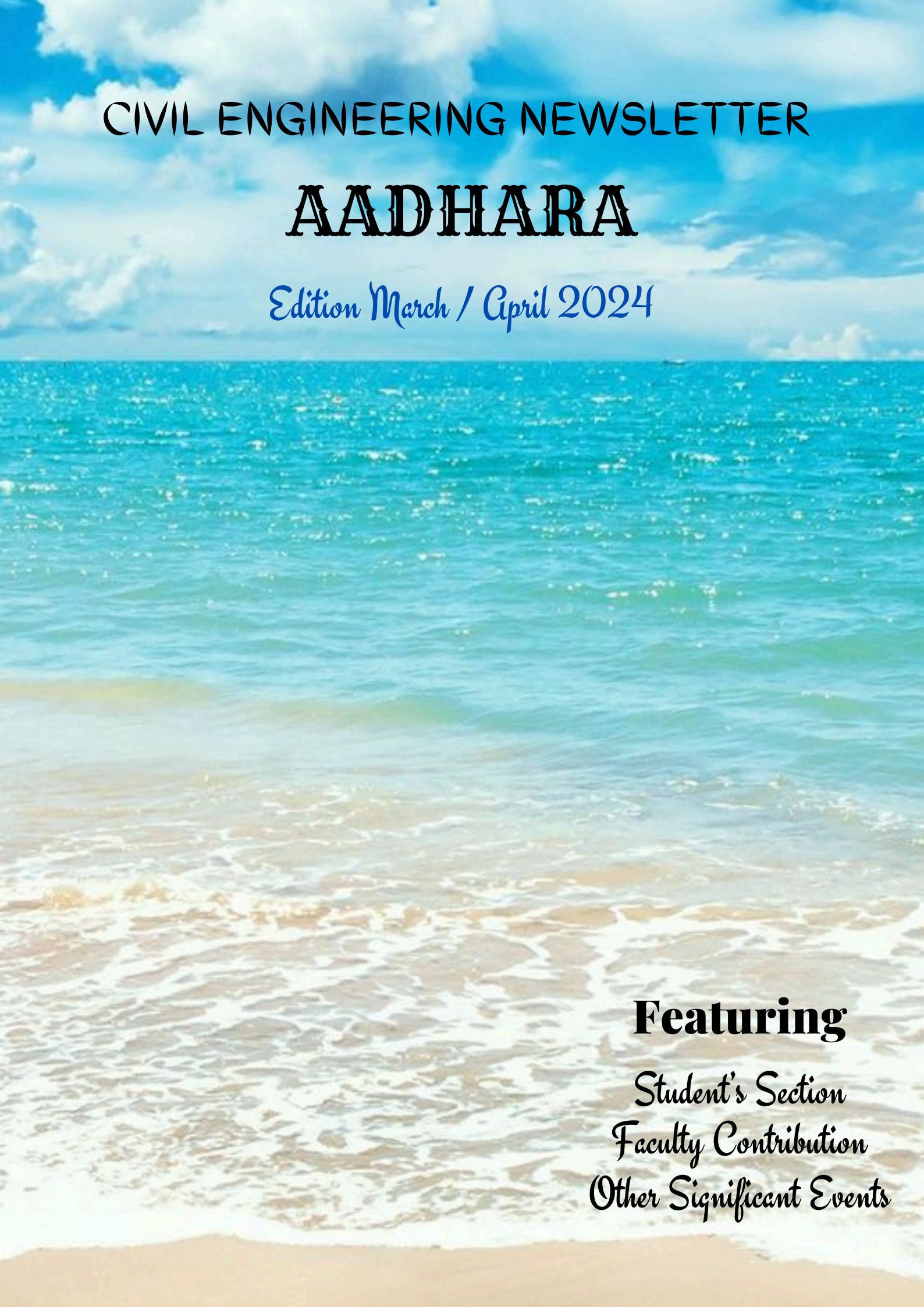


CIVIL ENGINEERING NEWSLETTER

AADHARA

Edition March / April 2024

Featuring

Student's Section
Faculty Contribution
Other Significant Events

VISION AND MISSION OF THE DEPARTMENT

VISION

To be a centre of excellence in Civil Engineering Education through full-fledged Learning experience along with research.

