CIVIL ENGINEERING NEWSLETTER

AADHARA

Edition May /June 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 andperform societal based research***
- ***Exposure to latest technologies in Civil Engineering through industry-instituteinteraction 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

1. 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

2. To analyze, design, construct Civil Engineering traditional and modern structures

3. To perform investigation on any complicated Civil Engineering problems by conducting research using modern equipments and software tools

4. To communicate and develop strong inter- and intra-personal skills to prepare them for placement and higher studies

5. To be self-motivated towards lifelong learning and entrepreneurship

STUDENTS ACHIEVEMENT

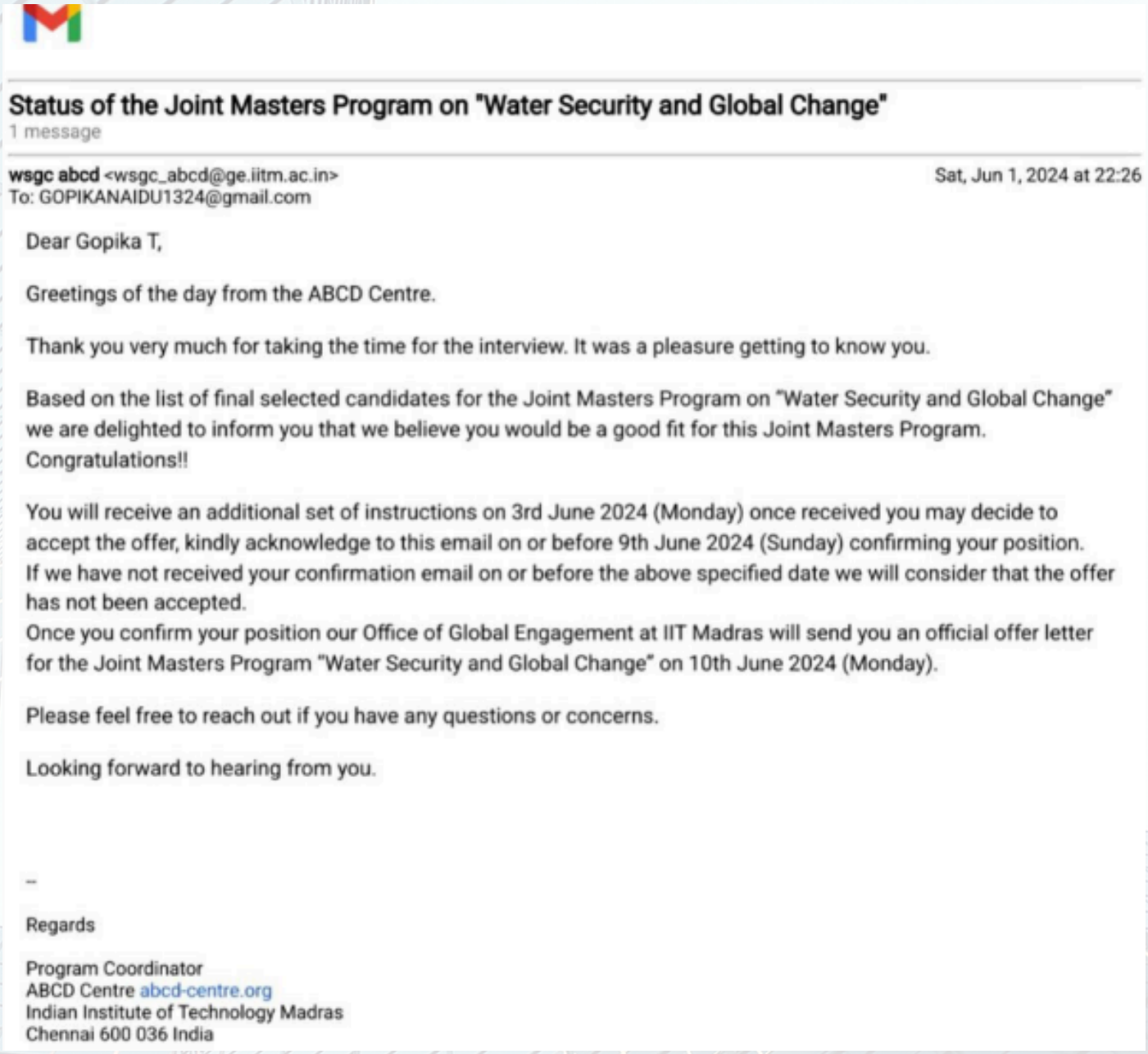
CSIR-Structural Engineering Research Centre

Dr. TVSR Appa Rao Summer Internship 2024

Gunanandhini R	Sri Krishna College of Engineering and Technology, Coimbatore

III year Civil Engineering student R.Gunanandhini has been selected for the prestigious Dr. TVSR Appa Rao Summer Internship 2024 organized by CSIR-Structural Engineering Research Centre. The internship spans for 4 to 6 weeks during the summer vacation in CSIR research centers.

STUDENTS ACHIEVEMENT



Status of the Joint Masters Program on "Water Security and Global Change"
1 message

wsgc abcd <wsgc_abcd@ge.iitm.ac.in> Sat, Jun 1, 2024 at 22:26
To: GOPIKANAIDU1324@gmail.com

Dear Gopika T,

Greetings of the day from the ABCD Centre.

Thank you very much for taking the time for the interview. It was a pleasure getting to know you.

Based on the list of final selected candidates for the Joint Masters Program on "Water Security and Global Change" we are delighted to inform you that we believe you would be a good fit for this Joint Masters Program. Congratulations!!

