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EGS PILLAY ENGINEERING COLLEGE

NAGAPATTINAM | AFFILIATED TO ANNA UNIVERSITY | APPROVED BY AICTE |

DEPARTMENT OF CIVIL ENGINEERING

MAGAZINE 24

SRISHTI 24

PEACE ASSOCIATION OF CIVIL ENGINEERING

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SHRI G. SHANKAR GANESH

JOINT SECERATARY

MESSAGE FROM SECRETARY'S DESK

I FEEL PROUD TO HEAR THAT OUR CIVIL DEPARTMENT IS ORGANIZING A LOT OF TECHNICAL EVENTS LIKE SYMPOSIUM, WORKSHOP, SEMINAR, AND WEBINAR INNOVATIVE PROJECTS, FACULTY ACHIEVEMENTS AND STUDENT ACHIEVEMENTS ARE COMING UP WITH A MAGAZINE ON THE OCCASION OF THE EVENT. THIS TYPE OF TECHNICAL EVENTS WILL GIVE THE BUDDING ENGINEERS, A PLATFORM TO SHOW CASE THEIR TALENTS AND LEADERSHIP QUALITIES. I WISH THE FACULTIES AND STUDENTS OF CIVIL DEPARTMENT. A WONDERFUL TECHNICAL EVENTS AND A GOOD LEARNING EXPERIENCE. I WISH YOU ALL FOR THE SUCCESS.

Dr.S. RAMABALAN., M.E., PhD.,

MESSAGE FROM PRINCIPAL

WARM AND HAPPY GREETINGS TO ALL. IT'S MY IMMENSE PLEASURE THAT **DEPARTMENT OF CIVIL ENGINEERING** IS ORGANIZING THE LOT OF TECHNICAL EVENTS.

UNDER THE ABLE GUIDANCE OF OUR SECRETARY SHRI. S. SNTHILKUMAR, Jt.SECRETARY SHRI. S. SANKAR GANESH CONTINUES TO MARCH ON THE WAY OF SUCCESS WITH CONFIDENCE, SHARP, CLEAR TO STAY COMPETITIVE , SIGHTED VISION AND PRECISE AND DECISION MAKING OF HIM HAS BENEFITED OUR COLLEGE.

THIS TECHNICAL EVENTS ARE EFFORT ON IN THE DIRECTION TO GIVE AN EXPOSURE TO THE STUDENTS ON THE RECENT DEVELOPMENT IN CIVIL ENGINEERING FIELD. IT ALSO PROVIDES A PLATFORM TO OUR STUDENTS TO EXHIBIT THEIR INHERENT WITH APPRECIATION THE HARD WORK, INVOLVEMENT AND EFFORT TAKEN BY THE TEAM OF FACULTY AND STUDENTS IN ORGANIZING THE EVENTS.

I CONGRATULATE ALL THE CONCERNED WITH GRATITUDE AND WISH THEM.

Dr.N.H.AGILANDESHWARI., M.E., PhD.,

MESSAGE FROM HOD

I AM GLAD THAT OUR DEPARTMENT WAS QRRGANIZED THE LEVEL OF TECHNICAL EVENTS AND A GREAT NUMBER OF YOUNG BUDDING TECHIES FROM DIFFERENT PARTS OF THE WORLD ARE GOING TO MEET UNDER ONE UMBRELLA AND INDULGE IN DISCUSSING AND DELIBERATING ON VARIOUS TOP-NOTCH CONCEPTS IN HUMANIZING TECHNOLOGY. SCIENCE IS EXPONENTIALLY GROWING BY LEAPS AND BOUNDS AND WE HAVE TO KEEP OURSELVES ABREAST OF THE LATEST TECHNOLOGIES AND EMBRACE INTERDISCIPLINARY APPROACH. STUDENTS NEED TO PURSUE INTERDISCIPLINARY, MULTI-SKILLED AND APPLICATION-ORIENTED EDUCATION AFTER GRADUATION IN ORDER TO ENHANCE NOT ONLY THEIR EMPLOYABILITY OPPORTUNITIES BUT ALSO THE PROSPERITY OF THEIR FUTURE. THINKING OUT-OF-THE-BOX IS THE BASIC ROOT FOR ALL INNOVATIONS AND INVENTIONS. I STRONGLY BELIEVE THAT THE TECHNICAL EVENTS ARE PROVIDED THE WONDERFUL OPPORTUNITY FOR THE YOUNG MINDS TO VOICE THEIR OWN IDEAS AND VIEWS SO THAT THE FUTURE GENERATION WOULD BE BENEFITED. I WOULD SUGGEST THE SLOGAN “THINK AND LINK; LINK AND THINK” SHOULD DEVELOP INTERDISCIPLINARY RESEARCH WHICH IS THE MOST SOUGHT-AFTER ACTIVITY FOR THE BETTERMENT OF THE HUMAN KIND. I LIKE TO CONGRATULATE OUR DEPARTMENT STUDENTS, AND FACULTY MEMBERS AND ALL THOSE WHO HAVE CONTRIBUTED FOR THE SUCCESSFUL EVENTS.

MY SINCERE AND HEARTY WISHES FOR THE GRAND SUCCESS OF CIVIL DEPARTMENT..

