-5th April, 2024 in association with Debuggers' Club,CSI Students' Branch, Desoc Club and Phoenix Club. Total 7 Technical events, namely Treasure Hunt, Project Competition, Assemble Tech. workshop, Ethical Hacking Workshop, Web Battles, Paper Presentation, Pixel Perfect, Prompt Quest were organized. Total 772 students from all over colleges of

Nashik participated in the events. Ms. C. R.Patil, Ms. S. T. Patil, Dr. (Mrs.) Y. D. Bhise, Mr. Y. P. Bhandari, Ms. P. K. Shinde coordinated the event under the guidance of Prof. Dr. Shirish S. Sane.

## MECHEAVEN 2024

Inauguration function of MECHEAVEN 2K24

The Department of Mechanical Engineering of K. K. Wagh Institute of Engineering Education and Research has organized the MECHEAVEN2K24 on 4th and 5th April 2024. The event flyer, prize amount, and other details are given below. On 4th April 2024, the event was inaugurated at the hands of Mr. Chandrakant Khandavi Deputy Commissioner of Police in the presence of Mrs. Ishwari Tembhurnikar, Senior Associative Consultant, Infosys Ltd., Shri. Ajinkya Wagh (Director, Public Relations), Academic Dean Dr. Sunil Kute, HoD Mechanical Engineering Department. While guiding the students Mr. Chandrakant Khandavi Deputy Commissioner of Police said that youngsters should focus on engineering application and real life problems. Prof. Dr. P. B. Kushare provided brief information about the program. After the official ribbon cutting the inauguration was done and the project exhibition was opened for all the visitors.

## TELEKINESIS 2024

On 4th April, 2024, a colorful and memorable Telekinesis 2024 Technical Event by Department of Electronics & Telecommunication was organized in Karmaveer Kakasaheb Wagh Institute of Engineering Education & Research. This event is fully organized by the Students of E & TC department for entire K. K. Wagh college students. The Telekinesis Event aimed to foster creativity, innovation, and technical prowess among the student community. The inauguration committee had started with Introduction and felicitation of chief guest, Mr. Prashant Pawar, who is founder of AADD Technologies Private Limited. After that there was an inauguration of all competitions in their respective labs by cutting the ribbon by Principal and guest. In this Telekinesis 2K24, there were five competitions:

1. Circuitize (Circuit competition) 2. Slide Safari (Presentation Competition) 3. Artistry in Motion (Poster Competition) 4. Code Carnival (Coding competition) 5. Fact Fusion (Quiz Competition)

The Telekinesis Event was a resounding success, thanks to the dedication and efforts of the organizers, participants, and faculty members involved. The event not only showcased the technical prowess of the students but also reinforced the college's commitment to nurturing talent and fostering innovation in the field of electronics and telecommunication.


Inauguration function of TELEKINESIS 2024

## ChemFest-2K24

Inauguration function of ChemFest2K24

The ChemFest-2K24 kicked off with an inspiring Inaugural Ceremony featuring Dr. V. G.

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Pangarkar, a distinguished speaker and Chief Guest. Dr. Pangarkar, a retired Professor and former Head of the Chemical Engineering Department at the Institute of Chemical Technology, Matunga, Mumbai, brought a wealth of expertise from both academia and industry. He shared valuable insights into emerging trends in chemical engineering, highlighting the significance of interdisciplinary collaboration. The event was graced by esteemed judges: Dr. P. S. Bhandare (HOD, Chemical, K. K. Wagh Polytechnic College, Nashik), Mr. Chetan Khairnar (Graphite India, Nashik), Dr. Sharda Patil (Professor, K. K. Wagh Arts and Science Senior College), and Er. Ishwar Wagh (Graphite India, Nashik). Additionally, Dr. V. S. Mane (HOD, Chemical Department, K.K.W.I.E.E.R.) and all faculty members were in attendance. Ms. Khushi Gupta and Ms. Gauri Verulkar skillfully anchored the event. Prof. Dr. Suyog Jain introduced the Chief Guest, while Prof. Dr. Yennam Rajesh, the Faculty Coordinator of Chemfest2K24, delivered the Inaugural address, setting an inspiring tone for the festival.

