Mahindra University
Global Thinkers. Engaged Leaders.
ÉCOLE CENTRALE SCHOOL OF ENGINEERING

CIVIL ENGINEERING NEWSLETTER, 2022

Vol 2, Issue 2

CONTENTS

A Message *from the* HOD

It gives me immense joy to present you with the latest issue of the newsletter for the last six months. Over the past few months, the faculty has tirelessly put in the efforts to provide the students with the best quality education and have significantly contributed to consultancy, industry-sponsored projects and government sponsored research projects.

Our PhD program has been growing and now we have 20 PhD students in the department and their research work has been a motivating factor for keeping up the spirits. In the last few months, we have had one publication of patent and more than 20 publications in various national and international journals. Our students and faculty have been actively participating in various national and international level conferences.

I, as a head of the department, would like to thank all the faculty members, non-teaching staff, and students for their unwavering support and sincere efforts for the betterment and growth of the department. On this occasion, I congratulate editorial board's efforts for bringing up this issue in better condition. I am optimistically excited about the future possibilities of what we will achieve together in the coming years.

Please enjoy the information presented in the newsletter and feel free to send us your valuable feedback, comments, and suggestions. Collaboration and shared ideas are key to the success of all our future endeavours as we work together in creating a broader exposure, presence, alliances and success for Mahindra University, nationally and internationally.

Prabhakar Singh

Dr. Prabhakar Singh
Head of Department, Civil Engineering.

NEW FACULTY

Dr. Jayalakshmi S

Assistant Professor
Dept. of Civil Engineering

Dr. Jayalakshmi completed her PhD in Civil (Structural) Engineering, Indian Institute of Technology Madras, Chennai and worked as a Postdoctoral Research Scholar, Computational Earthquake Seismology, King Abdullah University of Science and Technology. She is deeply passionate about multidisciplinary research that involves the use of numerical and ML-based approaches to understand the cause and effect of earthquakes on building environment. Her overall research objective is to inform when and where earthquakes occur and predict ground shaking levels for seismic hazard assessment.

We congratulate

Dr. Hari Prasad Chennarapu
and **Dr. Mohd. Ataullah Khan**
on getting promoted as

ASSOCIATE PROFESSORS

Congrats!

Geotechnical Engineering Research Lab

ONGOING RESEARCH

Dr. C. Hariprasad
Associate Professor
Dept. of Civil Engineering

The Geotechnical research laboratory is well equipped with all necessary instruments to test the basic and advanced properties of material for various ongoing research projects.

Insights of field testing in the Mahindra University campus:

A wide range of construction operations, particularly those related to rigid and flexible pavements, sports fields (i.e., Football ground, Basketball court and Tennis court), backfilling of deep excavations in layers for multilevel parking and phase -III hostels and executive guest houses are undergoing on campus. The process of construction involves various stages, among them our focus was on the quality control and quality assessment (QC/QA) of compaction of materials used in these various works. We have used field instruments to monitor QC and collect the data to achieve objectives of our research. The following five instruments were used for testing are (i) Digital Static Cone Penetration (DSCP), (ii) Dynamic Cone Penetrometer (DCP), (iii) Lightweight Deflectometer (LWD), (iv) Falling Weight Deflectometer (FWD) and (v) Plate Load Test (PLT). These devices plays a vital role in checking the quality of road works, highway foundations, and base installations for sports field facilities (as mentioned above). Controlled (stabilized with geosynthetic materials) and uncontrolled (unstabilized) sections was constructed by selecting few test pads and carried out above tests. The outcome of experimental strength parameters will be directly or indirectly used as input parameters can be used for design of highways, railways, and buildings as per national and international standard specifications. Photograph shows the various equipment's used in the campus for various constructional activities.

PhD Scholars

Geotechnical Engineering Research Lab

ONGOING RESEARCH

Fig. 1. Mini vibratory roller for compacting soft compressible strata.

Fig. 2. Pictorial view of DSCPT on soft compressible strata.

Fig. 3. Pictorial view of DCPT on the compacted surface.

Fig. 4. Pictorial view of LWD test on uncontrolled section (unstabilized) in the field.

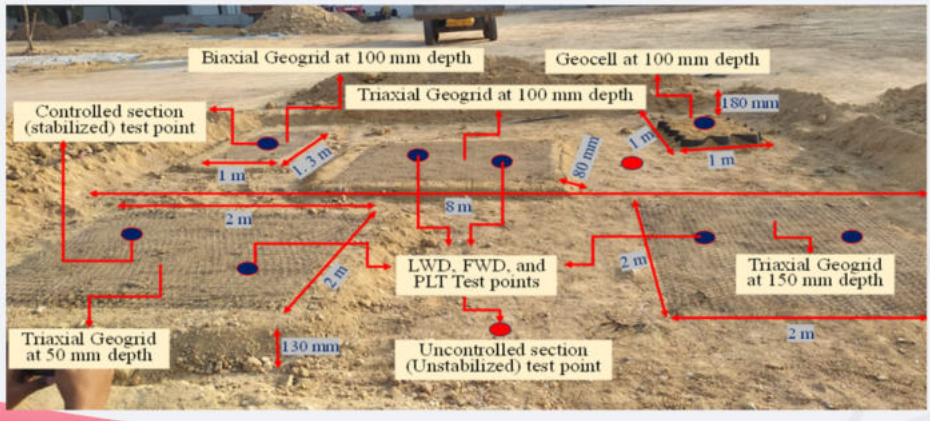


Fig. 5. Location of placement of geosynthetic materials (controlled section) in the field and test locations after back filling the soil.