VISION & MISSION OF THE INSTITUTE

Vision of the Institute

Envisioned to transform our institution into a "Global Centre of AcademicExcellence"

Mission of theInstitute

- To provide world class education to the students and to bring out their inherent talents
- To establish state-of- the-art facilities and resources required to achieve excellence in teaching-learning, and supplementary processes
- To recruit competent faculty and staffand to provide opportunity to upgrade their knowledge and skills
- To have regular interaction with the industries in the area of R&D, and offer consultancy, training and testing services
- To establish centers of excellence in the emerging areas of research
- To offer continuing education, andnon-formal vocational education
- programmes that are beneficial to the society

VISION & MISSION OF THE DEPARTMENT

VISION

To evolve a centre of excellence by imparting quality technical education and promote research to meet the emerging challenges in the field of civil Engineering.

MISSION

- **M1:** Provide quality education through innovative teaching and learning practices.
- **M2:** Encourage faculty and students to pursue higher education and carry out socially relevant innovative research thereby establishing centre of excellence in emerging areas of research.
- **M3:** Offer consultancy services using state of the art facilities fulfilling the needs of the industry and society.
- **M4:** Enable of students and faculty to play leadership roles in a sustainable manner by adopting of professional ethics, entrepreneurship activities, interpersonal skills and lifelong learning attitude.

OBJECTIVES & OUTCOMES

Program Educational Objectives

After successful completion of the programme, students will be able to

PEO1: Become as a successful Civil Engineer to meet the demand driven needs in the field of Civil Engineering and related profession or pursue higher study and research or become an entrepreneur.

PEO2: Develop core competence by analyzing ad design of Civil engineering systems with social awareness and responsibilities.

PEO3: Build professionalism, ethical approach, communication skills, and team work in their profession and adapt to modern trends by engaging in lifelong learning.

Program Outcomes

PO1	Application knowledge of mathematics, science, engineering fundamentals
PO2	Problem Analysis.
PO3	Design and Development of Solutions
PO4	Conduct investigations by designing experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions
PO5	Modern Tool Usage
PO6	Assessing societal, health, safety, legal and cultural issues
PO7	Examining Environmental impact and Sustainability
PO8	Commitment to professional ethics.
PO9	Function effectively as an individual, and as a member or leader in diverse teams and in multi disciplinary settings
P10	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
PO11	Examine Project Management and Financial aspects
PO12	Instil Life-long Learning

Program Specific Outcomes (PSOs)

Graduates will able to

1. Analyze the effects of natural calamities like Tsunami, storms, earthquakes, landslides etc. in design of stable structures.

2. Use co-friendly materials and mechanism for sustainable and life-line infrastructures

CHIEF EDITOR'S CORNER

Dr.ASHWINI.B.,M.E.,Ph.D.,

Assistant Professor/CIVIL

Department of Civil Engineering,

E.G.S. Pillay Engineering College,Nagapattinam.

It is an occasion of immense pleasure for the Department of CIVIL Engineering to publish the magazine "**NIRMAN 24**". The Editorial board of department of **NIRMAN 24** wants to thanks all the faculty members and students who have made this issue a success by providing an article. This magazine focuses on the recent trends evolved in the field of CIVIL engineering & wants to provide advanced knowledge and awareness among the students about the same. The Editorial board also wants to thanks the Management of the Institute and Head of the department for inspiring us to go forward in publishing this magazine.

Civil engineering is an important profession because it helps us make our world a better place. Engineers work to improve our transportation systems, our buildings, our water supplies – anything that has an impact on human life

Engineers are responsible for creating solutions that make life easier for everyone involved – from the builders who erect the buildings, to the motorists who use the roads, to the people who live in them.

In our department faculties and students are creating the success to the core of environment and we are establishing the signature of the branch in our district. Our Sincere thanks to all

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ASSOCIATE EDITOR MESSAGE

Greetings, fellow CIVIL enthusiasts!

I'm ARISH, a Final year student and Associate Editor for our departmental magazine. This issue wouldn't be possible without the unwavering dedication of my fellow editors and the invaluable guidance of our Chief Editor, Dr. ASHWINI B. We're also incredibly grateful to the entire department faculty, led by our esteemed Head of the Department for their constant support throughout this journey.

A special thank you goes to EGSPEC management and our department fraternity for recognizing the vitality of student publications and providing us with this exciting opportunity.

Within these pages, you'll discover a diverse and captivating collection of articles and projects showcasing the remarkable talent and innovation brewing within our department. Dive into the world of groundbreaking discoveries in Civil Department, and be inspired by ideas that push the boundaries of our field.

Whether you're a seasoned professional or just embarking on your CIVIL journey, this magazine offers something for everyone. As you explore its content, I encourage you to be inspired, gain new knowledge, and perhaps even contribute your own voice in future editions.

Happy reading!
Sincerely,
ARISH.K
IV-YEAR
*Associate Editor – **NIRMAN 24***

Fabrication of and corrosion prevention mechanisms of tin oxide (SnO2) decorated reduced graphene oxide(rGO) for anodic protection of Zn metal surfaces

Dr.ASHWINI.B .,Assistant Professor

Department of Civil Engineering

E.G.S. Pillay Engineering College, Nagapattinam.

ashwini@egspec.org

The hydrothermal approach was utilized to prepare SnO2 and rGO-SnO2 composite, and its physicochemical properties and corrosion resistance application are examined in this study. The results suggest that the SnO2, rGO-SnO2 composite exhibits a well-defined and uniform morphology, with SnO2 NPs homogeneously distributed and anchored on the rGO. XRD analysis confirms the crystalline tetragonal structure with 19.1 nm and 20.8 crystalline size. Further, the corrosion resistance application of the rGO-SnO2 composite is evaluated through electrochemical measurements, such as potentiodynamic polarization and electrochemical impedance spectroscopy(EIS). The composite-coated substrate is subjected to NaCl electrolyte using a Zn plate. The corrosion performance is compared with that of bare Sn and rGO-SnO2 counterparts to assess the synergistic effect of the composite which exhibits enhanced anticorrosion properties. The synergistic effect of Sn and rGO in the composite offers superior corrosion resistance, making it a promising material for various corrosion-prone applications. Overall, the findings contribute to developing novel and effective strategies for combating corrosion.