You will receive an additional set of instructions on 3rd June 2024 (Monday) once received you may decide to accept the offer, kindly acknowledge to this email on or before 9th June 2024 (Sunday) confirming your position. If we have not received your confirmation email on or before the above specified date we will consider that the offer has not been accepted.
Once you confirm your position our Office of Global Engagement at IIT Madras will send you an official offer letter for the Joint Masters Program "Water Security and Global Change" on 10th June 2024 (Monday).

Please feel free to reach out if you have any questions or concerns.

Looking forward to hearing from you.

--

Regards

Program Coordinator
ABCD Centre abcd-centre.org
Indian Institute of Technology Madras
Chennai 600 036 India

IV year Civil Engineering student, T. Gopika has been selected for the International Joint Masters program for Water Security and Global Change at IIT Madras. She will spend 9 months at IIT Madras and the rest of her PG program in Germany as a foreign exchange student.

STUDENTS ACHIEVEMENT

IV year Civil Engineering students, Saikrupa S, Srikaran R, Charuthy A and Hariram K have attended TNSDC Naan Mudhalvan - Niral Thiruvizha 2024 Grand Final Review and presented their project work to the expert committee on 25th June 2024 in Government College of Engineering and Technology, Coimbatore. The project was Self Healing Geopolymer Concrete with Utilization of Construction and Demolition Waste, under the theme of Clean and Green Technology.

Faculty Guide:

Dr. R. Chandra Devi, Associate Professor

FACULTY CONTRIBUTION

R&D | journal Publication| CIVIL

REVISTA MATÉRIA V.29 N.2
ISSN 1517-7076 article e20230368, 2024

Analysis of mechanical performance and durability of repair mortar with partial replacement of tufa stones with aggregates

Ramakrishnan Subramanian[1], Yogeshwaran Venkatraman[1]

[1]Sri Krishna College of Engineering and Technology, Department of Civil Engineering. Coimbatore, India.
e-mail: srkcivil@gmail.com, svyogi23190@gmail.com

ABSTRACT

In this study, the mortars utilized in the restoration projects need to be compatible with the conventional materials that were first used in these structures, both in terms of their mechanical and physiochemical qualities. Here, varying proportions of tufa stone powder – 37 and 42 percent by weight of the mixture, are used to partially replace the fine aggregate mixed mortars for repairs (M1, M2). In order to compare the performance of the third type of mortar (M3) with the tufa stone-based combinations, it was used in addition to the previously made mortars (M1, M2). The three types of mortars were thoroughly evaluated by examining their mechanical properties and durability qualities in conjunction with the tufa stone. The prepared mortar M2, out of all the mortars tested, which had a higher percentage of tufa stone powder substitution and a lower binder content, performed the worst mechanically, according to the data. The compressive and flexural strength of M2 mortar mix is 1.12 MPa and 0.72 MPa tested at 28 days. Similarly, the UPV, shear strength and shear interface for the M2 mortar mix is 0.71 MPa, 0.52 MPa and 1208 m/s at 60 days respectively. This implies that in comparison to the traditional tufa masonry, this specific mortar is less compact and more flexible. The created mortar (M2) has similar thermal qualities and is long-lasting like tufa stone found in historical sites.

Keywords: Mortar repair; Tufa stone; Robustness; Physical and Mechanical properties; Characterization process.