Geotechnical Engineering Research Lab

ONGOING RESEARCH

Fig. 6. Unstabilized and geosynthetic stabilized sections

Fig. 7. Pictorial view of FWD-NDT device on controlled section in the field.

Fig. 8. MU Research Team with FWD operating Team.

Fig. 9. Pictorial view of PLT on controlled section (TX at 100 mm depth) in the field.

Research Spotlight

Stochastic modeling of functionally graded double-lap adhesive joints

AUTHORED BY

Dr. Mohd Ataullah Khan, R. Tipireddy, B. Dattaguru, S. Kumar

PUBLISHED IN

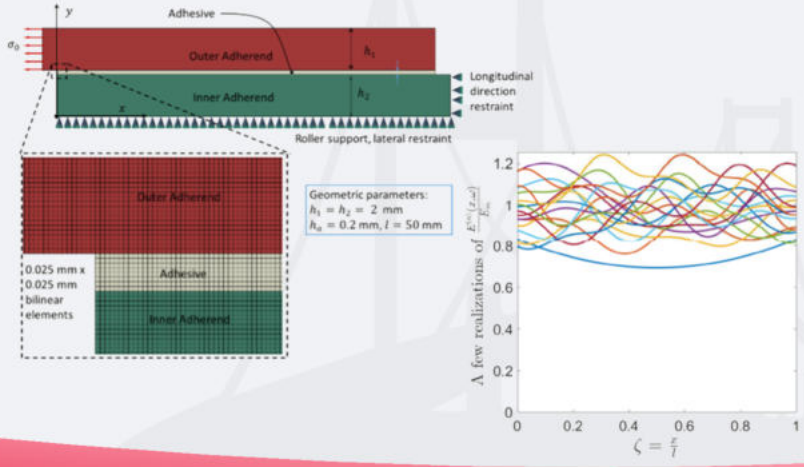
Mechanics of Materials, Impact Factor 4.1

COLLABORATING INSTITUTE

University of Glasgow, UK

Pacific NatWest National Laboratory, USA

Perturbation(s) in the adhesive's properties originating from the manufacturing, glue-line application method and in-service conditions, may lead to poor performance of bonded systems. Herein, the effect of such uncertainties on the adhesive stresses is analyzed via a probabilistic mechanics framework built on a continuum-based theoretical model. Firstly, a generic 2D plane stress/strain linear-elastic model for a composite double-lap joint with a functionally graded adhesive is proposed. The developed model is validated against the results obtained from an analogous finite element model for the cases of bonded joints with metal/composite adherends subjected to mechanical and thermal loadings. Subsequently, the proposed analytical model is reformulated in probabilistic mechanics framework where the elastic modulus of the adhesive is treated as a spatially varying stochastic field for the cases of homogeneous and graded adhesives. The former case represents stochastic nature of conventional joints with a homogeneous bondline while the latter case showcases the perturbation in the properties of functionally graded joints. To propagate the uncertainty in the elastic modulus to shear and peel stresses, we use a non-intrusive polynomial chaos approach. For a standard deviation in the elastic modulus, the proposed model is utilized to evaluate the spatial distribution of shear and peel stresses in the adhesive, together with probability and cumulative distribution functions of their peaks. A systematic parametric study is further carried out to evaluate the effect of varying mean value of the adhesive's Young's moduli, overlap lengths and adhesive thicknesses on the coefficient of variation/standard deviation in peak stresses due to the presence of a random moduli field. It was observed that the joints with stiffer adhesives and longer bondlengths show smaller coefficient of variation in peak stresses. The findings from this study underscore that the predictive capability of the proposed model would be useful for the stochastic design of adhesively bonded joints.



Research Spotlight



Embedded Piezo-Sensor-Based Automatic Performance Monitoring of Chloride-Induced Corrosion in Alkali-Activated Concrete

AUTHORED BY

Tushar Bansal, Visalakshi Talakokula, Sri Kalyana Rama Jyosyula, Romeu Vicente, and Guilherme Ascensão

PUBLISHED IN

Sustainability, 14(19), p.12917. (IF 3.89)

COLLABORATING INSTITUTE

University of Aveiro, Portugal

The primary goal of the construction industries worldwide is to improve material durability and achieve sustainability. In recent years of sustainable cement industry innovation, alkali-activated cement has emerged as one of the most promising alternatives to ordinary Portland cement (OPC). In terms of durability, corrosion of steel is a significant problem and has become a major cause of deterioration of reinforced concrete structures worldwide. Thus, structural health monitoring techniques are essential to monitor the corrosion in real-time to avoid unexpected failure since civil engineering structures serve as a crucial pillar of the economy. This paper presents through an experimental campaign a novel method of automatically monitoring the performance of alkali-activated concrete (AAC) and ordinary Portland cement concrete (OPCC) under chloride-induced corrosion conditions using an embedded piezo sensor (EPS) based on the electro-mechanical impedance (EMI) technique. AAC was produced using alkali silicate-activated fly ash and ground granulated blast furnace slag.