MISSION

To accomplish our vision, we are committed to excel in Civil Engineering Education by providing,

- *Faculty experts from all specialization of Civil Engineering to facilitate teaching learning process*
- *Excellent infrastructure facilities to apply Civil Engineering knowledge and perform societal based research*
- *Exposure to latest technologies in Civil Engineering through industry-institute interaction and professional bodies*
- *Environs to develop their innovative thoughts, ethics, communication, inter- and intra- personal skills*
- *Enthusiasm towards self-learning, social responsibility and entrepreneurship*

PROGRAMME EDUCATIONAL OBJECTIVES

- *To apply knowledge of mathematics, science and engineering to solve existing problems in the area of Structural, Geotechnical, Water Resources, Environmental, Transportation, Urban Planning, Construction Materials and Management in Civil Engineering*
- *To analyze, design, construct Civil Engineering traditional and modern structures*
- *To perform investigation on any complicated Civil Engineering problems by conducting research using modern equipments and software tools*
- *To communicate and develop strong inter- and intra-personal skills to prepare them for placement and higher studies*
- *To be self-motivated towards lifelong learning and entrepreneurship*

STUDENT'S ACHIEVEMENTS

III year Civil Enginnering students participated in CEA Fest 2024-Civil Engineering Department Annual Technical Festival organised by IIT ,Chennai on 30th March 2024 and won First and third prizes with cash awards in the following events.

EVENT: Terraquake- First Prize with a cash award of Rs.6000

1. Harisudhan.N
2. Nithish Kumar .M
3. Yogaraj.M

Event : Concrete challenge - First Prize with a cash award of Rs.6000

1.Abilash.c
2. Adharsh .S.R
3.J aison .B
4. Naresh kamar.G
5. Navin Kishore .K

Event :Bon-AutoRoutier- Third Prize with a cash award of Rs.1000

1. Kavinraj.A.G
2. Navin Kishore .K

Best ambassador award-R.Gunanandhini.

FACULTY CONTRIBUTION

R&D Publications

SMART WASTE MANAGEMENT SYSTEM USING WSN FOR ENHANCED CIRCULAR ECONOMY OF THE SMART CITY

Journal: Journal of Environmental Protection and Ecology 25(2), (2024) Pages: 430 - 439

▼ Authors

BANSOD, PREMENDRA JANARDAN ; VISWANATH, K. ; SARAVANAKUMAR, P. ; RAJA, G. ; ANAND, R. ; GANDHEWAR, NISARG ; RAJARAM, A.

▼ Abstract

The smart waste management system (SWMS) within the framework of a smart city highlights the combination of technical innovation with environmental sustainability in the framework of modern urban development. This innovative technology uses Wireless Sensor Networks (WSN) to restructure and optimize traditional waste management processes. The primary issue addressed by this research is the inefficiencies included in static waste collection systems, which result in difficulties such as overflowing bins, increased operational expenses, and negative environmental repercussions. To address these issues, this research proposes incorporating the artificial hummingbird optimization (AHA) technique as a dynamic and adaptive solution for optimizing waste collection routes in real time. AHA dynamically changes collection routes based on requirements such as fill levels, proximity, and previous waste generation data, provided by the effective consumption patterns of hummingbirds in the natural world. The bio-inspired optimization not only reduces the environmental impact of traditional trash treatment but also corresponds with the larger goal of developing a circular economy. The experimental results of the suggested strategy demonstrate a significant improvement in the efficiency of waste management operations. The SWMS demonstrates adaptability to the ever-changing dynamics of waste generation due to the harmonious interaction of WSN and AHA, resulting in reduced travel distances, lower fuel consumption, and an actual contribution to the sustainable evolution of smart cities. This combination of WSN and AHA not only addresses important waste management challenges but also supports the larger objective of developing resilient and sustainable urban ecosystems.