It is also suggested that the perfect replacement level of copper slag for sand and GGBS and Metakaolin for cement should be optimized by proper consideration from the experimental results which shows higher performance in concrete characteristics.

Study on Effect of Marble Powder and Waste Foundry Sand as fine aggregates on the properties of Metakaolin Cement concrete

Dr.N.SAKTHESWARAN,Professor

EGS Pillay Engineering College

saktheeshwaran@egspec.org

To bring an challenging and acceptable change in construction industry, upcoming graduates have to be much aware of alternate materials to be used in conventional concrete with improved performances and this study can be an encouraging approach to them. Many research studies have investigated the possible use of industrial by-products such as fly ash from thermal power plants, red mud from aluminium manufacturing industry, copper slag from copper smelting industry, GGBS from steel industry, and waste foundry sand from metal casting industries in cement concrete production. Here, it is investigated on the possibility of utilizing two industrial by-products in the production of concrete for achieving sustainable development. Metakaolin is used for replacing a specific percentage of cement, and waste marble powder and waste foundry sand are used to replace different percentages of conventional fine aggregates (sand) for producing a sustainable concrete. It is observed from the results that properties of cement concrete are influenced by the percentage content of metakaolin, waste marble powder and waste foundry sand.

From this investigation, it is concluded that use of clay kaolin, foundrysand and marble powder is studied for its effective utilization in concrete industry. This could definitely be the trigger key to the graduating readers to achieve great peaks in construction industry. The observance and summarized recommendations are presented here. Interpretating with earlier and present investigations, the Workability of the proposed sustainable concrete mixes decreased due to the presence of metakaolin, marble powder and waste foundry sand. Super plasticizer is necessary to achieve the required workability of the sustainable concrete mixes. The sustainable concrete mix consisting of 5% metakaolin for replacing cement, and 15% of marble powder and 15% of waste foundry sand for replacing conventional fine aggregates achieved higher compressive strength as compared to other mixes considered. The flexural strength and splitting tensile strength of the concrete mix consisting of 5% metakaolin for replacing cement, and 10% of marble powder and 10% of waste foundry sand for replacing conventional fine aggregates was higher than that of other mixes considered. The bond strength of the concrete also improved response when metakaolin used as partial cement replacement and marble powder and foundry sand used as partial replacement for fine aggregate.

Study on influence of copper slag, Furnace slag and Metakaolin in the properties of concrete

Dr.N.SAKTHESWARAN. Professor
Department of Civil Engineering
E.G.S. Pillay engineering college

saktheshwaran@egspec.org

The wastes from the industries can be reused, recycled and reduced by the effective consumption. Moreover, these materials are effectively used as construction materials; the production of sustainable environment is possible. The secondary materials are throwing away from every metal making industries and the wastes are discharged to land, water and air bodies. The waste disposal to land makes the soil unhealthy. The living and non-living things in water bodies are also spoiled. The effective exploitation of industrial wastes is done by using the waste materials in making of concrete. Budding graduates have to overcome very far these issues with alternate construction materials. As a trigger to them here, it is extended from the earlier study to investigate the properties of concrete subjected to acid attack, the behaviour on concrete in reinforced structural members and also the microstructure study using X-Ray Diffractometer and Fourier Transform Infrared Spectroscopy.

This work also encourages the undergraduate and postgraduate professional students to study and find scoping ideas of utilising alternate materials in the construction industry. It is concluded here from the experimental research investigated on concrete by replacing sand with copper slag and by replacing cement with metakaolin and GGBS at various percentages.Hereby, it is concluded that the flexural toughness of concrete was raised when including the copper slag up to 40% and the cement was replaced by each 5% of metakaolin and GGBS. The higher addition of metakaolin creates the compounding effect on the cement matrix which makes the concrete brittle. The flexural toughness was raised by GGBS and MK which possesses the pozzolanic activity.The resistance of the concrete after subjected to aggressive acids such as HCL and H2SO4 was much improved when the copper slag was maintained at 20%. It is also suggested that the perfect replacement level of copper slag for sand and GGBS and Metakaolin for cement should be optimized by proper consideration from the experimental results which shows higher performance in concrete characteristics.

Properties of Nano-Alumina Concrete with Zircon Sand as Fines under Varied Elevated Temperatures

Dr.N.SAKTHESWARAN. Professor
Department of Civil Engineering
E.G.S. Pillay engineering college
saktheshwaran@egspec.org

The concrete construction materials are now being judged not only from their economical characteristics but also from their serviceability. Advancements in the concrete production now also focus on improving the fire resistant behaviour of concrete. The replacement of fine aggregates is much more desirable when they possess adequate fire resistant characteristics. The present research work understands the urgent need to pay attention to the fire resistant behaviour of concrete simultaneously minimizing the use of Natural River aggregate. In addition to the fine aggregate replacement nano alumina is used as cement additive to beneficially support the concrete durability through their nano characteristics. Zircon sand is used upto 50% of the natural river sand aggregate and nano alumina is used at 2% by weight of the cement binder.