The accelerated corrosion tests were conducted on reinforced AAC and OPCC specimens in which the EPS was attached to reinforcing steel bars inside the specimens to monitor the changes in the EMI signature during the corrosion progression. To quantify the damage due to chloride-induced corrosion, statistical damage indices such as root mean square deviation were calculated. Further, the deterioration in structural parameters was identified by extracting the equivalent structural parameters (ESPs) such as stiffness, mass and damping from the raw EMI signatures. Based on qualitative and quantitative results, it can be seen that the changes in raw signature and damage in AAC were lower than OPCC. The deterioration in term of stiffness loss was found to be 39.35% in OPCC and 12.73% in AAC. Hence, it is demonstrated that the AAC exhibits a superior corrosion resistance to OPCC.

Research Spotlight

Zone-based TOD evaluation considering interdependences among criteria and zones.

AUTHORED BY

Lin, J., Lin, T., Kadali, B. R., & Subbarao, S. S. V.

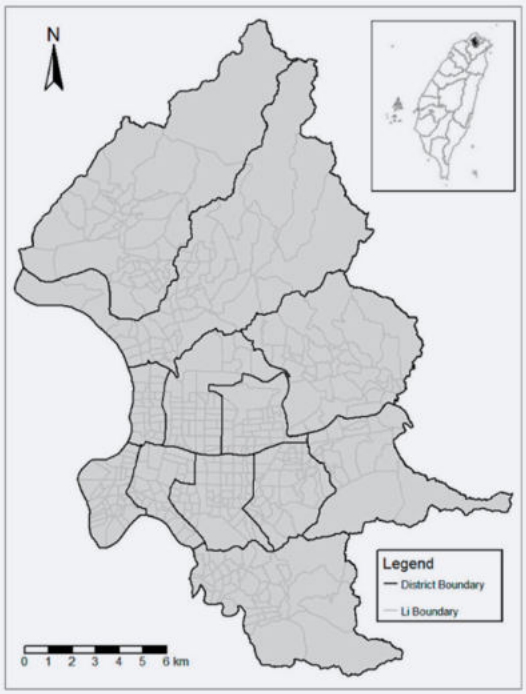
PUBLISHED IN

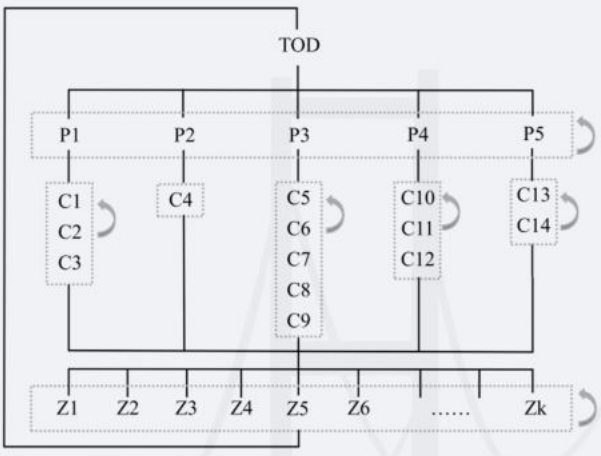
Transport Policy. (2023) (IF 6.17)
https://doi.org/10.1016/j.tranpol.2023.01.011

COLLABORATING INSTITUTE

National Taiwan University, Taiwan
NIT Warangal, India

This article presents a zone-based evaluation method to measure the level of transit-oriented development (TOD) within a zone. The method is an analytic network process (ANP) and contributes to the literature on TOD evaluation in dealing with the interdependencies among criteria and zones. The method was applied to the evaluation of 456 zones in Taipei City, Taiwan to confirm the method's applicability, verify the necessity of considering interdependences in TOD evaluation, and examine the validity of evaluation results. The evaluation results of the case study suggest that considering zonal interdependences in TOD evaluation raises the correlation between measured TOD levels and mode shares of transit systems among zones and provides action directions to the local administration in developing a transit-oriented environment for a neighborhood.





TOD: TOD-ness; P: perspective; C: criterion; Z: zone;
: an interdependence exists among elements in a component marked by a dotted box

Research Spotlight

High Performance Plaster Coated Light Weight Composite Wall Panels.