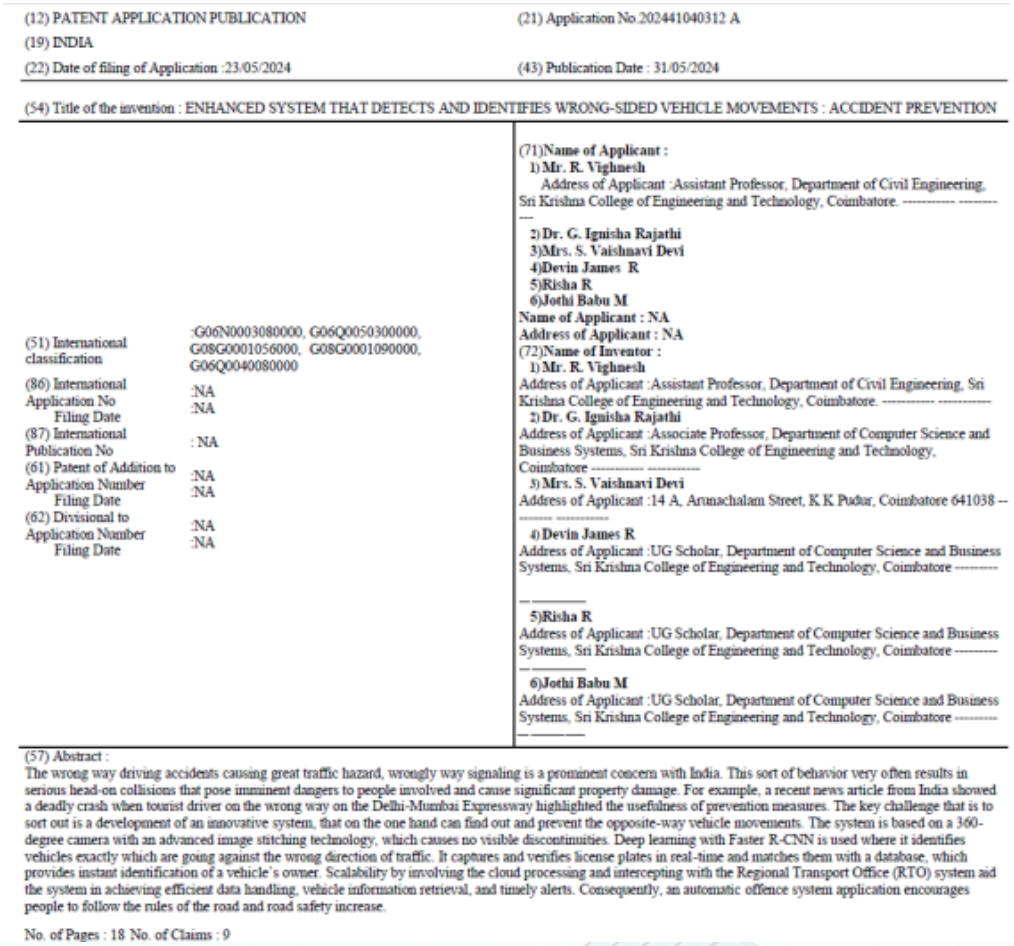
1. INTRODUCTION

Deterioration of building materials can take many forms throughout time, including mechanical, chemical, mineralogical, and physical changes. There are several reasons why components in old buildings deteriorate. This usually takes place at the interface where the material meets the environment or where it meets another substance. The inherent qualities of the construction material, which include its kind, attributes, mass distribution, origin, processing techniques, historical significance (previous preservation efforts), compatibility and blend-in with other materials, and more, control this procedure. Environment also has a role in determining when degeneration begins and how fast it advances. It is important to choose repair construction materials for restoration projects that are compatible with the original materials used in these historic buildings in terms of their mechanical qualities, chemical and mineralogical makeup, and visual similarity [1]. For this reason, ensuring total compatibility (physical, chemical, and structural) between the old stone and the repaired mortar is an essential prerequisite for conservation and restoration projects. To ensure that the repair mortar performs as best it can, compatibility is necessary. The Latin term "tofus" which meaning "a spongy stone," is whence the name "tufa" originates, denoting the stone's great permeability. Throughout history, historical structures in several parts of France have frequently used tufa, a common French limestone. It has very good physical properties and white in color and the stone is easily found in the Loire Valley and was heavily utilized in the building of historical buildings there, especially for their façade [2]. As such, this stone has already been the focus of a great deal of research. Tufa stones are usually shaped into consistent sizes in quarries using technology. These stones are then brought to the closest manufacturing facility. A substantial amount of colloidal waste is generated during the production process when sand and water are combined, which is harmful to the environment. As disposal costs rise, it becomes economically unfeasible to dispose of this trash [3]. Therefore, it became necessary to discover solutions for this problem by repurposing these waste products, even in small amounts. Reuse and recycling techniques have, in fact, been increasingly well-known in the building materials industry in recent years. Tufa powder can be used again as a partial an alternative to aggregate or cement in concrete and cement mortar due

Dr. S. Ramakrishnan, Associate Professor, Department of Civil Engineering, has published a research article titled "Analysis of mechanical performance and durability of repair mortar with partial replacement of tufa stones with aggregates" in Revista Materia. It is indexed in Scopus and WoS.

FACULTY CONTRIBUTION

R&D |patent publication| CIVIL



(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :23/05/2024

(21) Application No.202441040312 A
(43) Publication Date : 31/05/2024

(54) Title of the invention : ENHANCED SYSTEM THAT DETECTS AND IDENTIFIES WRONG-SIDED VEHICLE MOVEMENTS : ACCIDENT PREVENTION

(51) International classification :G06N0003080000, G06Q0050300000, G08G0001056000, G08G0001090000, G06Q0040080000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)Name of Applicant :
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2)Dr. G. Ignisha Rajathi
3)Mrs. S. Vaishnavi Devi
4)Devin James R
5)Risha R
6)Jothi Babu M
Name of Applicant : NA
Address of Applicant : NA
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2)Dr. G. Ignisha Rajathi
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5)Risha R
Address of Applicant :UG Scholar, Department of Computer Science and Business Systems, Sri Krishna College of Engineering and Technology, Coimbatore
6)Jothi Babu M
Address of Applicant :UG Scholar, Department of Computer Science and Business Systems, Sri Krishna College of Engineering and Technology, Coimbatore

(57) Abstract :
The wrong way driving accidents causing great traffic hazard, wrongly way signaling is a prominent concern with India. This sort of behavior very often results in serious head-on collisions that pose imminent dangers to people involved and cause significant property damage. For example, a recent news article from India showed a deadly crash when tourist driver on the wrong way on the Delhi-Mumbai Expressway highlighted the usefulness of prevention measures. The key challenge that is to sort out is a development of an innovative system, that on the one hand can find out and prevent the opposite-way vehicle movements. The system is based on a 360-degree camera with an advanced image stitching technology, which causes no visible discontinuities. Deep learning with Faster R-CNN is used where it identifies vehicles exactly which are going against the wrong direction of traffic. It captures and verifies license plates in real-time and matches them with a database, which provides instant identification of a vehicle's owner. Scalability by involving the cloud processing and intercepting with the Regional Transport Office (RTO) system aid the system in achieving efficient data handling, vehicle information retrieval, and timely alerts. Consequently, an automatic offence system application encourages people to follow the rules of the road and road safety increase.

No. of Pages : 18 No. of Claims : 9

Mr. R. Vighnesh, Assistant Professor, Department of Civil Engineering, along with 2nd-year CSBS students Devin James R. Risha R and Jothi Babu M have published an inter-departmental patent on "Enhanced system that detects and identifies wrong-sided vehicle movements: accident prevention". The patent was published on 31st May 2024.

