CURRICULUM VITAE

Radhakrishna G. PILLAI, Ph.D.

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Building Technology & Construction Management (BTCM) Group
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Indian Institute of Technology Madras, Chennai – 600 036, India
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EARNED DEGREES

- **Ph.D. in Civil Engineering** — May 2009
  Texas A&M University (TAMU), College Station, Texas, USA
  Dissertation: "Electrochemical characterization and time-variant structural reliability assessment of post-tensioned, segmental concrete bridges." Guide: Prof. David Trejo
- **M.S. in Civil Engineering** — August 2003
  Texas A&M University, College Station, Texas, USA
  Thesis: "Accelerated quantification of critical parameters for predicting the service life and life cycle costs of chloride-laden reinforced concrete structures." Guide: Prof. David Trejo
- **B.E. in Civil Engineering** — July 1999
  Motilal Nehru Regional Engineering College (now MNNIT),
  Allahabad University, Allahabad, India

AWARDS & RECOGNITIONS

- Institute Research and Development Award (Mid-Career category) from IIT Madras 2022-23
- Best Project on Repair and Restoration Award, American Concrete Institute – India Chapter (as part of the project team) for the repair of Chajjas at Rashtrapathi Bhawan, New Delhi, 2022
- Excellence in Corrosion Science & Technology Award, NACE International Gateway India Section (NIGIS; now AMPP), NIGIS Annual Corrosion Awareness Awards, 2019
- Excellent Public Sector Laboratory (as part of the Group of Corrosion Laboratories in IIT Madras), NIGIS Annual Corrosion Awareness Awards, 2019
- ICI - Ultratech Award for Outstanding Young Concrete Engineer - 2016
- Scholarship, Former Students Association, TAMU, Spring 2009
- Richard Gehle Memorial Scholarship, Zachry Dept. of Civil Engg., TAMU, Fall 2006
- Merit Scholarship, Zachry Dept. of Civil Engg., TAMU, Spring 2004 & 2006

WORK EXPERIENCE

- **Professor** — Nov. 2022 - Present
- **Associate Professor** — Jul. 2017 – Nov. 2022
- **Assistant Professor** — Sep. 2010 – Jul. 2017
  Indian Institute of Technology Madras, Chennai, India

- **Post-doctoral Scholar** — Oct. 2009 – Aug. 2010
  Oregon State University, Corvallis, Oregon

- **Post-doctoral Research Associate** — Jun. 2009 – Oct. 2009
- **Graduate Teaching/Research Assistant** — Jan. 2004 – Jan. 2009
- **Research Associate** — Jul. 2003 – Jan. 2004
- **Graduate Research Assistant** — Dec. 2000 – Jun. 2003
  Texas A&M University System, College Station, Texas

TEACHING EXPERIENCE

- **Undergraduate courses**
  - CE1010 – Introduction to Civil Engineering
  - CE2330 - Civil Engineering Materials and Construction
  - CE3420 - Concrete Technology
  - CE3410 - Construction Materials Lab

- **Graduate courses**
  - CE5120 - Maintenance and Rehabilitation of Constructed Facilities
  - CE5010 - Modern Construction Materials
  - CE5090 - Construction Materials Lab
  - CE5060 - Industrial Seminar
  - CE5042W – Materials and Construction Technologies in Bridge Engineering

- **NPTEL courses**
  - Maintenance and Rehabilitation of Constructed Facilities
  - Basic Construction Materials

RESEARCH INTERESTS

- **Areas**
  - Corrosion mechanisms in steel-cementitious systems
  - Service life estimation of concrete structures
  - Cathodic protection of concrete structures
  - Corrosion and its effects on steel-concrete bond
  - Concrete technology
  - Grouting of post-tensioned systems
  - Cold weather concrete
  - Precast concrete construction