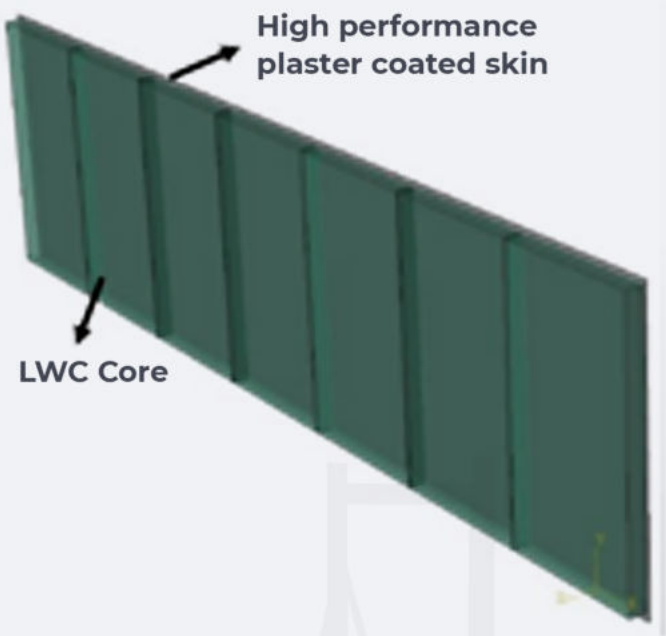
AUTHORED BY

Yeturi Pramod Kumar Reddy, Sri Kalyana Rama Jyosyula, Visalakshi Talakokula, S.V.Simhadri Raju

PUBLISHED IN

Intellectual Property India, https://ipindia.gov.in/index.htm

Metal foams are designed materials with desired mechanical characteristics including rigidity, high resistance, energy dissipation capacity, and light weight. Aeronautics and mechanical engineering have been the principal disciplines for these material applications till date. However, these characteristics can afford significant benefits for the development of innovative products for buildings and infrastructure in the field of civil engineering. Similar concept served as the inspiration for the research detailed in this invention, which is primarily focused on assessing the performance of double-skin composite panel sandwiched with Light Weight Concrete (LWC) in between the skins. The invention pertains to a prefabricated lightweight sandwich panels comprised of LWC as core material and High-Performance Concrete (HPC) as skin for the applications in civil infrastructure.



Published!

A quick section highlighting the recent publications by our faculty.

1 Bansal, T., **Talakokula, V.**, & Sathujoda, P. (2022). Machine learning-based monitoring and predicting the compressive strength of different blended cementitious systems using embedded piezo-sensor data. *Measurement, 205, 112204. (IF 5.31)*

2 Bansal, T., **Talakokula, V.**, & Sathujoda, P. (2022). Durability aspects of blended concrete systems subjected to combined mechanical and environmental loading using piezo sensor. *Construction and Building Materials, 348, 128613 (IF 7.69)*

3 Aquib, T. A., **Sivasubramonian, J.**, & Mai, P. M. (2022). Analysis of Ground Motion Intensity Measures and Selection Techniques for Estimating Building Response. *Applied Sciences, 12(23), 12089. (IF 2.84)*

4 Sharma, V., Dhanya, J., Gade, M., & **Sivasubramonian, J.** (2022). New generalized ANN-based hybrid broadband response spectra generator using physics-based simulations. *Natural Hazards, 1-23. (IF 3.16)*

5 Jose, D., Kitiborwornkul, N., Sriariyanun, M., & **Keerthi, K.** (2022). A Review on Chemical Pretreatment Methods of Lignocellulosic Biomass: Recent Advances and Progress. *Applied Science and Engineering Progress, 15(4), 6210-6210.*

6 Tantayotai, P., Gundupalli, M. P., **Katam, K.**, Rattanaporn, K., Cheenkachorn, K., & Sriariyanun, M. (2022). In-depth investigation of the bioethanol and biogas production from organic and mineral acid pretreated sugarcane bagasse: Comparative and optimization studies. *Biocatalysis and Agricultural Biotechnology, 45, 102499.*

7 Boinpally, S., Kolla, A., Kainthola, J., Kodali, R., & **Vemuri, J.** (2023). A state-of-the-art review of the electrocoagulation technology for wastewater treatment. *Water Cycle, Vol. 4, pp. 26-36*

8 **Katam, K.**, Ananthula, R., Anumala, S., Sriariyanun, M., & Bhattacharyya, D. (2022). The impact of light intensity and wavelength on the performance of algal-bacterial culture treating domestic wastewater. In *E3S Web of Conferences, Vol. 355, p. 02003. EDP Sciences.*

9 **Katam, K.**, & Bhattacharyya, D. (2022). Occurrence, fate, and persistence of per-and poly-fluoroalkyl substances (PFASs) in drinking water treatment systems. In *Current Developments in Biotechnology and Bioengineering* (pp. 247-283). Elsevier.

10 Wani, F. M., **Vemuri, J.**, & Rajaram, C. (2022). Effect of soil structure interaction on the dynamic response of reinforced concrete structures. *Natural Hazards Research, 2(4),60*

11 Bansal, T., **Talakokula, V** and T. Jothi Saravanan (2023), "Monitoring of prestressed concrete beam under corrosion using embedded piezo sensor based on electro-mechanical impedance technique". *Science Talks, Volume 4, 100095.*

12 Govardhan Polepally, **Venkata Dilip Kumar Pasupuleti**, and Prafulla Kalapatapu (2022) "Condition Assessment of a Masonry Bridge Using Accelerometers Sensors: A Preliminary Study", *9th International Euro-Mediterranean Conference, Cyprus*

13 Zoheb Nawaz Md, Mohan S C, **Kalyana Rama J S.**, (2022). Parametric Study on Natural Rubber based Low-Cost Base Isolation Technique for Masonry Buildings, Proceedings of the International Conference on Natural Hazards and Infrastructure, *3rd International Conference on Natural Hazards and Infrastructure, ICONHIC 2022*