FACULTY CONTRIBUTION

R&D |patent publication| CIVIL

Ministry of Education | MoE's INNOVATION CELL (GOVERNMENT OF INDIA) | innovative bharat | INSTITUTION'S INNOVATION COUNCIL

This is to certify that

Dr.S.Sadheesh

of

Sri Krishna College of Engineering and Technology , Tamil Nadu

has undergone Innovation Ambassador (IA) training 'Foundation Level'
(Total 16 Sessions of 30 contact hours) conducted in online mode by MoE's
Innovation Cell & AICTE during the IIC calendar year

Dr. Abhay Jere
Chief Innovation Officer
MoE's Innovation Cell

Mr. Dipan Sahu
Assistant Innovation Director
MoE's Innovation Cell

Date of Issue: 29-04-2024

E-certificate No: IA Foundation/1034275

IIC ID: IC201810347

Ministry of Education | MoE's INNOVATION CELL (GOVERNMENT OF INDIA) | innovative bharat | INSTITUTION'S INNOVATION COUNCIL

This is to certify that

Mr. R. Vighnesh

of

Sri Krishna College of Engineering and Technology , Tamil Nadu

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(Total 16 Sessions of 30 contact hours) conducted in online mode by MoE's
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Mr. Dipan Sahu
Assistant Innovation Director
MoE's Innovation Cell

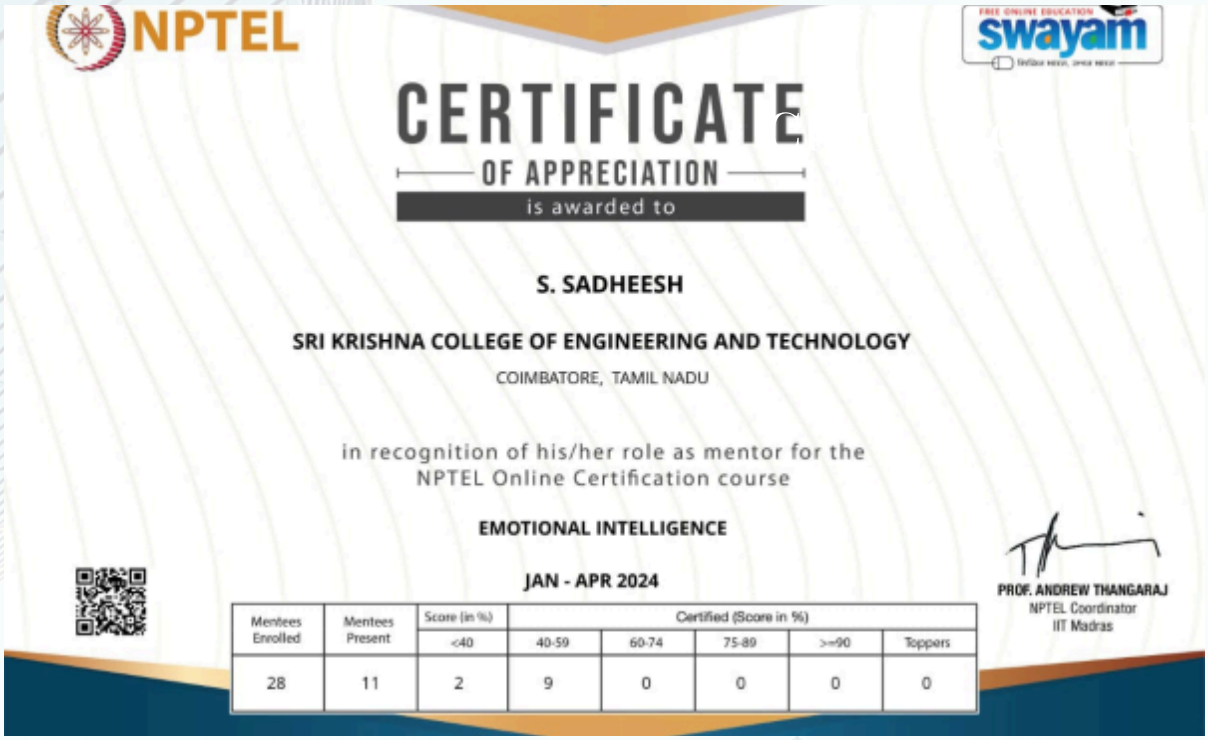
Date of Issue: 29-04-2024

E-certificate No: IA Foundation/1034274

IIC ID: IC201810347

Dr. S. Sadheesh and Mr. R. Vighnesh, Assistant Professors, Department of Civil Engineering, have undergone Innovation Ambassador (IA) training 'Foundation Level' (Total 16 Sessions of 30 contact hours) conducted in online mode by MoE's Innovation Cell & AICTE during the IC calendar year

