

CURRICULUM VITAE

Sreelakshmi S

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Building Technology and Construction Management Division
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EDUCATION

- **Ph.D. in Civil Engineering** April 2021-Present
Indian Institute of Technology Madras, Chennai, India
Tentative thesis title: “Understanding long-term corrosion and durability performance of prestressed concrete systems”
CGPA- 8.88
- **M.E. in Structural Engineering** May 2018
Government College of Technology, Coimbatore – Autonomous Institution Affiliated to Anna University
Project Phase II title: “Constrained and Conventional Finite Strip Method using various Shape functions”
Project Phase I title: “Parametric Study on Cold Formed Steel Flexural Members using Finite Strip Method”
First Class with Distinction, **Second Rank**, CGPA- 9.3
- **B.E. in Civil Engineering** April 2016
University College of Engineering, Nagercoil - Anna University Constituent College
Project Phase II title: “Study on Stress Strain Curve of concrete with various Admixtures”
Project Phase I title: “Design of Warehouse for Food grain Storage with Hand Operated Gantry Girder”
First Class with Distinction, **Second Rank**, CGPA- 8.51

WORK EXPERIENCE

- Graduate Teaching Assistant, Indian Institute of Technology Madras, Chennai, India
 - CE 2330 – Civil Engineering Materials and Construction Apr – Jul 2021
 - CE 3060 – Basic design of reinforced concrete structures Jul – Nov 2022
 - CE 5115 – Admixtures and Special Concretes Jan 2023 – Present
 - CE 5090 – Construction Materials Lab Jan 2023 – Present
- Worked as Project Associate, Indian Institute of Technology Madras. Oct 2020 -Mar 2020
- Worked as Engineer, Power Projects Division, Civil Design, BGR Energy Systems Ltd Aug 2018 -Sept 2020

- Teaching Assistant, Government College of Technology Coimbatore, India
12C608 – Concrete and Highway Laboratory Jan–April 2017
16CES308 – Strength of Materials Laboratory July–Nov 2017

RESEARCH EXPERIENCE

Understanding long-term corrosion and durability performance of prestressed concrete systems Apr 2021 -Present

To understand the chloride- and stress-induced corrosion initiation and propagation of prestressing steel in cementitious systems, its effect on mechanical properties. To develop guidelines for detecting corrosion of strands in pretensioned concrete systems and performance specifications and inspection procedures for prestressed concrete systems

- **DST Project: Structural Behaviour of Corroding Prestressed Concrete (PSC) Systems** Oct 2020 -Present

(Team Members: Dr. PVM Rao, Dr. Radhakrishna G Pillai)

To study the flexural behaviour of corroded PSC structures. 12 beams of 3.3 length cast and it had been exposed to chlorides for corrosion studies. The flexural bond behaviour and Ductile to brittle transition has to be studied.

- **Effect of corrosion on Transmission length** Oct 2020 – Aug 2021

(Team Members: Dr. Prabha Mohandoss, Dr. Radhakrishna G Pillai)

To study how corrosion affect the bond between the strand and concrete, which reduces the transmission length of the system. The four-year-old specimens had been exposed to wet and dry cycle and Half-cell potential and strain measurements was observed periodically to study the change in transmission length

- **Other Works:** Studies on Textile Reinforced Concrete, Condition Assessment-Testing of Cores and rebars from Ratnagiri Powerplant, Shrinkage measurements, Corrosion study with CAC G109 specimens etc Oct 2020 -Mar 2020

- **Site visits& Condition Assessment**

To IDBI Quarters, Besant Nagar, Chennai: Visual Assessment of corrosion condition of the G+2 Residential Building. Half Cell Potential and resistivity readings were taken for HCP contour. Cores extracted for obtaining chloride profile and diffusion coefficient.

To Chennai Metro Rail Limited (CMPR) Koyambedu, Chennai: Had a demonstration of the processing of construction and Demolition waste (C&D) from the pile tops using a mobile unit by Schwing Stetter

To Steel Manufacturing facility: Visited steel manufacturing facility (TATA steel, Jamshedpur & Usha Martin, Ranchi) and learned about the manufacturing of LRPC strands.

To Goraguntepalya Flyover, Bangalore: Studying the microstructural characteristics and stress corrosion cracking in the samples from the bridge.