14 Kumar, V. P., Kumar, A. S., Venkat, P., & **Rama, J. S. K.** (2022). Economical Robust Mix Proportioning of Self-Compacting Concrete Mixes-A Comparative Study. In *ASPS Conference Proceedings, Vol. 1, No. 1, pp. 171-178, Proceedings of 12th Structural Engineering Convention organized by MNIT Jaipur.*

15 Mounika, G., Bhaskar, R., **Rama, J. S. K.**, Madhu, E., & Sri, B. I. (2022). Alkali Activated Concrete using Industrial and Agro Waste-Mix proportioning and Experimental Investigation. In *ASPS Conference Proceedings, Vol. 1, No. 4, pp. 1327-1331, Proceedings of 12th Structural Engineering Convention organized by MNIT Jaipur.*

16 **Rama, J.S. K.**, Krishna, B. V., & Mohan, S. C. (2022). Performance-Based Design of an Irregular RC Structure with and without Supplemental Damping. In *ASPS Conference Proceedings, Vol. 1, No. 3, pp. 605-610, Proceedings of 12th Structural Engineering Convention organized by MNIT Jaipur.*

17 Wani, F. M., Mujtaba Moid, M., Chandrakanth Reddy, K., **Vemuri, J.**, & Chenna, R. (2023). Wavelet Analysis of Near-Field Ground Motions from the Mw 7.6 1999 Chi-Chi Earthquake in Taiwan. In *Recent Advances in Materials, Mechanics and Structures (pp. 311-319). Springer, Singapore.*

18 Kodali, R., Wani, F. M., Aquib, T. A., & **Vemuri, J.** (2023). Numerical Modelling of an Unreinforced Masonry Wall with Central Window Opening. In *Recent Advances in Materials, Mechanics and Structures (pp. 61-71). Springer, Singapore*

19 Ambatipudi, Vinuthna, Kanuka Mareddy**, Jayaprakash Vemuri,** and K. V. L. Subramaniam (2022) "Time-Frequency Analysis of Strong Ground Motions from the Mw 6.8 1991 Uttarkashi Earthquake", *In: Disaster Risk Science and Technology, pp. 45-57, Springer Nature, Singapore*

20 **Ganesh Babu Kodeboyina** (2022) "Sustainable Strategies for Monument Protection -A panoramic view of the possibilities and pitfalls" in the *1st International conference on Novel Sustainable Concepts and Technologies in Civil Engineering, St Joseph Engineering College, Mangaluru, India,*

21 **Ganesh Babu Kodeboyina,** Lakshmi Thotakura**, Deepti Avirneni**, Chandrasekhar Bhojaraju (2022) "The Everchanging Path of Sustainability in the Construction Scenario" in the *1st International conference on Novel Sustainable Concepts and Technologies in Civil Engineering, St Joseph Engineering College, Mangaluru, India,*

22 **Ganesh Babu Kodeboyina,** Lakshmi Thotakura**, Deepti Avirneni**, Chandrasekhar Bhojaraju (2022) "UHPC as Sustainable Structural Composite", in the *1st International conference on Novel Sustainable Concepts and Technologies in Civil Engineering, St Joseph Engineering College, Mangaluru, India.*

23 Sidhu Ramulu Duddu, Vamsi Kommanamanchi, **Hariprasad Chennarapu**, Umashankar Balunain (2023). "Evaluation of Deformation Modulus of Unreinforced and Reinforced Sandy Soil Layers using LWD Device". *12th International conference of Geosynthetics.*

24 Elizabeth Jayex Panakkal, Manvitha Theegala, Srihita Grashma Chaparla, **Keerthi Katam**, Nichaphat, Kitiborwornkul, and Malinee, Sriariyanun (2022) "Deep Eutectic Solvent Pretreatment of Durian Peel for Enhanced Bioethanol Production", *International Conference on New Energy and Applications, Kyoto, Japan.*

Our students have excelled in the research sector as well. They have pushed the boundaries and conquered new territories. Their works have been accepted and published in various reputed conferences and journals:

1 **Abhishek Kumar** and **Semanth Reddy** from 4th year undergrad worked under Dr. Deepti Avirneni for **"Investigating Mechanical and Hydraulic Properties of Porous Concrete pavements"** and presented the paper in TIPCE-2022, a conference held at IIT Roorkee. The paper received applause and was published in Springer Publications.

Fig. 10. TIPCE-2022 Conference at IIT Roorkee

2 **Kailash Kumar Singaram** PhD scholar under the mentorship of **Dr. Mohd. Ataullah Khan** presented a paper on **"Effect of ambient curing prior to the oven curing on the compressive strength of fly-ash based GP mortar"** held at NIT Calicut.


Second International Conference on
Construction Materials and Structures

Certificate of Presentation

This is to certify that **Kailash Kumar Singaram** of **Mahindra University** has presented a paper entitled *"Effect of ambient curing prior to the oven curing on the compressive strength of fly-ash based GP mortar"* in the Second International Conference on Construction Materials and Structures (ICCMS-2022) during 13-19 December, 2022.