Prior concluding the technical summary, the comment for emerging graduates is here to know some of the observation facts of doses of different materials to research on less impact to environment against construction industry is highly the future scope recommended. It is inferred along with previous study (Sakthieswaran et al., 2020), the combined addition of nano alumina with zircon sand proved to be effective in improving the workability of concrete meeting the requirements of concrete. The mechanical strength tests were conducted on concrete at 7, 14, 18, 56 and 90 days. The present stage of research concludes that the splitting tensile strength of concrete also followed the same patterns of increase similar to flexural strength and the values increased with increase in the zircon sand substitution. A saturation point was reached at 30% substitution of nano alumina beyond which no increment in the tensile strength was observed. Contrarily the split tensile strength increased at all temperatures indicating the contribution of zircon sand in increasing tensile strength at all temperatures. The increment in the split tensile strength may be attributed by the addition of nano alumina and zircon sand substitution that increase the strength of interfacial transition zone leading to reduced bleeding and shrinkage. The specimens for the later age testing were caused under water for 28 days after which they were taken out and maintained in open air until the testing days is reached. The durability properties were tested on concrete cubes subjected to 28 days curing. The rapid chloride ion penetration of the concrete containing zircon sand and nano alumina showed lower values when compared to the control concrete. The chloride ion penetration was also much lower for the concrete at all temperatures due to the increased pore structure.

Sustainable Concrete made with seawater, Metakaolin and flyash

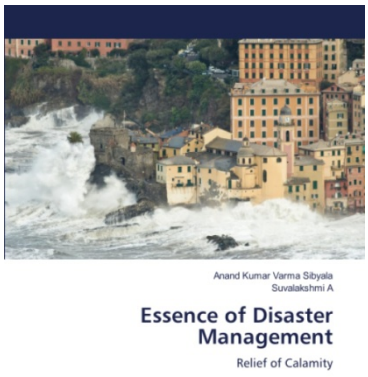
Dr.N.H.AGILANDESHWARI.,Assitant Professor
Department of Civil Engineering
E.G.S. Pillay engineering college
agilandeshwari@egspec.org

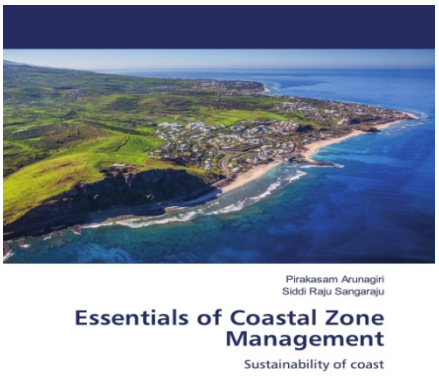
The research investigates the use of seawater as both a mixing and curing agent in M30 grade concrete, combined with the partial replacement of cement by fly ash and metakaolin. Specifically, the concrete specimens were prepared with varying proportions of fly ash (30% by weight of cement) and metakaolin (5%, 10%, and 15% by weight of cement). The seawater was sourced locally from the marine environment, replacing the conventional freshwater typically used in concrete production. Comprehensive testing procedures were employed to evaluate the mechanical properties of these concrete mixtures, focusing on key parameters such as compressive strength and flexural strength. The experimental results were then compared with those of conventional concrete mixes to assess the effectiveness of these sustainable alternatives. The findings from this research are quite promising. They suggest that utilizing seawater, along with fly ash and metakaolin, can enhance the mechanical properties of concrete. This approach not only has the potential to reduce the environmental impact of concrete production but also offers a way to conserve freshwater resources. Such innovative methods could be transformative for the construction industry, promoting eco-friendly practices and helping to address some of the environmental challenges we face today. The study provides valuable insights into the feasibility and practicality of implementing these sustainable techniques in real-world construction projects. Index Terms: Alternative materials, Seawater,

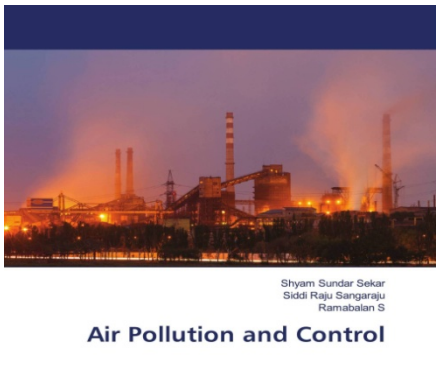
In this study, the key findings highlight the critical role of material selection and curing methods in customizing concrete formulations. Optimal combinations of supplementary materials, such as Fly ash and Metakaolin, alongside seawater for mixing and freshwater for curing, result in superior concrete performance. By fine-tuning these factors, the study demonstrates the potential to advance sustainable and high-performance concrete solutions in construction applications. The experimental investigation conducted in this study unveiled a promising avenue for enhancing the sustainability and mechanical properties of concrete. of concrete production• in the construction industry. By substituting cement with Metakaolin and Fly ash, and using seawater and freshwater for mixing and curing, greenhouse gas emissions are reduced, and industrial byproducts are reused, aligning with circular economy principles.