## ITiazza 24

Valedictory function of ITiazza 24

The Department of Information Technology hosted a two days National Level Technical Symposium,ITiazza'24, on 5th and 6th April, 2024.The Symposium comprised of Talent show, Student of Year and Gaming event. The symposium was inaugurated by the Mr. Sharad Nagare, Manager, Bank of Maharashtra, Nashik. Student of the Year was won by Shubham Roopnure (First Prize), Arya Patil (Consolation), Sham Adke (Consolation). Talent Show was won by Arya Ingale (First Prize), Sathe Swara and Vaishnav Samradni (Second Prize). Total 179 students from different institutes had participated in the various events of ITiazza-24. The chief guests for the valedictory function were Mr. Saroj Panda, Capgemini, Sweden, and Mr. Pratik Jain, Technical Manager, TCS, Pune. Both provided guidance to students regarding various IT opportunities in both India and abroad.

## ASCEND 2K24

The ASCEND 2K24 Technical Symposium, organized by the Department of MCA, is a platform for innovation and collaboration in the field of technology. This two-day event, scheduled on April 4th and 5th, 2024. The event aims to bring together students, academicians, and industry professionals to exchange knowledge, showcase their innovative ideas, and discuss the latest trends in the field of computer science and information technology. Participants had the opportunity to attend keynote speech by Mr. Shreyas Bramha, CEO, Nutshell, Nashik, and guidance by Dr. K. N. Nandurkar, Director, KKWIEER, Nashik. The symposium serves as a platform for networking and fostering collaborations among participants and volunteer, enabling them to gain valuable insights and work in a team. Around 350 students from various locations participated in this event. Prof. Mrs. P. G. Fegade and Prof. Ms. R. R. Patil coordinated this event under the guidance of Head of Department Prof. Dr. (Mrs.) V. C. Bagal. Mr. Akhil Ise and Mr. Tushar Shinde worked as a student coordinator for this event.

## Infinity 2024

The Department of Robotics and Automation of K. K. Wagh Institute of Engineering Education and Research has celebrated its annual event "Infinity-2024" on 5th and 6th April 2024. The event was inaugurated by Dr. S. S. Sane (Dean Administration and HOD Computer) and Dr. P. J. Pawar (HOD, Robotics and Automation). Various competitions including Robo race, chess master,

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code-a-thon, Tug of war, reel making etc. were organized in this event. More than 200 students from various institutes participated in these competitions. Trophies, cash prizes, and certificates were awarded to winners and runner up of each competition in the Prize distribution ceremony held on 6th April.

## Design Thinking and Idea Lab Workshop Exhibition cum Competition

Interaction with Students

Interaction with the students

The Department of Mechanical Engineering has organized a Project Exhibition Cum Competition for departmental S. Y. B. Tech. students under the courses "Design Thinking and Idea Lab Workshop" on Thursday, 4 April 2024. This Project exhibition was inaugurated at the hands of Director, Dr. K. N. Nandurkar, Head-IT Dr. P. D. Bhamare, and Head-Mechanical Dr. P. B. Kushare along with the Project Exhibition-Competition Coordinator Dr. A. S. Patil, Dr. V. K. Matsagar and Prof. S. S. Kale. The purpose of this activity was to explore the critical thinking, innovative idea generation skills of the students and its implementation with the help of various state-of-art facilities available in our institute's AICTE Idea Lab and Central Engineering Workshop. During the said activity total 18 groups and nearly 120 students from S. Y. B. Tech. participated and presented their various projects related to social, environmental, defense, upcoming technologies like autonomous vehicles, non-conventional energy usage, agricultural aspects etc. In these projects students have utilized the basic knowledge of Mechanical, Electronics and Electrical engineering for presenting their ideas in a product form. Along with it this activity was also helpful for the students in order to enhance their Leadership qualities, Individual work effectiveness, Project management skills, Lifelong learning experience, social and environmental quotient etc. The 2 excellent project groups were rewarded for their excellent performance during the project competition.