- **Long-term activities**
  - Development of service life estimation tools
  - Development of guidelines and standard specifications, test methods, and/or codes of practice for reinforcement in concrete, corrosion testing and control, and durable concrete structures
  - Outreach/technology transfer programs to enhance the quality of teaching and professional practices in the areas of concrete design and construction

SPONSORED AND CONSULTANCY PROJECTS

Sponsored – External (S) Projects

S13. Electrical and electrochemical modelling for routine, non-destructive testing of cathodic protection systems in reinforced concrete structures; Radhakrishna G. Pillai, Lakshman Neelakantan, and Anirudhan Sankaran; Rs. 37 Lakhs; (Sanction No. CRG/2022/006666); Funded by Science and Engineering Research Board (SERB), Department of Science & Technology (DST), Govt. of India; Feb 2023 – Feb 2026

S12. Development of Ultra-High-Performance Concretes (UHPCs) for Road/Bridge Infrastructure in Urban Areas; Investigators: Bijily Balakrishan (PI), **Radhakrishna G Pillai**, Surender Singh, Elson John, K. Jayachandran; Rs. 1.68 Crores (36 Lakhs to IIT Madras); Sponsored by Kerala Highway Research Institute, Govt. of Kerala; 2022 - 2024

S11. 3D Volumetric Precast Technology – Design, Investigators: Rupen Goswami (PI), Meher Prasad, Amlan Sengupta, **Radhakrishna G Pillai,** and Nikhil Bugalia; Rs. 335 Lakhs; Funded by Min. of Housing and Urban Affairs; Mar 2022 – Mar 2024

S10. Study of the deterioration mechanisms in glass textile reinforced concrete and improvement of its durability; Investigators: Ravindra Gettu (PI), **Radhakrishna G. Pillai** and Sunitha K. Nayar; Rs. 54.8 Lakhs (Sanction No. SERB/F/10437/2019-2020); Funded by Science and Engineering Research Board (SERB), Department of Science & Technology (DST), Govt. of India; Feb 2020 – Feb 2023

S9. Enhancing the durability and sustainability of concrete structures in emerging economies; Investigators: **Radhakrishna G. Pillai** (PI) and Manu Santhanam, IIT Madras, Chennai and David Trejo, Jason Weiss, Burkan Isgor, and Jason Ideker of Oregon State University, Corvallis, OR, USA; Rs. 71.3 Lakhs (Sanction No. SPARC/2018-2019/P834/SL on November 7, 2019); Funded by the Ministry of Human Resources Development (MHRD), 2019 - 2022

S8. Corrosion protection and service life extension of reinforced concrete roofing systems in existing buildings; Investigator: Roopa Vijayaraghavan (PI), Mentors: Haji Sheikh Mohammed and **Radhakrishna G. Pillai**; Rs. 16.8 Lakhs (Sanction No. TAR/2018/001322); Funded by Teachers Associateship for Research Excellence (TARE) scheme, Science and Engineering Research Board (SERB), Department of Science & Technology (DST), Govt. of India; 2018 – 2021

S7. Structural behaviour of corroding prestressed concrete (PSC) systems and extension of service life using cathodic protection, Investigators: Amlan K. Sengupta (PI), **Radhakrishna G. Pillai**, Haji Sheikh Mohammed; Rs. 39,60,000 (Sanction No. EMR/2017/004687); Funded by Science and Engineering Research Board (SERB), Department of Science & Technology (DST), Govt. of India; Sep 2018 – Mar 2022

S6. Assessment, prevention, and mitigation of corrosion in reinforced concrete systems, Investigators: **Radhakrishna G. Pillai (PI)** and Lakshman Neelakantan; Rs. 45.5 Lakhs (Sanction No. EMR/2016/003196); Funded by Science and Engineering Research Board (SERB), Department of Science & Technology (DST), Govt. of India; 2017 – 2020

S5. Development of pre-packaged, high performance grout (HPG) for commercialization in Indian post-tensioned concrete industry; Investigators: **Radhakrishna G. Pillai (PI**), Manu Santhanam, and Ravindra Gettu; Rs. 40.36 Lakhs (Project No. 7711); Funded through the IMPRINT India Initiative by the Ministry of Human Resources

Development and Ministry of Housing, and Ultratech Cements Limited, 2017-2019.