Fig. 11. Certificate provided by ICCMS 2022

3 Our PhD scholar **Pratyusha Tatavarthi** presented a paper on **"Flood Peak Attenuation and Sediment Transport Analysis: A Case Study"** under the guidance of **Dr. Prabhakar Singh**. This paper was presented in International Conference on Climate and Water Related Extremes organised by IIT Roorkee.


IIT ROORKEE

Presenter Certificate

This is to certify that

Pratyusha Tatavarthi

Mahindra University, India

presented at the

International Conference on Climate and Weather-Related Extremes

held on 19 and 20 September 2022.

Prof. Ashish Pandey
Chairman, ICCWE 2022

Prof. Mohit P. Mohanty
Organizing Secretary, ICCWE 2022

Fig. 12. Certificate from the Conference on International Climate and Water Related Extremes in IIT Roorkee

4 Our PhD scholar **Gomasa Ramesh** under the supervision of **Prof. Visalakshi Talakokula** and **Dr. Sri Kalyana Rama Jyosyula** presented a paper on **"Crack initiation and propagation of plain concrete with natural mineral add mixture and fibres using surface bonded piezoelectric sensor"** at **SICE-2022**, held in IIT-Hyderabad.

Fig. 13. Gomasa Ramesh at the SICE 2022 Conference

5 **Semanth Reddy** and **Abhishek Kumar**, under the guidance of **Dr. S V Subbarao** on the topic **"Impact of COVID-19 Pandemic on the grocery shopping of individuals"**. The paper was presented in RATE-2022, organised by SVNIT, Gujarat.

Fig. 14. RATE-2022 Conference in SVNIT

6 Our PhD scholar **Faisal Mehraj Wani** working under the guidance of **Dr. Jayaprakash Vemuri** presented a paper on "**A Parametric Study on the Lateral Load Response of an Unreinforced Masonry Wall with Central Opening**" at International Conference on Construction Materials and Structures (ICCMS-2022)

Fig. 15. Certificate provided by ICCMS 2022

7 Our PhD scholar **Sangita De** working under **Dr. Mohd. Ataullah Khan** presented a paper on " **Development of multi-linear regression model for prediction of compressive strength of geopolymer concrete**" at International Conference on Construction Materials and Structures (ICCMS-2022)

Fig. 16. Certificate provided by ICCMS 2022

Field Trip

30TH SEPTEMBER, 2022

Fourth year undergrad students visited Ramky C&D waste management plant in Suraram on 30 Sept 2022, where the working of building waste demolition processing was demonstrated. Students observed the working of the facility and had an interactive session with the officials of the plant. In the afternoon, students visited the Kondapochamma reservoir and gathered technical information from the engineers. Overall, the students had an informative and fun trip to cherish.

Fig. 17. Field Trip

Indian Green Building Congress (IGBC)

IGBC is a company working towards sustainable construction goals, aiming to make Hyderabad a green building city. IGBC is organizing its annual GBC (Green Building Congress) conference with esteemed panelists from the relevant fields. Numerous panelists provided their perspectives on how sustainability may function in India. Their perspective enables Mahindra University students to perform better for the university and the nation.

Fig. 18. IGBC Conference Pictures

Indian Urban Housing Conclave - 2022 (IUHC2022)

Yeturi Pramod Kumar Reddy, an Industry funded JRF from Smart Built Prefab Pvt. Ltd and research scholar, has attended a conclave organized by Ministry of Housing and Urban Affairs (MoHUA) a three-day event on "Indian Urban Housing Conclave-2022 (IUHC2022)" from 17th to 19th October 2022 at Rajkot, Gujarat.

Fig. 19. Indian Urban Housing Conclave-2022 (IUHC2022)

National Seminar on "Importance of Sieving and Sizing in Research and Industry"

On 9th Dec 2022, **Dr Sri Kalyana Rama J,** Assistant professor, Dept of CE, Mahindra University along with PhD scholars **Kailash Kumar, Ramesh, Susmitha, Anil Kumar** attended one day National seminar on "**Importance of Sieving and Sizing in Research and Industry**" jointly organised by National Mineral Development Corporation(NMDC) and Bureau of Indian Standards(BIS) at NMDC office, Patanchervu, Hyderabad. Experts from Industry, Academia delivered key notes on the importance of Particle Size Analysis(PSA)and its importance in various applications. Industry experts also detailed the advanced instruments for PSA.

Fig. 20. National Seminar on "Importance of Sieving and Sizing in Research and Industry"

Annual Bridge It 2022

(ASCE-IGS Student Chapter Event)

23RD NOVEMBER, 2022

The student chapter for this semester conducted Annual Bridge It 2022 on November 23. The event witnessed active participation from huge number of participants. The testing of the models took place on the latter half of the day accompanied with some refreshments. Students from all the schools under the Mahindra University showed up enthusiasm to participate in the event.