▼ Keywords

artificial hummingbird optimization; circular economy; environmental sustainability; management system; smart city; smart waste; wireless sensor networks

Dr. P. Saravanakumar, Professor and Head, Department of Civil Engineering, has published a research article titled “Smart waste management system using WSN for enhanced circular economy of the smart city” in Journal of Environmental Protection and Ecology.

FACULTY CONTRIBUTION

R&D Publications

A Qualitative Study and Analysis of Claim Problems in Indian Construction Industry

Mukilan Karuppasamy 1, a), Chithambarganesh Arunsankar [2, b)], Chandra Devi Raman [3, c)], Velumani Pandi [1, d)], Sureshkumar Arunachalam [4, e)], Arunkumar Kadarkarai [4, f)]

[1]*Department of Civil Engineering, Kalasalingam Academy of Research and Education, Krishnankovil, India*
[2]*Department of Civil Engineering, Vel Tech Rangarajan Dr. Sagunthala Institute of Science and Technology, Chennai, India*
[3]*Department of Civil Engineering, Sri Krishna College of Engineering, and Technology, Coimbatore, India*
[4]*Department of Civil Engineering, Sree Vidyanikethan Engineering College, Tirupati, India*

[a)] Corresponding author: mukicivil@gmail.com
[b)] chithambarganeshmailid@gmail.com
[c)] chandradevir@skcet.ac.in
[d)] velumani@klu.ac.in
[e)] sureshalmighty@gmail.com
[f)] arunapcivil@gmail.com