FIELD OF INTEREST

- o Corrosion in Prestressed Concrete Structures PSC
- o Electrochemical measurements in PSC systems
- o Stress Corrosion Crack studies
- o Flexural bond behaviour and Transmission length Studies on corroded prestressed concrete structures

TRAININGS AND WORKSHOPS

Course from Global Initiative for Academic Networks

April 2023

- Course Title: “Corrosion Prevention and Control: Importance in the era of sustainable development” at Indian Institute of Technology Madras. Period: 17.04.2023 to 21.04.2023
- About fundamentals of corrosion theory and engineering, corrosion protection and prevention, and corrosion testing and monitoring. Hands-on lab work to demonstrate corrosion prevention and protection strategies, discussions on sustainability relationship and circular economy

Workshop on Electrochemical Corrosion Techniques

March 2023

- Course Title: Workshop on Electrochemical Corrosion Techniques - Theory And Hands on Training, organised by BSA Crescent Institute of Science and Technology, Chennai, AMPP India Section, NACE International Gateway India Section (NIGIS) South Zone India. Period: 17.03.2023 to 18.03.2023
- About latest advancement in electrochemical corrosion and its control techniques in fields of science and technology, Techniques for proper interpretation of data for use in corrosion prediction, prevention, and monitoring

A week on Technologies for Low Carbon and Lean Construction

January 2023

- Courses Title:
 - 6th 1-day Seminar on Corrosion Control in Concrete Structures (C3S)
 - Advances on Technologies for Low Carbon and Lean Construction
 - Workshop on Textile Reinforced Concrete and its applicationsPeriod: 3.01.2023 to 03.02.2023
- Seminar on Mechanisms, Testing, Monitoring and Mitigation of corrosion in concrete structures. Technologies For developing and implementing technologies (1) To minimize and utilize waste materials from construction, demolition, power, steel, and agricultural industries and using lean principles and digital/3D printing tools

International Conference & Expo on Corrosion

September 2021

- Course Title: “International Corrosion Conference and Exhibition on Corrosion”, organised by AMPP India Chapter at Ananta Hotels and Resorts, Udaipur, Rajasthan. Period: 19.09.2022 to 22.09.2022
- Presented a poster titled, “Stress Corrosion Crack studies in Prestressing Steel wires in hardened concrete exposed to chlorides in both laboratory and field conditions”, and received the **Best Poster Award**.

User Training Program on MTS Compression Testing Machine

March 2022

- Training program to understand the capabilities of the tension and compression servo-hydraulic testing machines and to perform static and fatigue testing

Technologies for Low Carbon & Lean Construction

December 2021

- Course Title: “Advances in Technologies for Low Carbon & Lean Construction”, at Indian Institute of Technology Madras, Chennai. Period: 10.12.2021 to 11.12.2021
- About Technologies like 3D printing, Recycled Concrete Aggregates etc.

Corrosion Control in Concrete Structures

December 2021

- Course Title: 5th 1-day Seminar on Corrosion Control in Concrete Structures (C3S). One-day seminar organized by NIGISZ and ICI - Chennai Centre on 04.12.2021

- Seminar on Mechanisms, Testing, Monitoring and Mitigation of corrosion in concrete structures

CSIR Integrated Skill Initiative September 2019

- Course Title: “A perspective into Indian Codes of Practice for Reinforced & Pre- stressed concrete Structures”. At Council of Scientific & Industrial Research – Structural Engineering Research Centre, Chennai. Period: 18.09.2019 to 20.09.2019
- An exploration into current codes & visit to all Laboratories at SERC

Course from Global Initiative for Academic Networks January 2018

- Course Title: “Sustainable Infrastructure Design using High Strength Metallic Alloys” at Government College of Engineering, Salem. Period: 04.01.2018 to 09.01.2018
- Studied about manufacturing and design of Cold Formed Steel using Various Codes. Studied about Continuous Strength Method for the Design of Stainless Steel. Industrial Visit at Steel Authority of India Limited (SAIL), Salem

Career Oriented Training Programme February 2017

- Training on “Analysis and Design of Structures for Civil Engineers”, at Government College of Technology, Coimbatore. Period: 31.01.2017 to 02.02.2017
- Studied about the Arrangement of structures, Load combinations. Analysis, Design and Construction of Structures with IS Codal Provision