S4. Institutional strengthening on analysis of dams, foundations, retrofitting, flood forecasting and related issues, Investigators: K. Rajagopal (PI), Ravindra Gettu, Manu Santhanam, Radhakrishna G. Pillai, K. Srinivasan, N. Balaji, K.P. Sudheer, Venu Chandra, Soumendra Nath Kuiry, D.N. Arnepalli, S. Banerjee, V B Maji, R G Robinson, T Thyagaraj, A Bhoominathan, Arun Menon, Meher Prasad, STG Raghukanth, Rupen Goswami, K. Murali; Rs. 592 Lakhs; Funded through DRIP programme of Central Water Commission, New Delhi

S3. Probabilistic service life prediction of prestressed concrete structures; Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 18.42 Lakhs (Sanction No. SR/FTP/ETA-0119/2011); Funded by (Fast-Track Scheme for Young Scientists) Department of Science & Technology (DST), Govt. of India; 2012 – 2015

S2. Development of performance specifications for durable concrete construction in India; Investigators: Manu Santhanam (PI) and **Radhakrishna G. Pillai**; Rs. 50 Lakhs; Funded by Department of Science & Technology (DST), Govt. of India; May 2012 – May 2016

S1. Laboratory for the study of the long-term performance of concrete; Investigators: Ravindra Gettu (PI), Manu Santhanam, and **Radhakrishna G. Pillai**; Rs. 93.8 Lakhs; Funded by Lafarge Centre De Recherche, France; Feb 2011 – Feb 2016

Sponsored - Internal (Si) Projects

Si8. Women Leading Initiative; Investigator: Radhakrishna G Pillai (PI); To support the studies of my PhD student, Ms. Dyana Joseline; Apr 2021 – Mar 2022

Si7. Laboratory for Mechanical Performance of Civil Engineering Materials (MPCEM); Rs. 16 Lakhs; Funded by IIT Madras; Aug 2019 – Jul 2021

Si6. Research Initiative on Technologies for Low-Carbon and Lean Construction (TLC2); Investigators: Manu Santhanam (PI), Ravindra Gettu, K. Ramamurthy, Koshy Varghese, Benny Raphael, Ashwin Mahalingam, Radhakrishna G Pillai, Piyush Chaunsali, Surender Singh, Nikhil Bugalia, and Sivakumar Palaniappan; Funded by the Institute of Eminence (IoE) Funds by IIT Madras; Feb 2021 – Dec 2026

Si5. Support for sustaining research; Rs. 4.5 Lakhs; Funded by IIT Madras to continue a DST project and support Dr. Mallikarjuna Perumalla during the COVID pandemic; Aug 2020 – Mar 2021

Si4. National Centre for Safety of Heritage Structures; Investigators: Arun Menon (PI), Meher Prasad, Manu Santhanam, Dodagoudar G R, CVR Murty, Raghukanth STG, and Radhakrishna G Pillai; Funded by IIT Madras; Feb 2019 – Feb 2024

Si3. Technician for IITM-Lafarge Laboratory for durability and long-term performance of concrete; Rs. 3.4 Lakhs; Funded by IIT Madras; Mar 2015 – Dec 2016

Si2. Study of the long-term behavior of fibre reinforced concretes for tunnel linings and on-grade; Investigators: Ravindra Gettu (PI) and Radhakrishna G Pillai; Rs. 10 Lakhs; Funded by IIT Madras through Exploratory Research program (ERP) scheme; Feb 2015 – May 2016

Si1. Service life prediction, corrosion inhibition, and corrosion detection of prestressed concrete structures; Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 8 Lakhs; Funded by IIT Madras SEED Grant for new faculty; 2011-2014