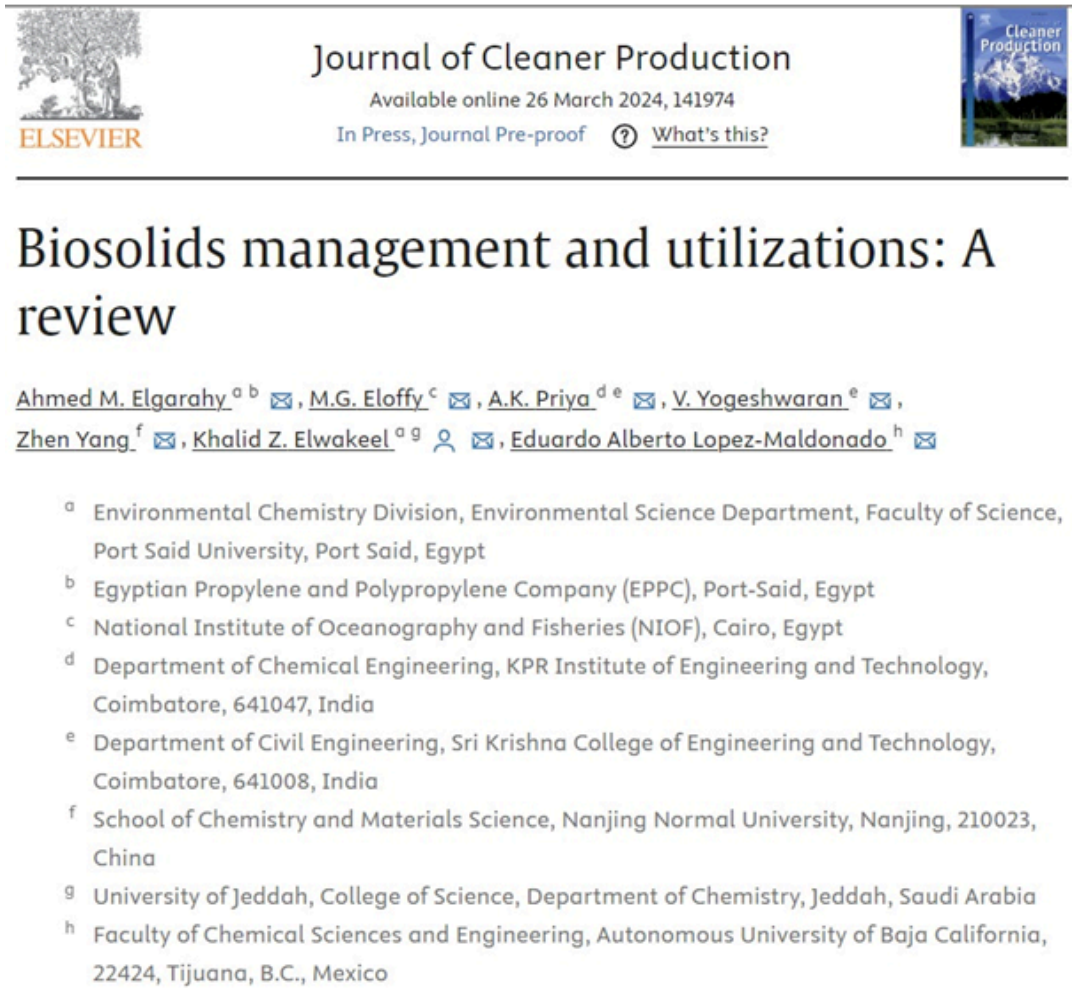
04 April 2024 12:58:33

Abstract. Most development projects are experiencing claims having numerous causes. Since 2010, claim disclosures have increased as a result of the overall political climate. These allegations had a significant impact on every group involved in the building industry. The consequences of the claim could include expense invasion, loss of efforts and job interruption, and contract termination. This examination intends to perceive the simple explanation behind the guarantees in development and exhibit their contrast between respondents regarding the specific, organizational, and association attributes. It also points out the significant variables in producing for the administration of development project claim to anticipate a guaranteed event and alleviate a case's negative effect. The target of the examination was accomplished through a questionnaire survey from a few development organizations. The poll study was led, including the project worker, specialist, customer perspective. The consequence of the study experienced in the SPSS programming for finding the primary consideration that influences the development. The finding shows the nonattendance of site consideration regarding recognizing cases, separation or difficulty to reach of related archives proactively, and clashes created during proprietor/worker for hire exchange are essentially fundamental problems associated with the arrangement of construction claim management system. Through survey paper, this work hopes to identify various claims and identify the factors that have the greatest impact on construction claims in our southern region.

Dr. R. Chandra Devi, Associate Professor, Department of Civil Engineering, has published a research article titled “A Qualitative Study and Analysis of Claim Problems in Indian Construction Industry” in AIP Conference Proceedings.

FACULTY CONTRIBUTION

R&D Publications



Journal of Cleaner Production
Available online 26 March 2024, 141974
In Press, Journal Pre-proof ⓘ What's this?

Biosolids management and utilizations: A review

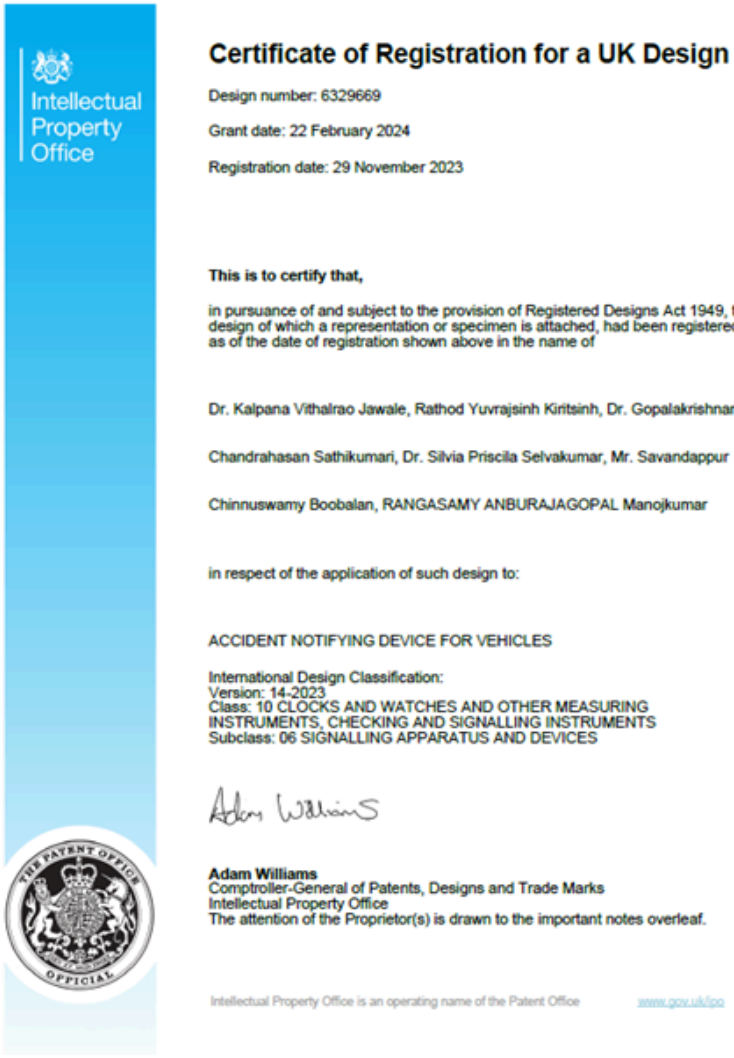
Ahmed M. Elgarahy [a b], M.G. Eloffy [c], A.K. Priya [d e], V. Yogeshwaran [e], Zhen Yang [f], Khalid Z. Elwakeel [a g], Eduardo Alberto Lopez-Maldonado [h]