## Expert Lecture/Seminar/Courses/Workshop Organized:

- Computer Engineering Department organized Expert talk on the topic "Project Planning and Management" by Mr. Rishikesh Korde, Software Engineer, Druva Software, Pune on 19th April 2024. Expert Talk on "Data Science - Applications and Career Opportunities" by Mr. Saurabh Palde, Data Science Consultant on 20th April 2024. A mini project competition for the course "Data Science and Big Data Analytics Lab" by Prof. Sangale, Assistant Professor, K. K. Wagh Polytechnic, Nashik (Alumni) and Ms. Vrushali Nikam (Alumni) on 26th April 2024. Expert talk on the topic "Applications of Data Structures " by Ms. Dipti Kasliwal - team lead+developer in Capgemini for an FMCG client on 26th April 2024.
- Mechanical Engineering Department organized Expert lecture on C & R Technology by Mr. Satish Maniyar on 12/04/2024. Expert Lecture on Industrial Application of Computer Integrated Manufacturing of Mr. Satish Maniyar on 12/04/2024, Expert Lecture on Industrial Psychology & Organizational Behavior of Dr. Ms. Pratibha Chandak on 13/04/2024, Expert Lecture on Engg. design tool of Mr. Gokul Pawar on 13/04/2024.
- Electrical Engineering department organized Expert Lecture on "Beyond the Classroom: Real-world Perspectives on Project Management" by Mr. Sagar Diwane, Senior Executive, Project Management on 26/4/2024. Expert Lecture on "Industrial Application of PID Controller" by Mr. Umesh Jadhav, Entrepreneur and Partner in R L Solution on 30/4/2024.
- Dept. of Information Technology had organized a session on "Exploring Cutting-Edge Tools in Cyber Security: Safeguarding the Digital Frontier" Mr. Ashish R. Kavishwar, Founder and Director at Clavigerous Systems, Nashik on 29th April 2024.

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- The Department of MCA has organized an Expert Talk on "The field of UI/UX" on 2nd April 2024 for FYMCA students. Ms. Isha Tewani, Senior Associate UI/UX Designer, mPokket, Bangalore delivered the talk in an online mode. Expert Talk on "An Overview of Practical Aspects in Object-Oriented Programming" on 16th April 2024 from 4.00pm to 5.00pm. an expert session on "Graphics to Motion" on 22nd April 2024. Mr. Vishnuvaibhav Mishra, Centre Manager, Arena Animation Academy, Nashik and Ms. Madhavi Pagariya, Co-founder, Arena Animation Academy, Nashik were the chief guest for this session. Mr. Mishra focused on exploring the latest trends and techniques in graphics and motion design, providing valuable insights to the participants. "Expert Talk on SQL Server" on 19th April 2024. Mr. Pratik Zambare, Yardi Software's, Pune delivered the talk for FYMCA students. "Expert talk on AR VR and Game Development" on 29th April 2024. Mr. Swapnil Dhawan, Sr. Application Developer and Mr. Sachine Khare, Sr. Application Developer, Ultimate Internet Games, Nashik delivered the talk for the FYMCA students.
- Robotics and Automation Engineering Department organized An expert talk on "Recent Trends in Cloud Computing" by Mr. Siddharth Madabhavi, Product Specialist at ESDS, Nashik for Third year students of Artificial Intelligence & Data Science Engineering on 25/4/2024.

## Expert Lecture/Seminar/Courses/Workshop Attended:

- Computer Engineering Department Staff P. P. Vaidya has completed IET Volunteers - Safeguarding Training on 22nd April 2024.
- Chemical Engineering staff Prof. P. P. Joshi has completed 3-day offline UHV-I offline workshop - "AICTE Incorporating Universal Human Values in Education (An AICTE Initiative)" Organised by K. K. Wagh Polytechnic, Nashik from 04/04/2024 to 06/04/2024. Dr. Prashant Kumar has completed online masterclass on "Teaching GenZ using generative AI" organized by NIIT University, Jaipur on 13/04/2024.
- Information Technology Departmental staff Prof. Poonam Patil has successfully completed the requirement to be recognized as a PDRL Certified Drone Professional (PCDP). Prof. Nagama Kazzi has successfully completed online courses on "SQL Projects for Beginners" and "Mongodb tutorial" provided by Great Learning Academy. Prof. Nagama Kazzi has successfully completed Udemy course on "Java script framework 6 with Spring Boot 3 - Telusko"

## Other Achievements:

- Computer Engineering department HOD Prof. Dr. S. S. Sane invited as Guest of Honor for the State Level Event, "INNOFUSION SUMMIT" and a Resource Person for "Unleashing the Power of Autonomy: It's All About Quality Execution" for faculties at SNJB's Late Sau KBJ College of Engineering, Chandwad on 1st April 2024.
- Electrical Engineering Department staff Prof. S.K. Shinde was invited as resource person for a session on Power Distribution System organized by the SVERI's College of Engineering, Pandharpur. Prof. A.M. Shewale was invited as resource person for a session on Single Phase Induction motor and Heating, Welding organized by the SVERI's College of Engineering, Pandharpur.
- Information Technology Department staff Prof. Rupali Bora was invited as resource person for a session on "Data Management and Big Data Analytics in IoT" in two weeks Faculty Development Program titled "IoT and Ubiquitous Computing for emerging Technical Applications" organized by the Department of Information Technology, Army Institute of Technology, Pune on 18th April 2024.