Consultancy (C) Projects

C37. Assessing the service life of steel-cementitious systems with corrosion inhibitors; Investigator: **Radhakrishna G. Pillai (PI)**, Rs. 10 Lakhs; Funded by Conchem Labs LLP, Mumbai; Jun 2022 – Dec 2022

C36. Technical advice for the condition assessment and electro-chemical repair of reinforced concrete structures; Investigator: **Radhakrishna G. Pillai (PI);** Rs. 24 Lakhs; Structural Specialties and Projects India Private Limited (SSPIL), Mumbai; May 2022 – May 2024

C35. Carbonation and carbonation-induced corrosion in concretes with supplementary cementitious materials; Investigators: **Radhakrishna G. Pillai (PI)**, Piyush Chaunsali, Ravindra Gettu, and Manu Santhanam; Rs. 19 Lakhs; Funded by Holcim Innovation Centre, Lyon, France; Mar 2022 – Mar 2026

C34. Corrosion and service life assessment of concrete structures with galvanized steel reinforcement; Investigator: **Radhakrishna G. Pillai (PI)**, Rs. 30.85 Lakhs; Sponsored by the International Zinc Association, USA; Mar 2022 – Aug 2023

C33. High Performance Concretes for Nuclear Power Plants in Coastal Regions - Corrosion & Service Life Assessments; Investigator: **Radhakrishna G. Pillai (PI)**, Piyush Chaunsali and Surender Singh; Rs 35.40 Lakhs; Sponsored by Indira Gandhi Centre for Atomic Research (IGCAR); Apr 2021 – Apr 2024

C32. Design of Cathodic Protection Systems for Reinforced Concrete Buildings; Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 10 Lakhs; Funded by NBCC (India) Limited, New Delhi; Mar 2021 – Sep 2021

C31. Preparation of the Comprehensive Conservation Management Plan for the Sardar Vallabhbhai Patel Stadium, Ahmedabad, Gujarat, India; Investigators: **Radhakrishna G. Pillai (PI)**, Arun Menon, Manu Santhanam, and Amlan Sengupta; Rs. 26.1 Lakhs; Funded by World Monuments Fund, USA; Mar 2021 – Aug 2022

C30. Performance evaluation of limestone calcined clay cement (LC3) – Phase III, Investigators: Manu Santhanam and **Radhakrishna G. Pillai**; Rs. 46.3 Lakhs; Funded by Swiss Development Agency through EPFL, Switzerland; Sep 2020 - Sep 2022.

C29. Concrete Materials for Use in Ayodhya Ram Mandir; Investigators: Manu Santhanam (PI), Ravindra Gettu, **Radhakrishna G. Pillai**, and Piyush Chaunsali; Rs. 35 Lakhs; Funded by L&T Construction; Sep 2020 – Mar 2022

C28. Providing Cathodic Protection repair and rehabilitation of Chajja at Rashtrapathi Bhavan, New Delhi; Investigators: Radhakrishna G Pillai (PI) and Arun Menon; Rs. 26 Lakhs; Funded by Central Public Works Department (CPWD), New Delhi; Jul 2020 – Jun 2022

C27. Good practices for construction, maintenance and repair of concrete bridges; Investigators: **Radhakrishna G. Pillai** (PI), Ravindra Gettu, Piyush Chaunsali, and Manu Santhanam; Rs. 10 Lakhs; Funded by Kerala Highway Research Institute, Kerala; Mar 2020 – Sep 2022

C26. Flowable, pre-blended cementitious grout with resistance to bleeding and softgrout for structural and geotechnical applications; Investigators: **Radhakrishna G. Pillai (PI)**, Ravindra Gettu, and Manu Santhanam; Rs. 36.36 Lakhs; Funded by Ultratech Cement Limited, Mumbai; Feb 2020 – Dec 2020

