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JJ COLLEGE
ENGINEERING AND TECHNOLOGY
AUTONOMOUS
SOWDAMBIKAA GROUP OF INSTITUTIONS

ESTD. 1994

Institution Making Students Ready for "Industry 4.0"

DEPARTMENT OF CIVIL ENGINEERING

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NEWS LETTER
DEPARTMENT OF CIVIL ENGINEERING

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VISION

To impart latest knowledge and skills so as to kindle innovation and creativity among students

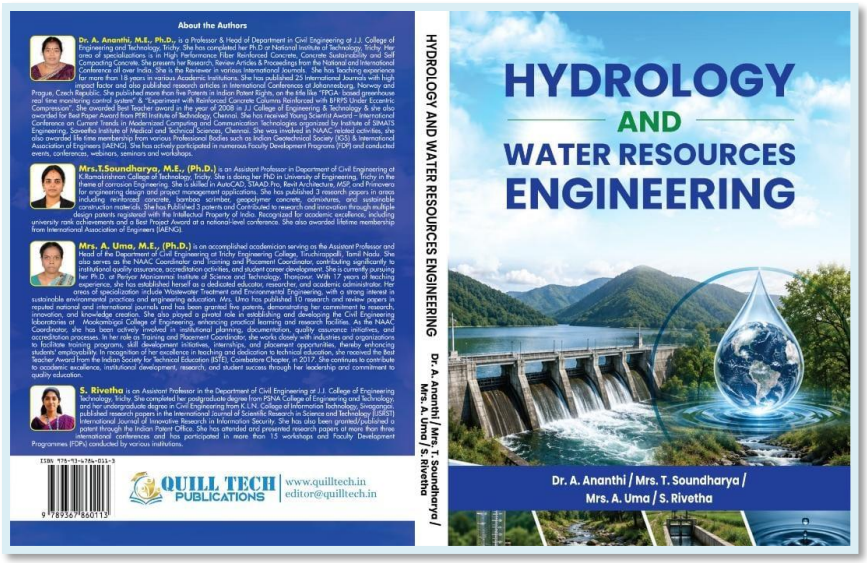
MISSION

- To provide quality Education by preparing a strong willed, socially committed and Dynamic Engineers for the Future.
- To enrich their knowledge in the areas of academic, research and industry by moulding professionals in the field of Civil Engineering to build a sustainable world.
- To impart quality education and mould technically sound, ethically responsible professionals in the field of Civil Engineering.
- To prepare the students with a broad skill set of creativity, critical thinking and effective communication skills to meet the desired needs of the society.
- To develop state of the art infrastructure and research for effective teaching learning process.
- To strengthen soft skills especially for rural students through co-curricular and extracurricular activities.

MAJOR EVENT

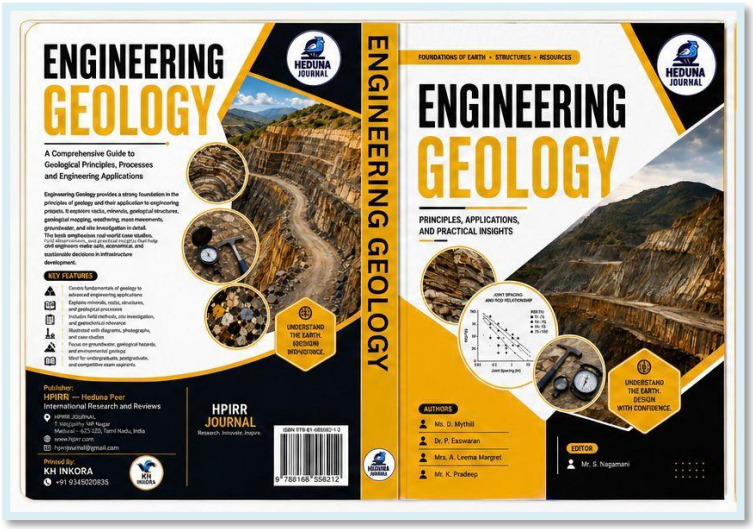
A one-day workshop on "Understanding Corrosion in Reinforced Concrete: From Fundamentals to Protection Strategies" organized by the Department of Civil Engineering, J.J. College of Engineering and Technology. The workshop is scheduled for 8 August, from 10:00 a.m. to 12:30 p.m., and features Dr. Ashok M, Scientist-E from CSIR–Central Electrochemical Research Institute, Karaikudi, as the resource person. The event is coordinated by Ms. S. Rivetha and organized by Dr. A. Ananthi, Professor/HOD, with the aim of providing participants with practical knowledge of concrete corrosion and its protection methods.