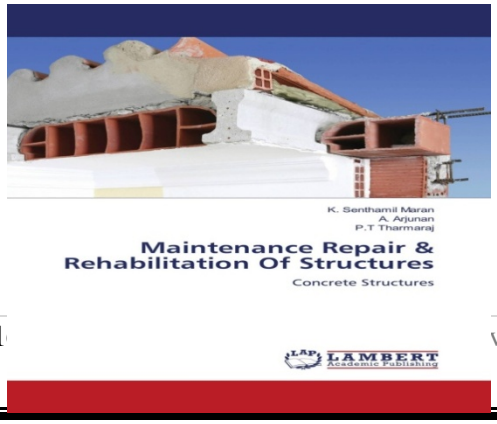
BOOKS PUBLICATIONS

S.no	Name of the teacher	Title of the book/chapters published	Name of the publisher
1.	Dr.S.Anand kumar Varma	Essence of Disaster Management	Lambert Academic Publishing
2.	Mr.Shyam sundar	Air Pollution and Control	Lambert Academic Publishing
3.	Dr.Ashwini.B	Ethical Leadership: Balancing Profit and Social Impact	SAN International Scientific Publications
4.	Mr.Pirakasam	Essential of Coastal zone Management	Lambert Academic Publishing
5.	A.Arjunan	Maintenance Repair & Rehabilitation of Structures	Lambert Academic Publishing



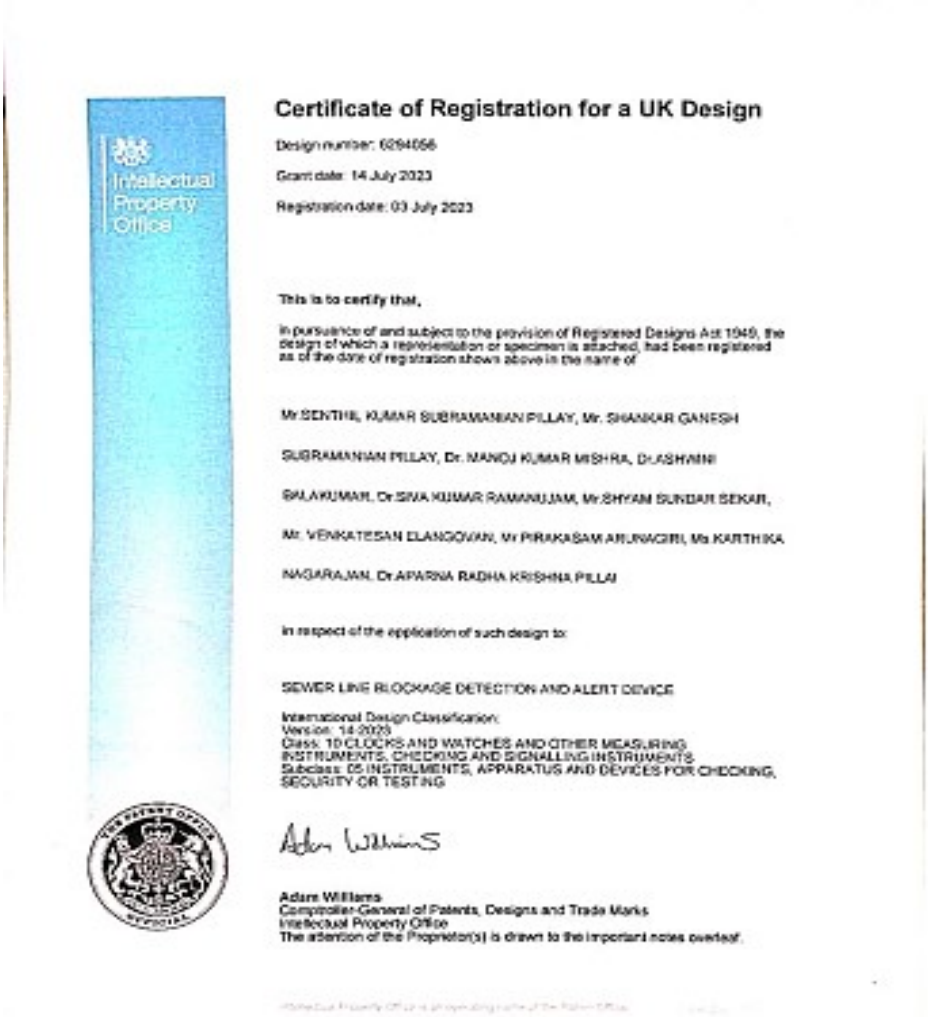






PATENT PUBLISHED

S.No	Title of the invention	Date of filing of Application	Application No	Date of Publication
1.	Sewer line Blockage Detection and Alert Device	03/07/2023	6294056	15/07/2023
2.	Internal Door and Shutter Locking Device with Alert System	03/07/2023	6294060	13/07/2023



Intellectual Property Office

Certificate of Registration for a UK Design

Design number: 6294056

Grant date: 14 July 2023

Registration date: 03 July 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

Mr SENTHIL KUMAR SUBRAMANIAN PILLAY, Mr. SHANKAR GANESH SUBRAMANIAN PILLAY, Dr. MANOJ KUMAR MISHRA, Dr ASHWINI BALAKUMAR, Dr SIVA KUMAR RAMANUJAM, Mr SHYAM SUNDAR SEKAR, Mr. VENKATESAN ELANGOVAN, Mr PIRAKASAM ARUNAGIRI, Ms KARTHIKA NAGARAJAN, Dr APARNA RADHA KRISHNA PILLAI

in respect of the application of such design to:

SEWER LINE BLOCKAGE DETECTION AND ALERT DEVICE

International Design Classification:
Version: 14-2023
Class: 10 CLOCKS AND WATCHES AND OTHER MEASURING INSTRUMENTS, CHECKING AND SIGNALLING INSTRUMENTS
Subclass: 05 INSTRUMENTS, APPARATUS AND DEVICES FOR CHECKING, SECURITY OR TESTING

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.