[a] Environmental Chemistry Division, Environmental Science Department, Faculty of Science, Port Said University, Port Said, Egypt
[b] Egyptian Propylene and Polypropylene Company (EPPC), Port-Said, Egypt
[c] National Institute of Oceanography and Fisheries (NIOF), Cairo, Egypt
[d] Department of Chemical Engineering, KPR Institute of Engineering and Technology, Coimbatore, 641047, India
[e] Department of Civil Engineering, Sri Krishna College of Engineering and Technology, Coimbatore, 641008, India
[f] School of Chemistry and Materials Science, Nanjing Normal University, Nanjing, 210023, China
[g] University of Jeddah, College of Science, Department of Chemistry, Jeddah, Saudi Arabia
[h] Faculty of Chemical Sciences and Engineering, Autonomous University of Baja California, 22424, Tijuana, B.C., Mexico

Dr. V. Yogeshwaran, Assistant Professor, Department of Civil Engineering, has published a research article titled “Biosolids management and utilizations: A Review” in Journal of Cleaner Production. It is indexed in SCI and Scopus with an Impact Factor of 11.1.

FACULTY CONTRIBUTION

R&D Publications



Intellectual Property Office

Certificate of Registration for a UK Design

Design number: 6329669

Grant date: 22 February 2024

Registration date: 29 November 2023

This is to certify that,

in pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name of

Dr. Kalpana Vithalrao Jawale, Rathod Yuvrajsinh Kiritsinh, Dr. Gopalakrishnan

Chandrahasan Sathikumari, Dr. Silvia Priscila Selvakumar, Mr. Savandappur

Chinnuswamy Boobalan, RANGASAMY ANBURAJAGOPAL Manojkumar

in respect of the application of such design to:

ACCIDENT NOTIFYING DEVICE FOR VEHICLES

International Design Classification:
Version: 14-2023
Class: 10 CLOCKS AND WATCHES AND OTHER MEASURING INSTRUMENTS, CHECKING AND SIGNALLING INSTRUMENTS
Subclass: 06 SIGNALLING APPARATUS AND DEVICES

Adam Williams

Adam Williams
Comptroller-General of Patents, Designs and Trade Marks
Intellectual Property Office
The attention of the Proprietor(s) is drawn to the important notes overleaf.

Intellectual Property Office is an operating name of the Patent Office www.gov.uk/ipo

Mr. S. C. Boobalan, Assistant Professor, Department of Civil Engineering, has registered a UK Design patent on the title “Accident notifying device for vehicles”

FACULTY CONTRIBUTION

R&D Publications

Vol.23 No.01
Jan, 2024 MATERIAL SCIENCE AND TECHNOLOGY

ESTIMATION OF COMPRESSIVE STRENGTH OF ALKALI ACTIVATED SOIL USING ARTIFICIAL INTELLIGENCE TECHNIQUES

Dr Manik Deshmukh[1], Dr. Sneha Thombre[2], Mohammad Parvej Alam[3], S. Sadheesh[4], S. Elavarasan[5], Devendra Dohare[6]

[1]Associate Professor, Department of Civil Engineering, SVERIS college of Engineering Pandharpur, Maharashtra, India.