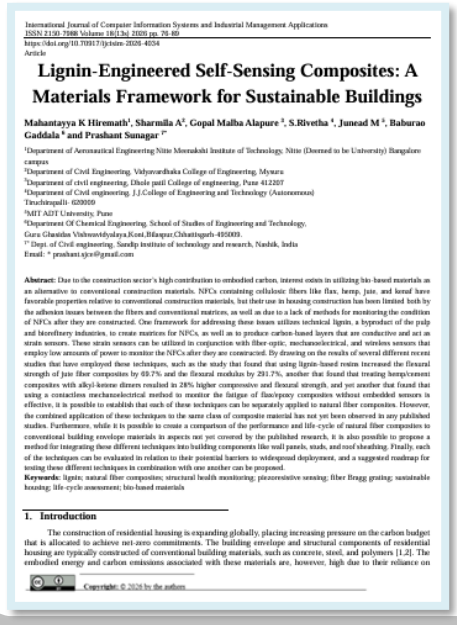
FACULTY ACHIVEMENT



Dr. A. Ananthi, Professor & HoD/Civil Engineering Department and Ms.S.Rivetha Assistant Professor had published a book titled **"Hydrology and Water Resources Engineering."** It focuses on the study and management of water resources, including dams, rivers, water flow, and sustainable water engineering. The cover features a scenic dam and mountainous landscape, highlighting the importance of water in engineering and environmental management.

Mr. K. Pradeep has published of Book Publication issued by Heduna Peer International Research and Reviews. It is presented to Mr. K. Pradeep, Assistant Professor in the Department of Civil Engineering at J. J. College of Engineering and Technology (Autonomous), for authoring the book titled "Engineering Geology." The certificate recognizes his contribution, dedication, and effort in preparing and publishing the book.

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Article

Lignin-Engineered Self-Sensing Composites: A Materials Framework for Sustainable Buildings

Mahantayya K Hiremath[1], Sharmila A[2], Gopal Malba Alapure [3], S.Rivetha [4], Junead M [5], Baburao Gaddala [6] and Prashant Sunagar [7*]

[1]Department of Aeronautical Engineering Nitte Meenakshi Institute of Technology, Nitte (Deemed to be University) Bangalore campus
[2]Department of Civil Engineering, Vidyavardhaka College of Engineering, Mysuru
[3]Department of civil engineering, Dhole patil College of engineering, Pune 412207
[4]Department of Civil engineering, J.J.College of Engineering and Technology (Autonomous) Tiruchirapalli- 6200009
[5]MIT ADT University, Pune
[6]Department Of Chemical Engineering, School of Studies of Engineering and Technology, Guru Ghasidas Vishwavidyalaya,Koni,Bilaspur,Chhattisgarh-495009.
[7*] Dept. of Civil engineering, Sandip institute of technology and research, Nashik, India
Email: * prashant.sjcet@gmail.com

Abstract: Due to the construction sector's high contribution to embodied carbon, interest exists in utilizing bio-based materials as an alternative to conventional construction materials. NFCs containing cellulosic fibers like flax, hemp, jute, and kenaf have favorable properties relative to conventional construction materials, but their use in housing construction has been limited both by the adhesion issues between the fibers and conventional matrices, as well as due to a lack of methods for monitoring the condition of NFCs after they are constructed. One framework for addressing these issues utilizes technical lignin, a byproduct of the pulp and biorefinery industries, to create matrices for NFCs, as well as to produce carbon-based layers that are conductive and act as strain sensors. These strain sensors can be utilized in conjunction with fiber-optic, mechanoelectrical, and wireless sensors that employ low amounts of power to monitor the NFCs after they are constructed. By drawing on the results of several different recent studies that have employed these techniques, such as the study that found that using lignin-based resins increased the flexural strength of jute fiber composites by 69.7% and the flexural modulus by 293.7%, another that found that treating hemp/cement composites with alkyl-ketene dimers resulted in 28% higher compressive and flexural strength, and yet another that found that using a contactless mechanoelectrical method to monitor the fatigue of flax/epoxy composites without embedded sensors is effective, it is possible to establish that each of these techniques can be separately applied to natural fiber composites. However, the combined application of these techniques to the same class of composite material has not yet been observed in any published studies. Furthermore, while it is possible to create a comparison of the performance and life-cycle of natural fiber composites to conventional building envelope materials in aspects not yet covered by the published research, it is also possible to propose a method for integrating these different techniques into building components like wall panels, studs, and roof sheathing. Finally, each of the techniques can be evaluated in relation to their potential barriers to widespread deployment, and a suggested roadmap for testing these different techniques in combination with one another can be proposed.