Certificate of Registration for a UK Design

Design number: 6294000

Grant date: 10 July 2023

Registration date: 03 July 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

Mr. SENTHIL KUMAR SUBRAMANIAN PILLAY, Mr. SHANKAR GANESH SUBRAMANIAN PILLAY, Dr. MANOJ KUMAR MISHRA, Dr.ASHWINI BALAKUMAR, Dr.VANITHA JANAKIRAMAN, GOVINDARAJU HARINARAYAN, Dr.MALLIKA CHINNASAMY, Dr.KARTHI RAJENDAN

In respect of the application of such design to:

INTERNAL DOOR AND SHUTTER LOCKING DEVICE WITH ALERT SYSTEM

International Design Classification:
Version: 14-2023
Class: 10 CLOCKS AND WATCHES AND OTHER MEASURING INSTRUMENTS, CHECKING AND SIGNALLING INSTRUMENTS
Subclass: 05 INSTRUMENTS, APPARATUS AND DEVICES FOR CHECKING, SECURITY OR TESTING

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.

CONSULTANCY SERVICES DONE

E.G.S. PILLAY ENGINEERING COLLEGE, NAGAPATTINAM-611002
(An ISO 9001:2015 Certified Institution)
(Approved by AICTE, New Delhi, Approved by Govt.of. Tamil Nadu)
(Affiliated to Anna University Chennai)
DEPARTMENT OF CIVIL ENGINEERING
Consultancy Work plan- Nov 2023-December 2024
CONSOLIDATED BILL STATEMENT FOR MATERIAL TESTING

S.No	T. Date	Cl. Name	Name of the Test	Amount	R.No	Bill Date
1.	19.11.2023	JWIL	Cube Test-3No's	1000	EGSPEC/RE/23/268	16.11.2023
2.	15.12.2023	JWIL	Cube Test-9 No's	3000	EGSPEC/RE/23/273	27.11.2023
3.	27.11.2023	Salya Const	Cube Test-3No's	1,500	EGSPEC/RE/23/273	27.11.2023
4.	02.06.2023	Karaikal PWD	CA Testing-G 1	2500	EGSPEC/RE/23/303	03.01.2024
5.	02.06.2023	Karaikal PWD	CA Testing-G2	2500	EGSPEC/RE/23/304	30.01.2024
6.	10.09.2023	P.MuthuKumaran,Panaiyur	Cement,FA,CA.Steel	13,000	EGSPEC/RE/23/313	19.01.2024
7.	12.12.2023 &10.09.2023	M.V.Vijayendran,Kunniyur	Cement,FA,CA.Steel	13,000	EGSPEC/RE/23/312	19.01.2024
8.	12.12.2023 &10.09.2023	V.Vishwanathan,Elavanur	Cement,FA,CA.Steel	13,000	EGSPEC/RE/23/314	19.01.2024
9.	12.12.2023	R.Vivek,Vangathankudi	Cement,FA,CA.Steel	13,000	EGSPEC/RE/23/315	19.01.2024
10.	12.12.2023 &10.09.2023	M.S.T Raj Constructions	Cement,FA,CA.Steel	13,000	EGSPEC/RE/23/31	24.01.2024
11.	12.12.2023 &10.09.2023	R.K.S Constructions, Road.Kottur	Cement,FA,CA.Steel	14,000	EGSPEC/RE/23/31	24.01.2024
12.	12.2.2024	P.W.D Karaikal,Nagendran.K.R karaikal	Cement,FA,CA.Steel	13,000		03.02.2024
TOTAL AMOUNT				1,02,500 /-		

Consultancy in charge 07/02/24
Dr. B.ASHWINI, M.E.,Ph.D.,
Assistant Professor
Department of Civil Engineering
E.G.S. Pillay Engineering College,
Nagapattinam - 611 002.

claimed on 7 nov 12/2/24

HOD 7/2/24
Dr.N.H.Agilandeswari, M.Tech., Ph.D.,
Assistant Professor & Head
Department of Civil Engineering
E.G.S. Pillay Engineering College,
Nagapattinam - 611 002.

In our department various civil field oriented consultancy services had been undertaken and the test required for the clients has been delivered with high accuracy on time. In the above mentioned figure it is shown the total number of consultancy works done and the details of the clients who availed the consultancy services of our department.