FACULTY CERTIFICATION



NPTEL

swayam

CERTIFICATE

OF APPRECIATION

is awarded to

S. SADHEESH

SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY

COIMBATORE, TAMIL NADU

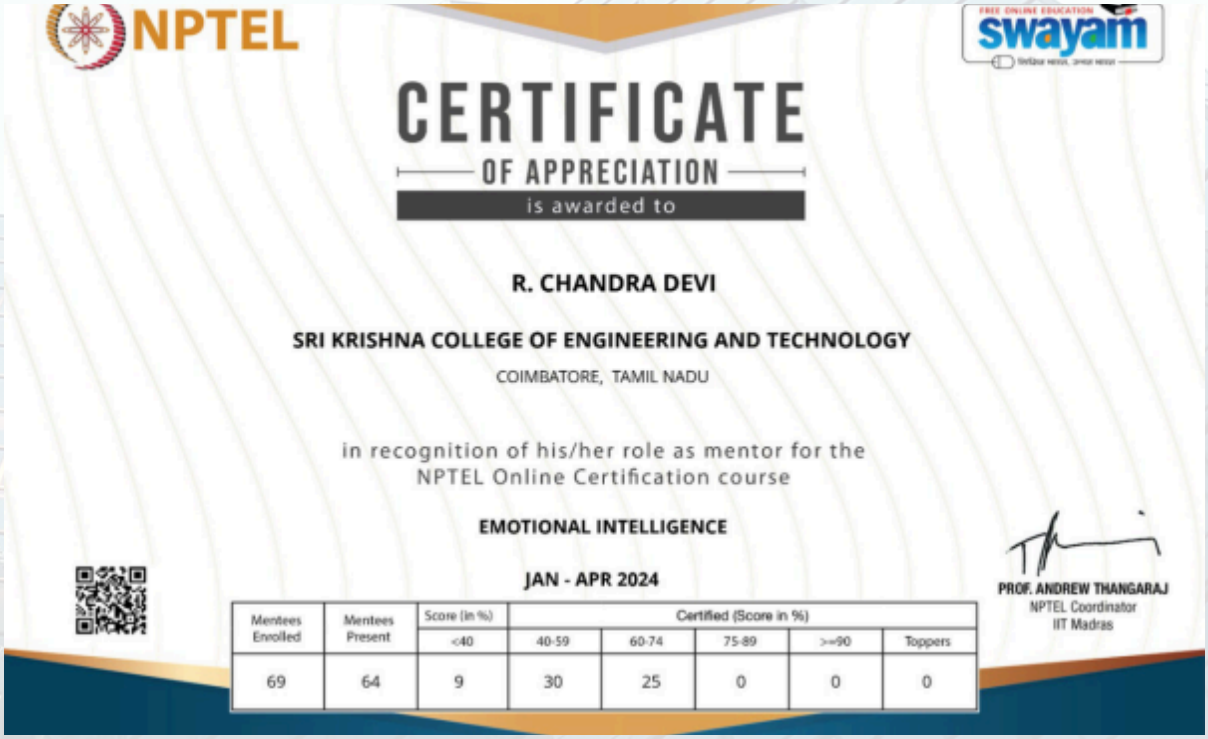
in recognition of his/her role as mentor for the
NPTEL Online Certification course

EMOTIONAL INTELLIGENCE

JAN - APR 2024

PROF. ANDREW THANGARAJ
NPTEL Coordinator
IIT Madras

Mentees Enrolled	Mentees Present	Score (in %)	Certified (Score in %)				
		<40	40-59	60-74	75-89	>=90	Toppers
28	11	2	9	0	0	0	0



NPTEL

swayam

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R. CHANDRA DEVI

SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY

COIMBATORE, TAMIL NADU

in recognition of his/her role as mentor for the
NPTEL Online Certification course

EMOTIONAL INTELLIGENCE

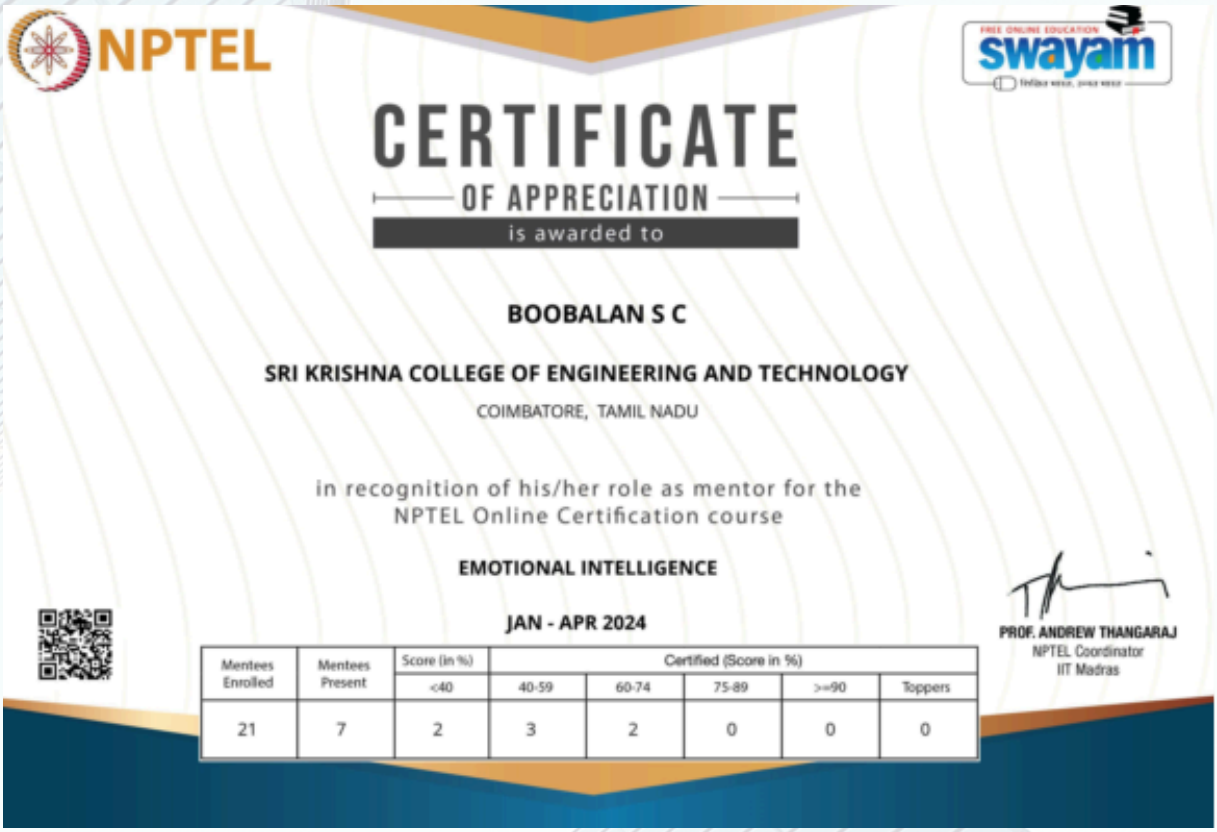
JAN - APR 2024

PROF. ANDREW THANGARAJ
NPTEL Coordinator
IIT Madras

Mentees Enrolled	Mentees Present	Score (in %)	Certified (Score in %)				
		<40	40-59	60-74	75-89	>=90	Toppers
69	64	9	30	25	0	0	0