Keywords: lignin; natural fiber composites; structural health monitoring; piezoresistive sensing; fiber Bragg grating; sustainable housing; life-cycle assessment; bio-based materials

1. Introduction

The construction of residential housing is expanding globally, placing increasing pressure on the carbon budget that is allocated to achieve net-zero commitments. The building envelope and structural components of residential housing are typically constructed of conventional building materials, such as concrete, steel, and polymers [1,2]. The embodied energy and carbon emissions associated with these materials are, however, high due to their reliance on

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Ms. S. Rivetha, Assistant Professor has published a article in International Journal of Computer Information Systems and Industrial Management, in title of "Lignin-Engineered Self-sensing Composites: A Materials Framework for Sustainable Buildings" Scopus Indexed Q_3 journal.

ORIGINAL

पेटेंट कार्यालय, भारत सरकार The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

डिजाइन सं. / Design No. : 511545-001

तारीख / Date : 30/07/2026

पारस्परिकता तारीख / Reciprocity Date* :

देश / Country :

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो *ROBOT FOR CONSTRUCTION INSPECTION AND LAND MAPPING* से संबंधित है, का पंजीकरण, श्रेणी 15-04 में 1.Er. M. Shahul Hameed 2. Mr. S. Vigneshkannan 3.Dr. R. Abiraami 4.Dr. RA. B. Depaa 5.Dr. M. Soundar Rajan 6.Ms. K. Gokila 7.Mr. C. Sivasanthosh 8.Mr. K. Pradeep के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 15-04 in respect of the application of such design to *ROBOT FOR CONSTRUCTION INSPECTION AND LAND MAPPING* in the name of 1.Er. M. Shahul Hameed 2. Mr. S. Vigneshkannan 3.Dr. R. Abiraami 4.Dr. RA. B. Depaa 5.Dr. M. Soundar Rajan 6.Ms. K. Gokila 7.Mr. C. Sivasanthosh 8.Mr. K. Pradeep.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अभ्यधीन प्रावधानों के अनुसरण में।

In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

जारी करने की तिथि / Date of Issue : 27/08/2026

महानियंत्रक पेटेंट, डिजाइन और व्यापार चिह्न
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The reciprocity date (if any) which has been allowed and the name of the country. Copyright in the design will subsist for ten years from the date of Registration, and may under the terms of the Act and Rules, be extended for a further period of five years. This Certificate is not for use in legal proceedings or for obtaining registration abroad.

Mr. K. Pradeep, Assistant Professor has published a Design Patent in title of "Robot for Construction Inspection and Land mapping" design no: 511545-001, by Intellectual Property India in the date of 30.07.2026 and issued in 27.08.2026.

STUDENTS ACHIVEMENT

The image shows a formal Certificate of Participation issued by the Department of Civil Engineering, Kongunadu College of Engineering and Technology (Autonomous) for a One Day National Level Workshop on "Drone-Based Surveying and Geospatial Mapping." The certificate confirms that **M. Aslam and A. C. Magi Sudhan** from J.J. College of Engineering and Technology participated in the workshop, which was organized by the Department of Civil Engineering and held on 25.08.2026. The workshop focused on modern surveying and mapping technologies involving drones and geospatial applications, which are increasingly important in civil engineering for land surveying, topographical mapping, construction planning, and data collection.

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DEPARTMENT OF CIVIL ENGINEERING
Organizes
One Day National Level
Workshop on
"Drone-Based Surveying and Geospatial Mapping"
Certificate of Participation

This is to certify that Mr./Ms. A.C. MAGI SUDHAN of J.J. COLLEGE OF ENGINEERING AND TECHNOLOGY has participated in the One Day National Level Workshop on **"Drone-Based Surveying and Geospatial Mapping"** Organized by the Department of Civil Engineering at Kongunadu College of Engineering and Technology (Autonomous) on 25.08.2026.

HoD / Civil Principal

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DEPARTMENT OF CIVIL ENGINEERING
Organizes
One Day National Level
Workshop on
"Drone-Based Surveying and Geospatial Mapping"
Certificate of Participation

This is to certify that Mr./Ms. M. ASLAM of J.J. COLLEGE OF ENGINEERING AND TECHNOLOGY has participated in the One Day National Level Workshop on **"Drone-Based Surveying and Geospatial Mapping"** Organized by the Department of Civil Engineering at Kongunadu College of Engineering and Technology (Autonomous) on 25.08.2026.

HoD / Civil Principal