Fig. 21.
Pictures from the
Annual Bridge IT 2022 Event

Summer Internship

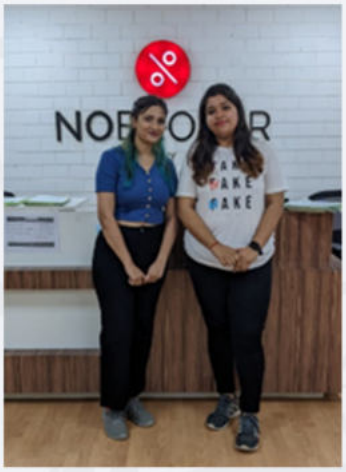
12TH MAY, 2022

Name : Manvitha Theegala (19XJ1A0119)
Location : King Monkut's University of North Bangkok
Experiment : Conversion of plant waste to Bio-fuel
Biomass Used : Durian Peel
Experiments Performed :
Preparation of Biomass, Preparation of DES, Pretreatment, Centrifugation, Filtration, Enzymatic Hydrolysis, HPLC, NREL, Fermentation, CMS.

Name : Saksham Rajput (19XJ1A0126)
Location : Design Werkz Engineering Pvt. Ltd. in Pune.

The work assigned to Saksham was designing Slabs and Beams for different Villas. Initially, he designed the slabs and beams based on manual calculations and after completing 15 days of the training period, I came to know about the use of Staad Pro software to find the moment and shear force. To make the calculation part much easier, the EXCEL-based worksheets were given to me, making the design process less complicated.

Name : A Durga Gayatri Vinuthna (19XJ1A0101)
Location : Design NoBroker in Bengaluru
Description : From my internship at NO BROKER, I was able to get a better understanding of how vendor management and design work. I enjoyed working with the interior operations team and I'm sure I will be able to use the skills I have learned in my career later. While the focus was on negotiating and onboarding vendors, designing AutoCAD (2D) production drawings, factory visits, following up on projects, and understanding the OEM, Renovation, and Turnkey processes, I also handled various other tasks as they occurred.



19 | Summer Internships

Name : **P Vishwaajith** (19XJ1A0141), **Vanga Amulya Reddy** (19XJ1A0131), **Devireddy Sowmya** (19XJ1A0136), **Venkat Rishi Badiga** (19XJ1A0132)

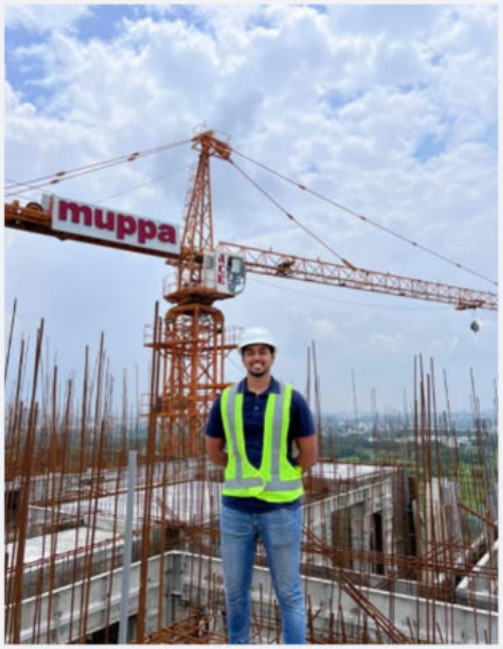
Description : "Site Establishment, Rock Excavation, Foundations, Fabrication & Erection of steel structure of High-rise buildings, Project Planning (MS Project) and Q.S. functions (ERP Software)" Phoenix Tech Zone Pvt. Ltd., during the period from 16th June 2022 to 11th August 2022.

Name : **A Pritika Reddy** (19XJ1A0102), **Sumedh Gangavalli** (19XJ1A0142)

Company : Muppa Projects private limited

Duration : 1 month

Internship in Quantity estimation and site supervision



Innovation 2 Infrastructure Workshop Series

29TH OCTOBER, 2022

Inaugural One-Day National Workshop on
"Infrastructure Health Monitoring Framework based on Internet of Things",
organized by Center For Sustainable Infrastructure and Sytems (CSIS), Mahindra University,
and Mantis Infra Solutions Pvt Ltd.

The Innovation 2 Infrastructure (I2I) workshop series aims to provide a learning platform to tune and turn next generation engineers, researchers & practitioners to implement research-based transitional technologies into real world civil engineering applications.

THEME

In the modern age of infrastructure, utility lifelines such as roadways, bridges and powerlines have become indispensable. Any threat to these infrastructures, no matter the extent, can lead to a catastrophic failure which potentially leads to economic and human loss. Avoiding these threats involves detecting the existing damages and predicting future failures. Structural Health monitoring (SHM) as such is the most advanced approach towards a damage detection strategy. This entails continuous monitoring of the structure using multiple sensors and performing analysis on the data acquired from these sensors. This has increased the demand for not only the developed sensor technology and smart monitoring procedures, but also providing innovative solutions and intelligent digital tools for analysing, evaluating and utilizing the results.

The emergence of Internet of Things (IoT) is a shot in the arm for existing SHM system to improve the eciency and reliability in predicting the damage. IoT represents an ecosystem of networked sensor nodes which aggregate data in centralized/decentralized cloud storage, thus leveraging the near-infinite computing power and storage that the internet provides. IoT, a new frontier, together with smart monitoring systems can provide drastic improvement in preserving and maintaining these infrastructures. It is anticipated that as more ubiquitous linked devices are created, diculties like scalability and interoperability will arise to which creative solutions should be developed.