FACULTY CERTIFICATION

CIVIL| Faculty certification



NPTEL

swayam

CERTIFICATE

OF APPRECIATION

is awarded to

BOOBALAN S C

SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY

COIMBATORE, TAMIL NADU

in recognition of his/her role as mentor for the
NPTEL Online Certification course

EMOTIONAL INTELLIGENCE

JAN - APR 2024

Mentees Enrolled	Mentees Present	Score (in %)	Certified (Score in %)				
		<40	40-59	60-74	75-89	>=90	Toppers
21	7	2	3	2	0	0	0

PROF. ANDREW THANGARAJ
NPTEL Coordinator
IIT Madras

Dr. R. Chandra Devi, Associate Professor along with Dr. S. Sadheesh and Mr. S.C. Boobalan, Assistant Professors, Department of Civil Engineering has been awarded a certificate for his contribution as a mentor for the NPTEL certification course on "Emotional Intelligence".

FACULTY CERTIFICATION

CIVIL| Faculty certification

MALAVIYA MISSION TEACHER TRAINING PROGRAMME

Government of India

University Grants Commission

CERTIFICATE OF PARTICIPATION

NEP 2020 ORIENTATION & SENSITIZATION PROGRAMME

This is to certify that **Dr. P. Saravanakumar** from Sri Krishna College of Engineering and Technology, Coimbatore has completed the NEP 2020 Orientation & Sensitization Programme under Malaviya Mission Teacher Training Programme (MM-TTP) of University Grants Commission (UGC) Organized by Coimbatore Institute of Technology (CIT) from **22/04/2024 to 30/04/2024**.

Dr.V.Manikandan
Coordinator (MM-TTC), CIT

Dr.A.Rajeswari
Principal, CIT

Dr. P. Saravanakumar, Professor and Head, Department of Civil Engineering has completed the NEP 2020 Orientation and Sensitization Programmer under the Malaviya Mission Teacher Training Programmer (MMTTP) of the University Grants Commission (UGC) organized by the Coimbatore Institute of Technology from 22nd to 30th April 2024.

FACULTY CERTIFICATION

CIVIL| Faculty certification

CERTIFICATE OF PARTICIPATION

Department of Civil Engineering

This certificate is presented to

S. C. BOOBALAN

For participating & successfully completing the Five days online international faculty development program from 24th June to 28th June 2024 on

Sustainable Construction Materials, Technologies & Practices (SCMTP-2024)

at "Malla Reddy Engineering College" Hyderabad, Telangana

Dr.C.V. Siva Rama Prasad
Coordinator

Dr. B. Sudarshan Reddy
Convener & Head of the department , Civil Engineering

Dr. A. Ramaswami Reddy
Director/Principal,MREC

Mr. S. C. Boobalan, Assistant Professor, Department of Civil Engineering has completed a 5-day International FDP on "Sustainable Construction Materials, Technologies and Practices (SCMTP-24)" organized by the Malla Reddy Engineering College, Hyferabad from 24th to 28th June 2024.

OTHER SIGNIFICANT EVENTS

The Department of Civil Engineering in association with NSS organized a Yoga Demonstration Programme on 10th International Yoga Day to the students of Kurumbapalayam Government High School on 21.06.2024. The resource organizers were Kovai Manavalakalai Mandram Trust, BK Pudur, Coimbatore.

Training Takeaways:

- **Physical Health**
- **Mental Well-being**
- **Emotional Balance**
- **Spiritual Growth**
- **Lifestyle Improvement**
- **Community and Support**

OTHER SIGNIFICANT EVENTS

The Civil Engineering Department organized a CEA Inauguration of Activities cum Expert Lecture on "Luxurious Interior Design" for Civil Engineering students on 25.06.2024. The resource person for the event was Ar. J. Kavi Dhanjan, Mohan and Monz Interior Designers, Pumo Technovation, Coimbatore.

Training Takeaways:

- **Importance of Interior Designs**
- **Key elements of Luxurious Interior designs**
- **Colour palette, Materials, Textures, Furniture and lighting used in interior design**
- **Recent Project Portfolios**

SUSTAINABLE INNOVATION CHALLENGE (SIC'24)

The Mid Level Assessment of Ideas presented for the Sustainable Innovation Challenge (SIC '24) was organized by the Research & Innovation Cell was done on 29th April 2024. Fifteen teams from all years of Civil Engineering presented the progress of their study (done in various domains like Structural Engineering, Transportation Engineering, Water Resources Engineering, Environmental Engineering, Geotechnical Engineering, Town Planning) to the panel, got their feedback and evaluated.