[2]Assistant Professor, Department of Information Technology, MKSSS's Cummins College of Engineering for Women, Pune-411052, Maharashtra, India.

[3]Assistant Professor, Department of Civil Engineering, Shri Shankaracharya Institute of Professional Management and Technology Raipur, Mujgahan Sejabahar, Raipur, Chhattisgarh-492015, India.

[4]Assistant Professor, Department of Civil Engineering, Sri Krishna College of Engineering and Technology, Coimbatore, Tamil Nadu, India.

[5]Assistant Professor, Department of Civil Engineering, KPR Institute of Engineering and Technology, Coimbatore, Tamil Nadu, India.

[6]Associate Professor, Department of Civil Engineering and Applied Mechanics, Shri G. S. Institute of Technology and Science, Indore-452003, Madhya Pradesh, India.

ABSTRACT:

The development of sustainable and environmentally friendly building materials has showed promise for earth-based materials. However, estimating their qualities is challenging and imprecise due to their unusual application in the building industry. Their characteristics are frequently determined using a traditional materials technique. As a result, knowledge about the characteristics of the unusual materials is inaccurate. The compressive strength of the alkali-activated termite soil was predicted using a support vector machine (SVM), an artificial neural network (ANN), and linear regression (LR) in order to achieve more precise characteristics. Due to their substantial impact on compressive strength, this study employed activator concentration, Si/Al, starting curing temperature, water absorption, weight, and curing regime as input parameters. According to the experimental data, SVM performs better than ANN and LR in terms of root mean square error (RMSE) and R2 score.

Keywords: machine learning; artificial neural network; support vector machine; linear regression; alkali-activated termite soil; compressive strength

Mr. S. Sadheesh, Assistant Professor, Department of Civil Engineering, has published a research article titled "Estimation of compressive strength of alkali-activated soil using artificial intelligence techniques" in Materials Science and Technology.

FACULTY CONTRIBUTION

R&D Publications

E3S Web of Conferences **491**, 01012 (2024) https://doi.org/10.1051/e3sconf/202449101012
ICECS'24

Experimental and Statistical Study of Flexural Strength in Ternary Blended High-Performance Concrete using Alcofine

Durga *Maligi*[1], Sujaatha *Anbuchozhan*[2], Ramakrishnan *Subramaniam*[3], Harishankar *Sooriakumar*[4], Nasar Ali *Razack*[5*]

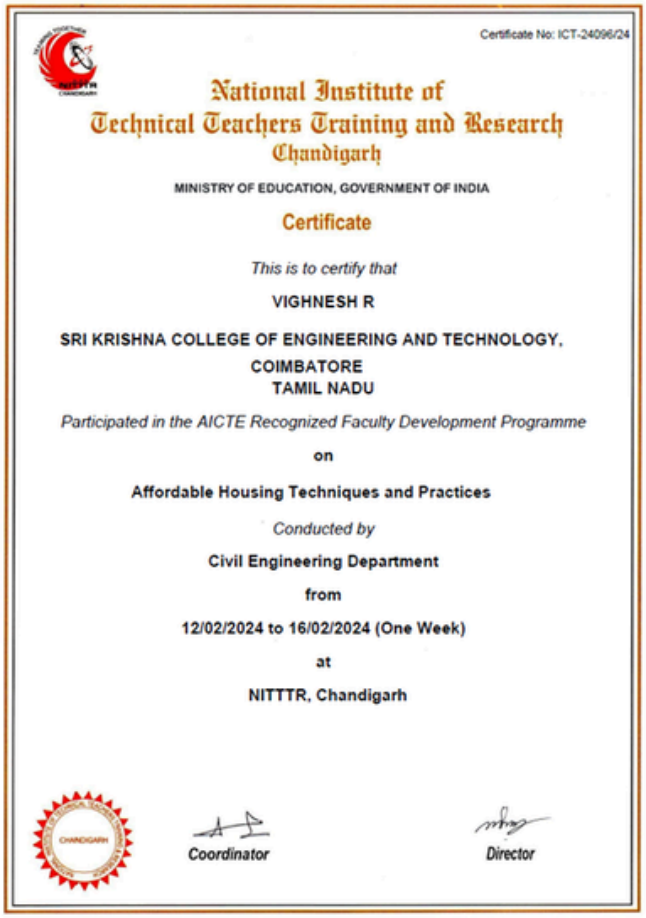
[1]Department of Civil Engineering, KG Reddy College of Engineering and Technology, Hyderabad, Telangana - 500075, India
[2]Department of Civil Engineering, Sri Sairam Engineering College, Chennai, Tamilnadu – 600044, India
[3]Department of Civil Engineering, Sri Krishna College of Engineering and Technology, Coimbatore, Tamilnadu- 641008, India
[4]School of Civil Engineering, SASTRA Deemed University, Thanjavur, Tamilnadu - 613401, India
[5*]Department of Civil Engineering, College of Engineering and Technology, Samara University, Afar - 132, Ethiopia