In the inaugural edition of our workshop series, participants were introduced to developments in SHM, followed by issues and solution approaches and culminating in developing IoT solutions for SHM. Participants were demonstrated the real-world application of the above IoT solution.

Panel Discussion | Speakers

Prof. Venkata Dilip Kumar Pasupuleti

Head CSIS, MU

Prof. Prafulla Kalapatapu

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Head Business Development Manager SGS, India

Dr. Basuraj Bhowmik

Assistant Professor, Indian Institute of Technology, BHU

Er. Girraj Singh Yadav

(Retd) Deputy Chief Engineer, IRSE

Fig. 22. Group Picture of I2I Workshop Participants & Team - Around 60 Participants have attended the workshop largely consisting faculty from colleges.

Industry Visitors

Mr. Anirab Ghosh
Chief Sustainability Office,
Mahindra Group
20 / 12 / 2022

Ms. Anuja Sharma
Advisor,
Mahindra Group
30 / 11 / 2022

Prof. Rajesh Goyal
Dean Research & Ph.D Programs,
NICMAR, Pune
15 / 12 / 2022

Mr. Krishna Prasad
CEO, Spartek
Team, Hyd

Mr. S.V.S Raju
CEO, Smart Build
Prefab Pvt Ltd, Hyd

10 / 12 / 2022

Prof. B. Battacharjee
Emeritus Professor, Department
of Civil Engineering, IIT-Delhi
15 / 10 / 2022

Ms. M M Murugappan
Executive Chairman
Murugappan Group
26 / 09 / 2022

ADVICE TO
Civil UG & PG Students

Prof. Ganesh Babu Kodeboyina

The present pinnacles of understanding and study should be firmly grounded on the authentic foundations of the past. Be totally truthful in your quest for excellence without giving in for deception or distortion and you will always be a winner at the end. You will also have peace of mind that nothing else can ever give and live in harmony with nature.

Dr. M. Ataullah Khan

Research scholars should develop confidence and trust on their own abilities to carry out highest quality research. They should plan, organize and execute research activities with regular emphasis on reading and writing. Be a critical thinker and always be ready to formulate, test and validate your hypothesis. Masters students should focus on their fundamentals, course projects and computational tools. To enhance their industry employability, they should use the opportunities to interact with the experts during seminars and internships. Finally, all of you should be empathetic and make some good friends.

MEET THE TEAM

The faces behind the newsletter.

Faculty Advisor
Dr. Jayaprakash Vemuri

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Managing Editor
Pratyusha Tatavarthi

Contributing Editor
A. Vinuthna

Contributing Editor
Chandrakanth Reddy

Contributing Editor
Abhishek Kumar

Contributing Editor
Konda Hitesh

Find-The-Word

Triangle	Strength
Engineering	Eiffel Tower
Manmade	Building
Bridge	Shape
Structure	CN Tower
Skydome	Architecture
Suspension	Natural
Beams	Strong
Trussing	Stability

T B Y B V K I J L L S S Y A T L N
R G J U E D L W D H T U K J E V Q
U S U I N O C T K T R S I A I C S
S J L L G P H W S X O P A X F R T
S B A D I T G I T S N E B B F S R
I E R I N O Q P A D G N R X E T U
N A C N E Q P V B Z Y S I R L U C
G M H G E C E X I F O I D Z T U T
H S I K R N E R L N S O G M O W U
E I T T I T P S I A T N E A W X R
A L E P N O A H T T I N Q N E K E
Y T C B G W N A Y U J N X M R Y L
N W T X J E P P I R U J Z A P M L
G H U X U R B E K A S I N D A N K
N T R I A N G L E L T E V E X M Q
F X E E G V S T R E N G T H B L F
G O O F J G Y O S K Y D O M E H W

Riddles

1 What kind of coat is always wet when you put it on?

2 The man who bought it doesn't need it. The man who needs it doesn't know it. What is it?

3 What is so fragile that even saying its name can break it?

Facts

1 There are currently 1712.1 million tons of steel being used in the world today.

2 Baglihar Hydroelectric project involved construction of 30km of project road along with three bridges.

3 The three Gorges dam in China has displaced so much water mass, it has actually slowed down the rotation of the Earth by 0.06 microseconds.

4 The Burj Khalifa weighs approximately 450,000 tons which is an equivalent of 100,000 elephants

5 There are 10 million bricks in the Empire State Building.

KEY

1 A COAT OF PAINT
2 A COFFIN OR A CASKET
3 SILENCE

You, as a pedestrian, may have forgotten -

To hear never-heard sounds,

To see never-seen colours and shapes.

To try to understand the unseen

Power pervading the world;

To fly and find pure ethereal substances

That are not of matter

But of that invisible soul pervading reality.

To hear another soul and to whisper to another soul.

To be a lantern in the darkness

Or an umbrella on a stormy day.

To feel much more than know;

To be a wave, understanding the influence of the moon.

To be a tree and read the memory of the leaves.

To be an insignificant pedestrian on the streets;

Of crazy cities filled with vehicles watching, watching, and watching.

To be a smile on the face of the side view mirror.

And shine in its memory

As a moment saved without planning.

By,

Anam,
Ph.D. Scholar (Second Year)