C25. Corrosion and mechanical characteristics of galvanized and plasma-coated steel reinforcement; Investigators: **Radhakrishna G. Pillai (PI)** and Lakshman Neelakantan; Rs. 6 Lakhs; Funded by Viki Industries Pvt. Ltd.; Feb 2020 – Dec 2021

C24. Structural/condition assessment of cooling tower at Rathnagiri Power Plant, Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 2 Lakhs; Funded by Ratnagiri Gas and Power Pvt. Ltd. (RGPPL), Maharashtra; Jan 2020 – Jun 2020

C23. Condition assessment of railway bridges; Investigators: Benny Raphael (PI), Rupen Goswami, Arun Menon, and **Radhakrishna G. Pillai**; Rs. 58.8 Lakhs; Funded by Southern Railways, Chennai; Aug 2019 – Oct 2022

C22. Condition assessment of reinforced concrete systems in port facilities; Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 3 Lakhs; Funded by S S Infrastructure Development Consultants Limited; Apr 2019 – Oct 2019

C21. ASTM Standards for CAC - Corrobit OCI – Testing; Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 7 Lakhs; Funded by Concrete Additives & Chemical Pvt. Ltd., Mumbai; Apr 2019 - Dec 2020

C20. Performance evaluation of concrete penetrating type corrosion inhibitors (Powerthrow); Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 7 Lakhs; Funded by Krishna Conchem Products Pvt. Ltd., Mumbai; Nov 2018 – Dec 2020

C19. Corrosion and mechanical performance of TMT steel rebars of different grades; Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 2.36 Lakhs; Funded by Metrolla Steels Limited, Kerala; Aug 2018 – Mar 2019

C18. Optimal Estate Management [Tests & Recommendations]; Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 14.4 Lakhs; Funded by DLF Limited, New Delhi; May 2018 – Dec 2020

C17. Evaluation of Sacrificial Anodes cathodic protection (SACP) systems for reinforced concrete, Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 10.7 Lakhs; Funded by Vector Corrosion Technologies (through Radhe StructoRepair Pvt. Ltd., Ahmedabad); Feb 2018 – Mar 2021

C16. Laboratory Testing and Service Life Estimation of Concrete Structures; Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 12.5 Lakhs; Funded by L&T Construction; Feb 2018 – Dec 2021

C15. Performance evaluation of limestone calcined clay cement (LC3) – Phase II, Investigators: Manu Santhanam, Ravindra Gettu, and **Radhakrishna G. Pillai**; Rs. 84 Lakhs; Funded by Swiss Development Agency through EPFL, Switzerland; Jun 2017 – Jun 2020.

C14. Proof Checking of Report on Durability for a Marine Structure Project; Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 10.4 Lakhs; Funded by L&T Construction; Oct 2017 – Jun 2018

C13. Performance Evaluation of Bi-Polar Corrosion Inhibitors for Reinforced Concrete Applications; Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 3.5 Lakhs; Funded by Sika India Pvt. Ltd., Feb 2017 – Mar 2018

C12. Development of specifications and guidelines for cold weather concreting in the Northern Command; Investigators: Ravindra Gettu (PI) and **Radhakrishna G. Pillai**; Rs. 6 Lakhs; Funded by The Indian Army – GE Arakkonam, Sep 2017 – Mar 2019

C11. Characterization of creep and shrinkage of concrete used in Statue of Unity; Investigators: Ravindra Gettu (PI) and **Radhakrishna G. Pillai**; Rs. 28.7 Lakhs; Funded by L&T Construction; Nov 2016 – Dec 2018

C10. Review of Strengthening of the Tunnel in CP of UAA06 package of Chennai Metro Rail Limited (CMRL); Investigators: Ravindra Gettu (PI) and **Radhakrishna G. Pillai**; Rs. 4.6 Lakhs; Funded by CMRL, Chennai; Nov 2016 – Jan 2017