Innovations on Majestic Pre-stressed Concrete Structures September 2015

- At University College of Engineering Nagercoil, on 29.09.2015
- Learned about the practical applications of pre-stressing at construction sites with case studies”

Tall Buildings Design March 2015

- At National Institute of Technology Tiruchirappalli, on 13.03.2015
- Studied about the wind load analysis on Tall Buildings and the strengthening for lateral forces

Innovations in Civil Engineering September 2015

- At University College of Engineering Nagercoil, on 19.09.2015.
- Learned about the recent trends in Civil Engineering, including Environmental Impact Assessment, Wastewater Treatment and Soil stabilization

Innovations on Majestic Pre-stressed Concrete Structures September 2015

- At University College of Engineering Nagercoil, on 29.09.2015
- Learned about the practical applications of pre-stressing at construction sites with case studies”

INTERNSHIP & IN-PLANT TRAINING

Summer Fellowship Programme June 2015

- At Indian Institute of Technology Madras, Chennai
- Period: 25.05.2015 to 15.07.2015
- Project Title: “Influence of size of Specimen on Sulphate Attack” and “Design of Ultra High-Performance Concrete”.

December 2014

In-plant Training

- At Building Construction Subdivision, Public Works Department, Nagercoil
 - Period: 08.12.2014 to 18.12.2014
 - Analyzed the design of District Magistrate Office Building, observed the construction practices and Cost Estimation of the Project.
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Technical Events

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| Third place in “Technical Quiz” at National Institute of Technology Tiruchirappalli | March 2015 |
| Second place in “Paper Presentation” at University College of Engineering, Nagercoil. | September 2014 |
| Participated in “Surveyor” & “Rehabilito” at National Institute of Technology Tiruchirappalli | March 2015 |
| Participated in “Code Cracking”& “Technical Quiz” at University College of Engineering, Nagercoil. | September 2014 |

Papers Presented

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| “Stress Corrosion Crack studies in Prestressing Steel wires in hardened concrete exposed to chlorides in both laboratory and field conditions” at CORCON 2022, Udaipur, Rajasthan and received the Best Poster Award. | September 2022 |
| “Analytical Investigation of Flexural Behavior of Hollow Channel Section” at Sri Ramakrishna Engineering College, Coimbatore | March 2018 |
| “Fiber Reinforced Concrete” at National Level Technical symposium, ACCNII, University College of Engineering, Nagercoil. | September 2015 |
| “Light Transmitting Concrete” at National Level Technical symposium, AMONEC, University College of Engineering, Nagercoil. | September 2014 |

GATE Score – 388/1000, Normalised Percentile - 90.84/100 March 2016

RESPONSIBILITIES HELD:

- Volunteer for A week on Technologies for Low Carbon and Lean Construction” during January. 30 – February 3, 2023.
 - Volunteer for CORCON 2022, 28th International Conference & Expo on corrosion held in Udaipur during Sept. 19 – 22, 2022.
 - Class Committee representative, Structural Engineering Dept., Government College of Technology, Coimbatore
 - **Treasurer of Women Entrepreneurship Cell**, University College of Engineering, Nagercoil.
 - Executive Member of Events Committee, **ACNII**, University College of Engineering, Nagercoil.
 - Executive Member of **English Club**, University College of Engineering, Nagercoil.
 - Member of **Fine Arts Club**, University College of Engineering, Nagercoil.
 - Class representative, Civil Engineering Dept., University College of Engineering, Nagercoil
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ACHIEVEMENTS:

- Best Poster Award for “Stress Corrosion Crack studies in Prestressing Steel wires in hardened concrete exposed to chlorides in both laboratory and field conditions” at CORCON 2022, Udaipur, Rajasthan
 - Received felicitation in BGRE Systems Limited for developing spreadsheet for raft design of Wagon Tippler Control Room with multiple columns, which reduced time and number of iterations.
 - Third place in “Technical Quiz” at National Institute of Technology Tiruchirappalli
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- Second place in “Paper Presentation” at University College of Engineering, Nagercoil.
- Secured College Rank 2 in Postgraduate & Undergraduate programme

PROFESSIONAL MEMBERSHIP

- NACE International Gateway India Section (NIGIS) (Member since December 2021)
 - RILEM, International Union of Laboratories and Experts in Construction Materials, Systems, and Structures (Member since May 2021)
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REFERENCES

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