Abstract. The primary aim of this research is to conduct a comprehensive comparative experimental and statistical study on the flexural strength of a novel ternary blended high-performance M30 grade concrete incorporating 20% Alcofine in comparison to traditional concrete.The components employed in the experimental investigation of high-performance M30 concrete incorporating Alcofine, in contrast to conventional concrete, comprise cement, fine aggregate, coarse aggregate, water, Alcofine, and additional cementitious materials like fly ash and silica fume. The Flexural Strength of high-performance M30 concrete containing Alcofine significantly influences the performance of concrete structures, rendering it a critical mechanical property for examination in the comparative analysis. The mean flexural strength of the Conventional Concrete group measured 8.1111 N/mm^2, with a standard deviation of 0.75840 and a standard error of the mean of 0.17876. In contrast, the Ternary Blended Concrete group exhibited a higher mean flexural strength of 12.5000 N/mm^2, coupled with a larger standard deviation of 2.09341 and a standard error of the mean of 0.49342. The statistical power analysis, involving parameters such as alpha (α) and beta (β), with commonly used values of 0.05 or 0.01, indicates a significance level of 5% or 1%, respectively. Further research could delve into refining the optimal percentage of Alcofine and exploring its long-term performance under varying environmental conditions.
Keywords: Ternary Blended Concrete; Alcofine; Flexural Strength; Comparative Analysis; Statistical Study

Dr. S. Ramakrishnan, Associate Professor, Department of Civil Engineering, has published a research article titled “Experimental and Statistical Study of Flexural Strength in Ternary Blended High-Performance Concrete using Alcofine” in E3S Web of Conferences.

FACULTY CONTRIBUTION

Faculty Progression



Certificate No: ICT-24096/24

National Institute of
Technical Teachers Training and Research
Chandigarh

MINISTRY OF EDUCATION, GOVERNMENT OF INDIA

Certificate

This is to certify that

VIGHNESH R

SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY,
COIMBATORE
TAMIL NADU

Participated in the AICTE Recognized Faculty Development Programme

on

Affordable Housing Techniques and Practices

Conducted by

Civil Engineering Department

from

12/02/2024 to 16/02/2024 (One Week)

at

NITTTR, Chandigarh

Coordinator

Director

Mr. R. Vighnesh, Assistant Professor, Department of Civil Engineering, have participated in a one week FDP on “Affordable Housing Techniques and Practices” conducted by the Civil Engineering Department from 12th to 16th at NITTTR, Chandigarh.

FACULTY CONTRIBUTION

Faculty Guest Speaker

Training on 'Pre-fabricated structure' to faculty members

Erode, Mar 5:
A week-long faculty development training on 'Pre-fabricated Structure' is being conducted at Sri Venkateswara Hi-Tech Engineering College (SVHEC) under the sponsorship of Anna University Centre for Faculty and Professional Development in Gobichettipalayam, Erode district from Feb 29 to March 6. The event was inaugurated by Sri Krishna College of Engineering and Technology civil engineering HoD Dr P Saravana Kumar.