## Training & Placement :

| Company Name | Department Name | Placed Students |
|---|---|---|
| Adani Group, Mumbai | Chemical Engineering | 04 |
| Aarti Pharmalabs, Tarapur | Chemical Engineering1 | 01 |

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| Sr. No. | Department | Registration Number | Diary No. publication | Title of the Copy rights work | Date of Issue | Applicants |
|---|---|---|---|---|---|---|
| 1 | Mechanical | SW-18058/ 2024 | 31586/2023 -CO/SW | Abstract complete-ness evaluator for research papers and projects | 08/01/ 2024 | Pankaj Beldar |
| 2 | Mechanical | SW-18323/ 2024 | 980/2024-CO/SW | Python based Industrial Visit Feedback Analysis & PO Attainment | 22/02/ 2024 | Pankaj Beldar |
| 3 | Mechanical | L-146636/ 2024 | 6492/2024-CO/L | Quad Design Report | 10/04/ 2024 | Pankaj Beldar |
| 4 | Mechanical | SW-18663/ 2024 | 1676/2024-CO/SW | Data Extractor Algorithm From Absract | 23/04/ 2024 | Pankaj Beldar |

## Patents by staff

| Sr.No. | Name of staff | Title | Design No. |
|---|---|---|---|
| 1 | Prof. Abhijit J. Pawar, Dr. Pravinchandra D. Dhake (Dept. of Civil Engineering | Void Former Mesh | 350457-001 |

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पेटेंट कार्यालय, भारत सरकार The Patent Office, Government Of India
डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

डिजाइन सं. / Design No. : 350457-001
तारीख / Date : 01/10/2021
पारस्परिकता तारीख / Reciprocity Date* :
देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो VOID FORMER MESH से संबंधित है, का पंजीकरण, श्रेणी 25-02 में 1.Abhijit Janardan Pawar 2. Dr Pravinchandra Damodar Dhake 3.Dr Yogesh Deoram Patil के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 25-02 in respect of the application of such design to VOID FORMER MESH in the name of 1.Abhijit Janardan Pawar 2. Dr Pravinchandra Damodar Dhake 3.Dr Yogesh Deoram Patil.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्यधीन प्रावधानों के अनुसरण में।
In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

Date of Issue : 04/01/2024

## Industrial Visit

| Sr. No. | Company Name | Department Name | Date |
|---|---|---|---|
| 1 | Janak Industires, Ambad, Nashik | Mechanical Engg | 29/04/2024 |
| 2 | Tanmay Industries, Ambad, Nashik | Mechanical Engg | 29/04/2024 |
| 3 | Kadava Sugar Factory | Mechanical Engg | 02/04/2024 |
| 4 | Popular Switchgears Pvt. Ltd.,Nashik | Electrical Engg | 22/04/2024 |
| 5 | PVN Transformers & Electricals Pvt. Ltd, Nashik | Electrical Engg | 22/04/2024 |
| 6 | Nash Robotics & Automation Pvt Ltd,Nashik | Electrical Engg | 26/04/2024 |
| 7 | 132 kV Mhasrul Substation | Electrical Engg | 27/04/2024 |
| 8 | Sumago Infotech, Nashik | Robotic & Automation Engg | 30/04/2024 |

## Congratulations !!

Ms. Unnati Bhadane final year E&TC student secured 1st rank and bagged the Gold Medal, Ms. Tejal Hire B.E. Civil Engineering secured 3rd rank while Ms. Tanuja Kaklij B.E. Computer secured 8th rank in all branches under Engineering in the Savitribai Phule Pune University exam held in May 2023. Following students obtained ranks in their respective departments under Engineering in the Savitribai Phule Pune University exam held in May 2023. Hon. Chairman, Principal, Deans, HOD and all staff members of the institute congratulated the students for their achievement.