AICTE-VAANI SCHEME GRANT

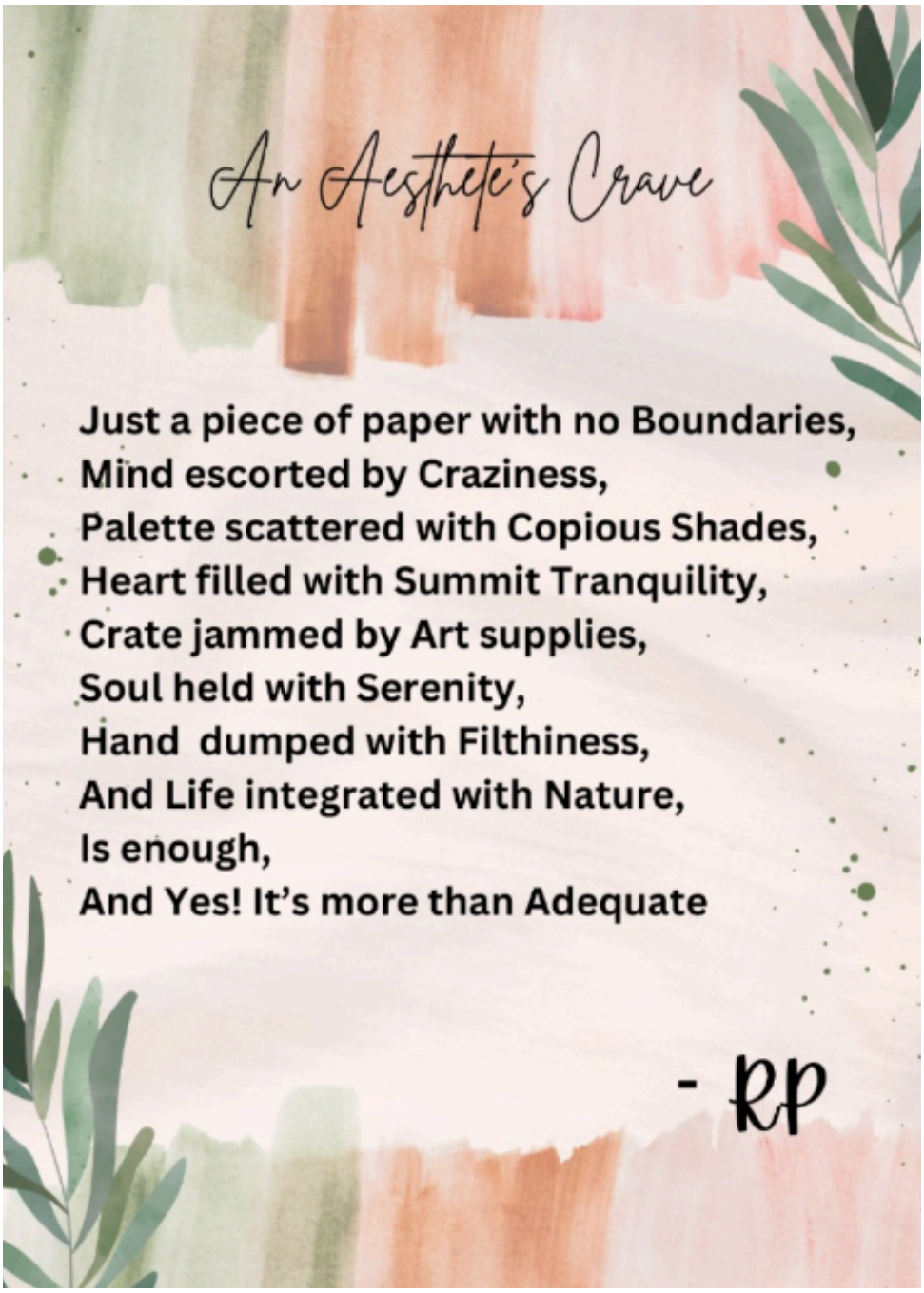
CC0ED1A	1-3955612	Seminar	Tamil	Health Care & Med-Tech	2	02-08-2024	Sri Krishna College of Engineering and Technology

SKCET- Civil Engineering Department is selected to conduct the VAANI-FDP by AICTE on "Application of Traditional Health Care Systems in Daily Life" under the theme Health care and Med-Tech. The sanctioned amount for the conduct of FDP is Rs. 2 Lakhs.

PI: Dr. P. Saravanakumar
Professor and Head, Civil Engg.

Co-PI: Dr. S. Ramakrishnan
Associate Professor, Civil Engg.

CREATIVE CORNER



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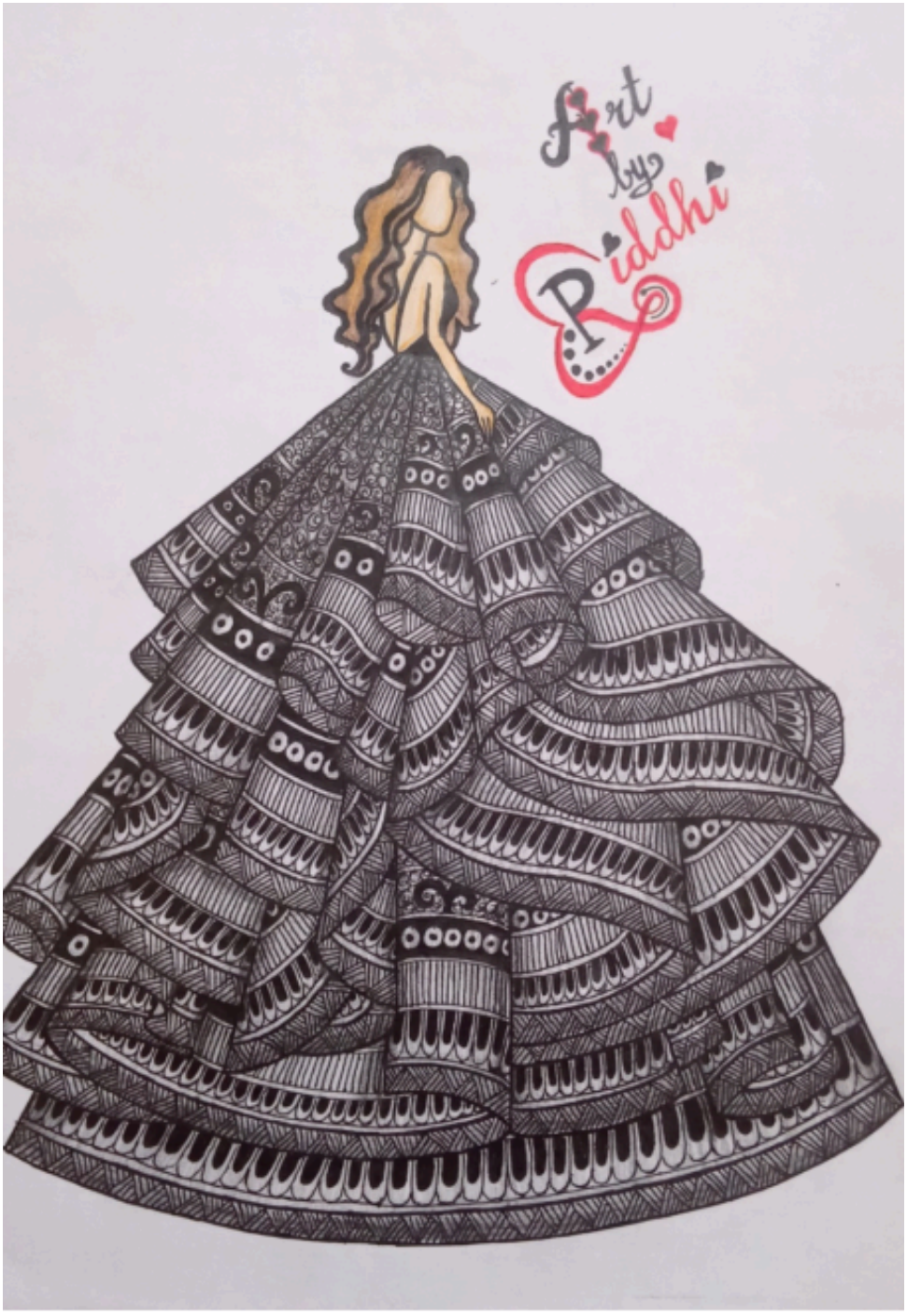
CREATIVE CORNER