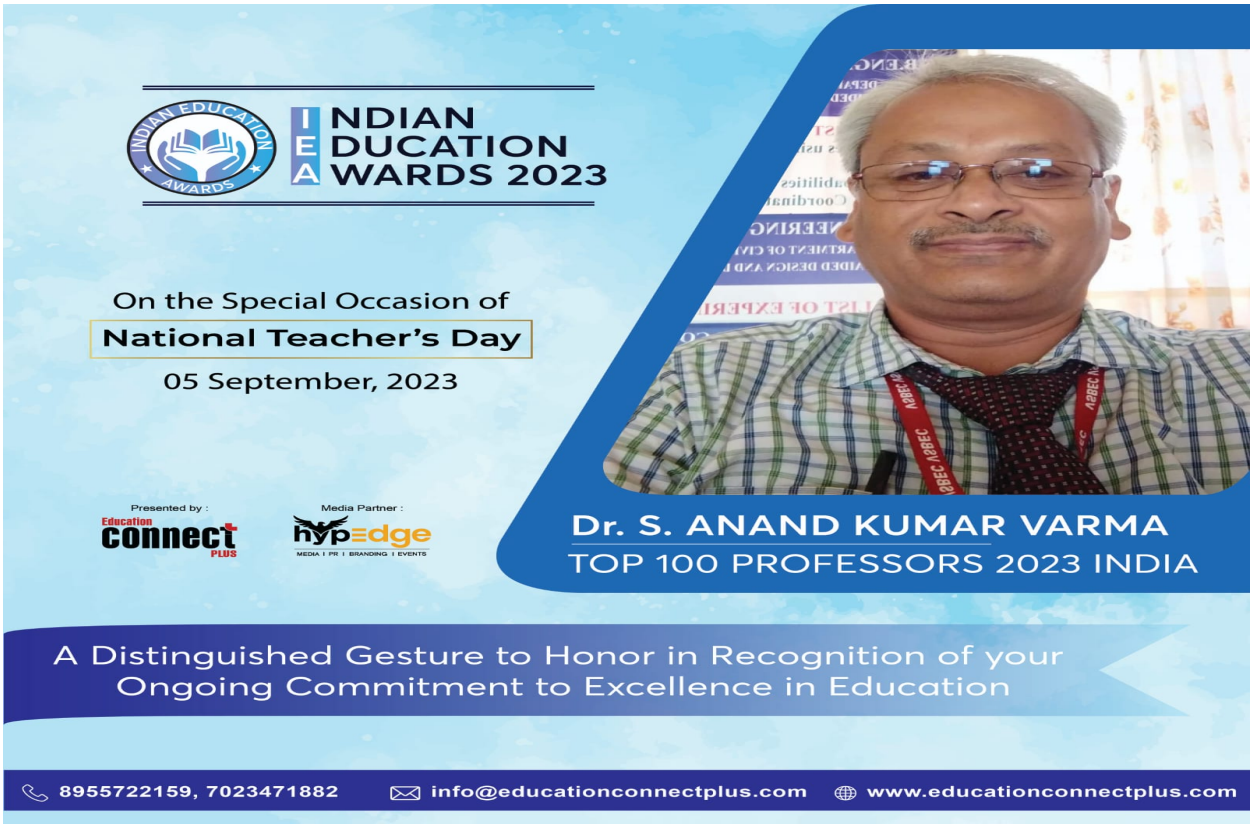
FOOD FOR THOUGHT

Bharat Ratna Sir Mokshagundam Visvesvaraya (1861-1962), widely known as Sir MV, was a distinguished and India's pioneer civil engineer, statesman, and scholar. He held the position of Dewan of Mysore from 1912 to 1918, and for his outstanding contribution, he is known as the Father of Modern Mysore. Sir M. Visvesvaraya is known for various outstanding works civil construction field and also administration works including block systems of irrigation, automated flood gates, and a strategy on economic planning called the Visvesvaraya Plan, to name a few. Engineer's Day **is** celebrated in India in his honour.

The Brihadeshwara Temple at Thanjavur was built by Rajaraja I in 1009 CE for worshipping Lord Shiva. Many of his achievements are inscribed here..This 212 ft (64.8 meter) towering Shiva temple is home to one of the largest Shiva Lingas of the country. A majestic Nandhi (bull), measuring a gigantic 19.4 ' x 8.23' x 12' (5.94 x 2.51 x 3.66 in meters) stands guard over the temple. This is the second largest Nandhi in India and is carved out of a single stone.

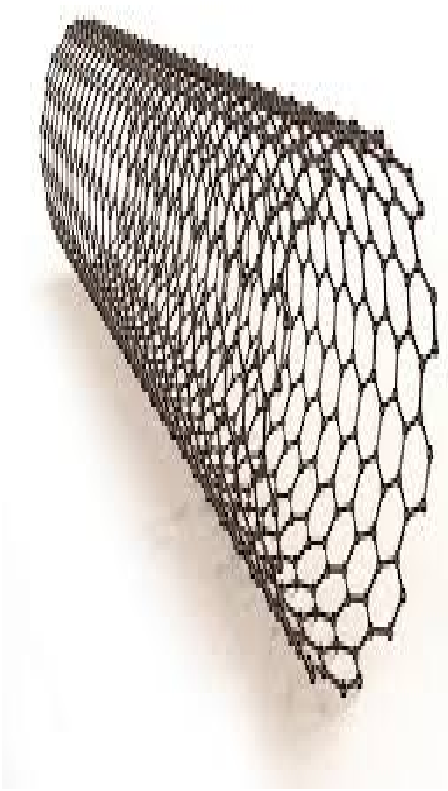
Carbon nanotubes (CNT) are allotropic forms of elemental carbon that consist of hexagonal sheets of single-layer hybridized carbon atoms rolled-up in cylindrical form. CNTs have a diameter of a few nanometers and a length of several micrometers. They have excellent electronic and mechanical properties, high chemical and thermal stability, and a high specific adsorption surface area, making them versatile adsorbents for water pollutants in wastewater treatment systems. CNTs are also used in nanofiltration membranes and nanosensors.

KNOWLEDGE WINDOW



Best 100 Professor of India Award won by our HOD.