| Rank | Name of Student | Branch | SGPA/CGPA |
|---|---|---|---|
| 2 | Hire Tejas Rakesh | Civil | 9.9 |
| 2 | Abhijeet Mahendra Gajare | Chemical | 9.7 |
| 3 | Kaklij Tanuja Baliram | Computer | 9.77 |
| 3 | Ghuge Ranjan Chandan | Chemical | 9.62 |
| 3 | Pimprikar Swara Markand | Production | 9.02 |
| 4 | Surana Pradip Sham | Mechanical | 9.7 |
| 4 | Sontakke Gauri Sunil | Production | 8.97 |
| 5 | Pardeshi GauravsinhSureshsinh | Mechanical | 9.67 |
| 5 | Marathe Prashant Ramchandra | Production | 8.9 |
| 6 | Patil Sakshi Vinod | Chemical | 9.47 |
| 7 | Baig Mohammed Kaif Rafique | Production | 8.8 |
| 8 | Bodke Shubham Dnyaneshwar | Chemical | 9.42 |
| 9 | Joshi Rutuja Vishnupant | Computer | 9.62 |
| 9 | Pawar Gauri Yuvraj | Computer | 9.62 |
| 9 | Sonawane Deepali Ramesh | Chemical | 9.4 |
| 9 | Tambe Tejas Shivaji | Chemical | 9.4 |
| 9 | Hetansha Ashok Boricha | Chemical | 9.4 |
| 9 | Jagtap Shivam Shrinivas | Production | 8.62 |
| 10 | Rahatal Vaishnavi Kiran | Civil | 9.57 |
| 10 | Priyanshu Patel | Chemical | 9.32 |
| 10 | Patil Sanskar Shivaji | Chemical9. | 32 |
| 10 | Rahane Samiksha Murlidhar | MCA | 9.03 |


## Congratulations !!


Computer Engineering Department Team Pyyoneers (ID SHW 12) comprising of team members Oceania Kshetrimayum (Computer Engineering), Harshal Patil (AI&DS), Kshitij

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Rathore and Vikas Sangale (IT) have participated in Sunhacks 2024 an International level Hackathon, and they have won a Consolation prize in the overall 4 domain on the competition, they were in the top 3 teams in their respective domain of Web development. Their Project titled Skill Swift is a website to filter out resumes with the help of AI ML models. The team was guided by Prof. Shweta Jadhav and Prof. Ms. Priya Rakibe.

- FYMCA students Ms. Neha Patil, Ms. Sayali Mahajan, Mr. Vedant Sathe, and Ms. Sakshi Darekar for securing a third prize in the INNIVISION 2K24 Techno-Manthan National level coding competition! This achievement in a national level coding competition highlights the exceptional talent and dedication of FYMCA students.

## Abstracts of papers presented during April 2024

### Autonomous Healthcare Systems: Deep Learning-Based IoT Solutions for Continuous Monitoring and Adaptive Treatment

Prof. Dr. G. B. Sambare, Harsha Avinash Bhute,Dr. Satish S Banait, Grishma Y. Bobhate, Ashfaq Amir Shaikh, Saurabh Bhattacharya

(Published inJournal of Electrical Systems (JES) (JES is indexed by Scopus and ISI Thomson Reuters))

**Abstract:** Autonomous healthcare systems are a big change in the way medicine is done. They use deep learning algorithms and Internet of Things (IoT) devices to keep an eye on patients all the time and change their treatment as needed. This new way of doing things could change the way patients are cared for by giving real-time information and personalized treatments. With the help of deep learning, these systems can look at huge amounts of data produced by IoT sensors, like those in medical implants and smart tech, to spot small changes in health and spot problems before they get worse. Autonomous healthcare systems are based on their ability to constantly gather and analyses data from a variety of sources, such as vital signs, biological markers, and patient-reported complaints. Deep learning algorithms are very important to this process because they can find complicated patterns and connections in the data. These algorithms can get useful information from raw sensor data by using methods like CNN, Mobile Net, and InceptionV3. This algorithm lets healthcare professionals move quickly and proactively. Also, independent healthcare systems are made to change based on the wants and interests of each patient by using personalized treatment plans. These systems can improve results and patient happiness by constantly checking how patients respond to actions and making changes to treatment plans on the fly. Adding IoT devices also makes it easier for patients and healthcare workers to talk to each other, allowing for distant discussions and quick solutions. The automated healthcare systems are a revolutionary way to provide medical care. They use deep learning-based IoT solutions to keep an eye on patients all the time and adjust their treatment as needed. These systems might be able to improve patient results, lower healthcare costs, and raise general quality of life by using the power of data-driven insights and individual actions.