In his address, he underlined the recent development in prefabricated structures, commonly known as prefabs which represents a modern construction approach that has gained significant popularity in recent years. These structures are designed and manufactured in a controlled environment away from the construction site, allowing for efficient assembly and installation on-site. He dwelt at length components and its benefits of prefabricated structures that involves the production of building components, modules, or entire structures in a factory or manufacturing facility. And the key components, includes walls, roofs, and floors which are fabricated with precision. These components can be fully or partially assembled at the production site and later transported to the intended location.

Prefabricated buildings find diverse applications, ranging from temporary construction facilities, office spaces, and medical camps to evacuation centers, schools, apartment complexes, and individual residences, he said and detailed about its significance, measures and different types besides its varied benefits. Faculty members from the civil engineering department drawn from various colleges benefited from the workshop.

College chief administrative officer G Gowtham and principal Dr P Thangavel presided over the inaugural. Earlier, HoD, civil engineering Dr G E Arun Kumar welcomed.

Dr. P. Saravanakumar, Professor and Head, Department of Civil Engineering, was invited as a guest speaker as a part of a FDP on "Pre-fabricated Structure" organised by Sri Venkateswara Hi-Tech Engineering College under the sponsorship of Anna University Centre for Faculty and Professional Development on 29th February 2024.

OTHER SIGNIFICANT EVENTS

CRIADIOS 2K24

SKCET - Civil Engineering - Civil Engineering Association hosted the National level Technical symposium CRIADIOS 2K24 on 27th February 2024.

An impressive turnout of 110 students from various colleges actively participated in the events. Totally eight technical and non-technical events include Paper Presentation, Quiz Contest, Budget Builders, 3D Modelling, Cube Contest, Origami Bridge Modelling, Painting and Short Film were conducted. The commendable efforts of our students and faculty received widespread appreciation from all the external participants for the seamless execution of the events.

OTHER SIGNIFICANT EVENTS

Guest lecture on "Future trends and innovation in BIM"

The SKCET -Civil Engineering Department organised a one day workshop on Future Trends and Innovation in Building Information Modeling at Library Cadd lab on 16th April 2024. The resource person was Mr.Vineesh Kumar, Autodesk ACI, Director – CADCENTER, Palakkad.

OTHER SIGNIFICANT EVENTS

Guest lecture on "Awareness programme on Antiragging"

SKCET -Civil Engineering Department organised a Guest Lecture on "Awareness Programme on Antiragging" at the BS-03 Seminar Hall on 12th March 2024. The Resource Person was Ms. R. Thenmozhi, Senior Advocate, Coimbatore.

OTHER SIGNIFICANT EVENTS

Guest lecture on "Protocols for building plan approval"

The Department of Civil Engineering and SKCET Indian Geotechnical Society -Student Chapter organised a Guest Lecture on "Protocols for Building Plan Approval" on 13.03.2024. The resource person was Er. S. Prabhavathi, Geotechnical Engineer, KCM Associates, Coimbatore.

OTHER SIGNIFICANT EVENTS

Campaign election awareness competitions

Mera Pehla Vote – Desh Ke Liye campaign Election Awareness Competitions (Drawing/Painting and Slogan Writing Competition) were organized for the SKCET students on 05.03.2024 under the theme Importance of elections and the pride of voting in the largest democracy in the world. The Students enthusiastically participated and explored their thoughts through drawings and slogans to create awareness on Voting and importance of Election.

OTHER SIGNIFICANT EVENTS

Outside classroom learning experience

As part of the Outside Classroom Learning Experience (OCLE) for the subject "Architectural Planning and Building Drawing", First-year Civil Engineering students were taken to Vankatram Learning Centre , the central library of SKCET on 27th March 2024.

CREATIVE CORNER

Ms. R. Ragapriya

I year/ Civil Engineering

CRIADIOS 2K24

From the Editorial Team of

FACULTY EDITORS

Dr. P. Saravanakumar,
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Department of Civil Engineering

Mr. R. Vighnesh,
Assistant Professor,
Department of Civil Engineering

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