Students Utilization of Laboratory for Practical and Software Trainings



Software Trainings for Students

Cricket Tournament won by our Department Students


BRICK IT!
SECOND PLACE
NIRMAL V
MOHAMED SALMAN H
ABDUL HASEEB A
NATIONAL INSTITUTE OF TECHNOLOGY PUDUCHERRY
Final round
1st round
2nd round

STUDENTS PUBLICATION

Sustainable Concrete made with seawater, Metakaolin and flyash

S.Gokulanathan, V.Harshidha, M.Arunkumar, A.BraveenKumar-IV Year Students
Department of Civil Engineering,
E.G.S. Pillay Engineering College,
Nagapattinam

The research investigates the use of seawater as both a mixing and curing agent in M30 grade concrete, combined with the partial replacement of cement by fly ash and metakaolin. Specifically, the concrete specimens were prepared with varying proportions of fly ash (30% by weight of cement) and metakaolin (5%, 10%, and 15% by weight of cement). The seawater was sourced locally from the marine environment, replacing the conventional freshwater typically used in concrete production. Comprehensive testing procedures were employed to evaluate the mechanical properties of these concrete mixtures, focusing on key parameters such as compressive strength and flexural strength. The experimental results were then compared with those of conventional concrete mixes to assess the effectiveness of these sustainable alternatives. The findings from this research are quite promising. They suggest that utilizing seawater, along with fly ash and metakaolin, can enhance the mechanical properties of concrete. This approach not only has the potential to reduce the environmental impact of concrete production but also offers a way to conserve freshwater resources. Such innovative methods could be transformative for the construction industry, promoting eco-friendly practices and helping to address some of the environmental challenges we face today. The study provides valuable insights into the feasibility and practicality of implementing these sustainable techniques in real-world construction projects.

In this study, the key findings highlight the critical role of material selection and curing methods in customizing concrete formulations. Optimal combinations of supplementary materials, such as Fly ash and Metakaolin, alongside seawater for mixing and freshwater for curing, result in superior concrete performance. By fine-tuning these factors, the study demonstrates the potential to advance sustainable and high-performance concrete solutions in construction applications. The experimental investigation conducted in this study unveiled a promising avenue for enhancing the sustainability and mechanical properties of concrete. By substituting cement with Metakaolin and Fly ash, and alternating between seawater and freshwater for mixing and curing, notable improvements were seen.

Effect of Mechanical Properties of Concrete Using Nano Silica and Partial Replacement of Fly Ash in Cementitious Material

RAMPRASATH.K- IV Year Students
Department of Civil Engineering,
E.G.S. Pillay Engineering College,
Nagapattinam

This study aims to evaluate the mechanical properties of concrete by simultaneously utilizing nano titanium dioxide and replacing a portion of fly ash in the cementitious material. The incorporation of nano titanium dioxide as a supplementary cementitious material, coupled with strategically replacing a segment of conventional fly ash in the cement blend, presents the prospect of noteworthy enhancements. The study delves into a comprehensive exploration of the impacts of nano titanium dioxide and fly ash replacement on the concrete's mechanical properties. Our goal is to identify the optimal dosage for fly ash replacement and nano titanium dioxide addition, while also investigating the dispersion solution and method to ensure the effective dispersion of nano titanium dioxide in the concrete mix.

NANO SILICA

FLYASH

In conclusion, this study focused on improving the mechanical properties of concrete by simultaneously incorporating nano titanium dioxide and replacing a portion of fly ash in the cementitious material. The study identified an optimal dosage of 0.8% for nano titanium dioxide, highlighting OPC 53 grade cement as the most effective in providing enhanced strength for the concrete mix. A 35% replacement of cement with fly ash emerged as a judicious choice, striking a balance between performance and cost-effectiveness. The recommendation of M-sand as a fine aggregate further contributes to an economical and suitable mix. To ensure the effective dispersion of nano titanium dioxide within the concrete matrix, the study endorsed the use of Polycarboxylic Ether solution and magnetic stirring as the most efficient methods. These findings collectively offer valuable insights into concrete mix design, presenting a promising strategy for the development of sustainable and high-performance concrete formulations across diverse construction applications. The integration of nano materials and strategic replacement of traditional components represent a step forward in advancing the durability and mechanical strength of concrete structures, contributing to the overall sustainability of construction practices

Effect of Mechanical Properties of Concrete Using Nano Titanium Dioxide and Partial Replacement of Fly Ash in Cementitious Material

Arthi.K- IV Year Students
Department of Civil Engineering,
E.G.S. Pillay Engineering College,
Nagapattinam

This study aims to evaluate the mechanical properties of concrete by simultaneously utilizing nano titanium dioxide and replacing a portion of fly ash in the cementitious material. The incorporation of nano titanium dioxide as a supplementary cementitious material, coupled with strategically replacing a segment of conventional fly ash in the cement blend, presents the prospect of noteworthy enhancements. The study delves into a comprehensive exploration of the impacts of nano titanium dioxide and fly ash replacement on the concrete's mechanical properties. Our goal is to identify the optimal dosage for fly ash replacement and nano titanium dioxide addition, while also investigating the dispersion solution and method to ensure the effective dispersion of nano titanium dioxide in the concrete mix.

Nano Titanium Dioxide

FLYASH

In conclusion, this study focused on improving the mechanical properties of concrete by simultaneously incorporating nano titanium dioxide and replacing a portion of fly ash in the cementitious material. The study identified an optimal dosage of 0.8% for nano titanium dioxide, highlighting OPC 53 grade cement as the most effective in providing enhanced strength for the concrete mix. A 35% replacement of cement with fly ash emerged as a judicious choice, striking a balance between performance and cost-effectiveness. The recommendation of M-sand as a fine aggregate further contributes to an economical and suitable mix. To ensure the effective dispersion of nano titanium dioxide within the concrete matrix, the study endorsed the use of Polycarboxylic Ether solution and magnetic stirring as the most efficient methods. These findings collectively offer valuable insights into concrete mix design, presenting a promising strategy for the development of sustainable and high-performance concrete formulations across diverse construction applications. The integration of nano materials and strategic replacement of traditional components represent a step forward in advancing the durability and mechanical strength of concrete structures, contributing to the overall sustainability of construction practices

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