**Keywords:** Autonomous healthcare systems, Deep learning, IoT solutions, Continuous monitoring, Adaptive treatment.

### Two-way flexural behavior of biaxial voided slab using cuboidal shape of void formers

Abhijit J. Pawar, Yogesh D. Patil, Gaurang R. Vesmawala , Pravinchandra D. Dhake , Jagruti S. Nikam (Published in the journal Structures).

**Abstract:** A biaxial voided slab is an innovative type of slab system developed recently, that has proven its excellence in terms of its structural, environmental, and economic benefits. In the present research, an experimental study was

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carried out to investigate the two-way flexural behavior of biaxial voided slab using the cuboidal shape of void formers. Two-way flexure test was performed over two voided slab specimens (VS-100 and VS-140) and one solid slab specimen using a new technique of sixteen-point loading. An innovative type of positioning reinforcement was used to fix the voids at their desired locations in voided slab. The ultimate load carrying capacity, deflection, flexural stiffness, and crack pattern were examined through experimental and theoretical investigations and compared the results with solid slab. Nonlinear finite element analysis was performed to validate the experimental results using ABAQUS software. Parametric study was undertaken to investigate the flexural performance of voided slab thoroughly; varying the factors like type of loading, positioning reinforcement, and grade of concrete. These investigations revealed that the voided slab with a cuboidal shape of void former exhibits classical flexural behavior which was same as that of a solid slab. Also, it was observed that yield line theory and the finite element model predicts the similar load-carrying capacity precisely enough with the experimental investigations. Parametric study revealed that prediction of ultimate load capacity of voided slab depends on type of loading, and with uniformly distributed loading predicting relatively higher load carrying capacity. Incorporating the proposed positioning reinforcement helps to improve the overall two-way flexural behavior of voided slab.

## Use of Bio-Coagulant for Removal of Turbidity

P. L. Pathak, Dr. P. D. Jadhao, Mohd. H. A. A., S. S. Suryawanshi

(Presented in The Indian Journal of Technical Education).

**Abstract:** Clean and safe drinking water is essential requirement for all types of livelihoods, but it remains a significant challenge in rural areas. Many rural communities depend on rivers and wells directly for their daily water needs, but these sources of water not met with required standards of good quality water. Many urban water resources also get contaminated due to Industrialization, Rapid urbanization and unregulated human activities. All these activities results contamination of water resources by changing different properties of water and significantly increases turbidity of water. In this study natural coagulants are used for removal of turbidity. Natural coagulants are made by fruit peels of Pomelo and Banana by grinding and sieving fruit peel powder in particle size of 300µ after oven drying at 100 ℃. This coagulant is added in different dosages such as 40mg/l, 50mg/l and 60mg/l. Among all dosage 50mg/l dose gives 90-95 percent turbidity removal efficiency without changing other properties of water much more.

## Verification of Technical Feasibility for Construction and Demolition Waste and RCA with Sustainability of SW Material for Flexible Pavement

Prof. P. L. Pathak, Dr. P. D. Jadhao, F.I.Chavan

(Published in the Indian Journal of Technical Education).

**Abstract:** The road construction using natural aggregate is a common phenomenon that leads to higher cost in construction and maintenance as availability of material is low and hence the gap between demand and supply is high. So it is necessary to find a better alternative without compromising on Strength. Day by day there is a huge scarcity of natural resources. Thus, it is necessary to alternate natural resources. This study verifies the technical viability of using C&D waste and RCA as material for flexible road pavement. The suitability of solid waste material is tested in flexible road pavement by conducting Geotechnical and Geo-environmental laboratory. Also, the field performance of new products C&D waste in the base and sub-base course is investigated. The utilization of these waste materials in road construction will be enhanced and higher economic returns are expected. Also, the concrete waste needs to be separated from the C&D waste at the initial stage rather than using a mixed proportion of C&D waste, as result interpretation of the C&D waste failed in the impact, Crushing and Abrasion test.

Prof. Dr. K. N. Nandurkar
PRINCIPAL