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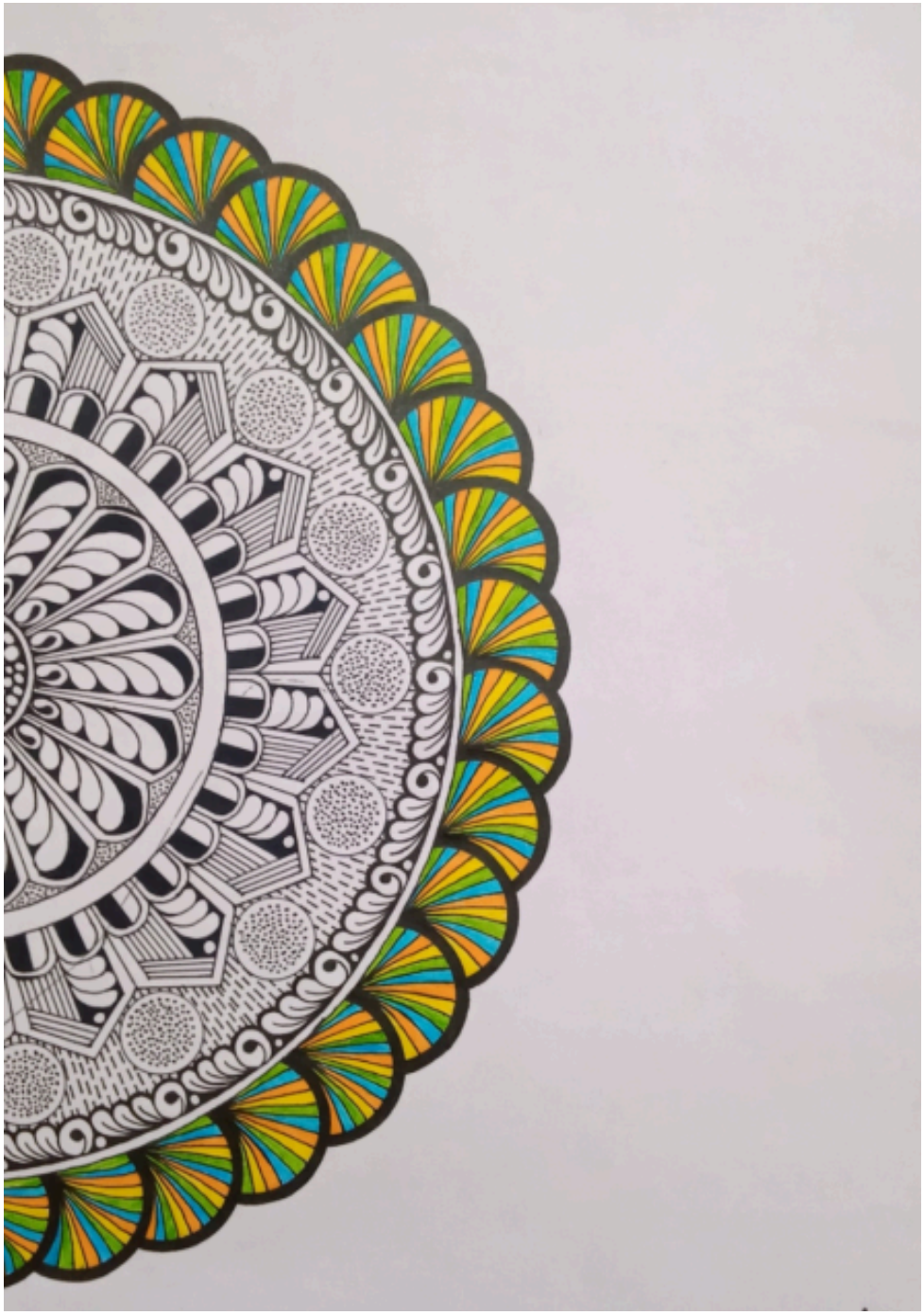

RIDDHI RESHMI R
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ADIEU BATCH 2020-2024

FACULTY EDITORS

Dr. P. Saravanakumar,
Head and Professor,
Department of Civil Engineering

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

STUDENT EDITORS

Ms. S.R. ChinthanaShri,
III year/ Civil Engineering

Mr. R. Kalai Dharan,
III year/ Civil Engineering

Ms. S. Tarunya Shree,
II year/ Civil Engineering