C9. Condition and structural assessment of Rashtrapathi Bhavan, New Delhi, Investigators: Arun Menon (PI), **Radhakrishna G. Pillai**, and Amlan Sengupta; Rs. 42.76 Lakhs; Funded by Central Public Works Department (CPWD), New Delhi, 2016 – 2017

C8. Chloride-induced corrosion and service life assessment of Mumbai MonoRail Segments; Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 5 Lakhs, L&T Construction, Mumbai, 2015 – 2016

C7. Performance evaluation of limestone calcined clay cement (LC3) – Phase I, Investigators: Manu Santhanam, Ravindra Gettu, and **Radhakrishna G. Pillai**; Rs. 207 Lakhs; Funded by Swiss Development Agency through EPFL, Switzerland; Jun 2014 – Jun 2017.

C6. Advise on acceptance criteria for durability; Investigators: Manu Santhanam (PI) and **Radhakrishna G. Pillai**; Rs. 2.25 Lakhs; Funded by SPCL; Mar 2014

C5. Evaluation of corrosion inhibitors for steel-cementitious systems; Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 3 Lakhs; Chembond Chemicals Pvt. Ltd., Navi Mumbai; 2014 – 2015

C4. Performance evaluation of corrosion inhibitors for reinforced concrete systems; Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 2.5 Lakhs; Funded by the Institute for Construction Materials and Technologies Pvt. Ltd. (ICOMAT), Chennai, Tamil Nadu; 2013 – 2014

C3. Performance evaluation of corrosion resistant cement; Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 5 Lakhs; Funded by Jayajothi Cements Pvt. Ltd., Rajapalayam, Tamil Nadu; 2012 – 2013

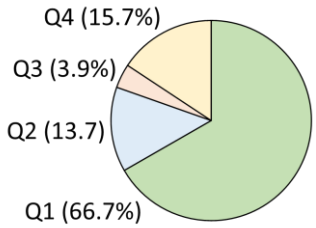
C2. Bi-Polar and calcium nitrite corrosion inhibitors for steel-cementitious systems; Investigator: **Radhakrishna G. Pillai (PI)**; Rs. 3 Lakhs; Funded by UltraPure Chemicals Pvt. Ltd., Karaikudi, Tamil Nadu; 2011 – 12

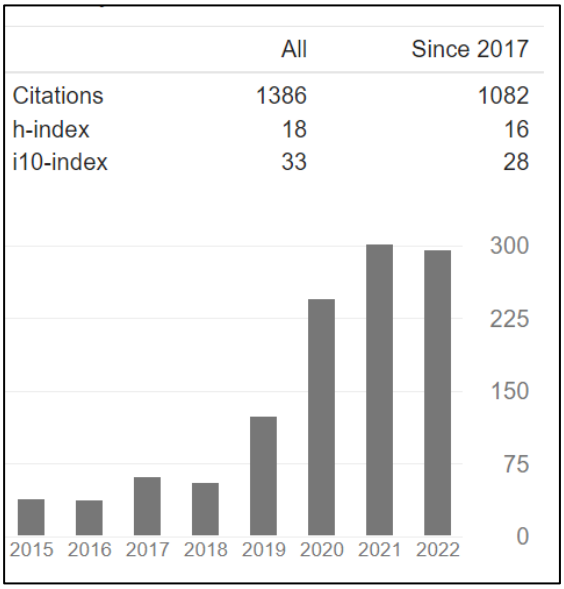
C1. Study of durability of concrete under different environmental conditions; Investigators: Ravindra Gettu (PI), Manu Santhanam, and Radhakrishna G. Pillai; Rs. 23 Lakhs; Funded by Lafarge Centre De Recherche, France; 2010 – 2015

REFEREED JOURNALS (RJ)

SCOPUS ID: 12781775200
RESEARCHER ID: G-4296-2017
ORCID: 0000-0003-3672-8768

SciVal statistics on "Articles and Reviews"





FWCI (overall): 1.05
FWCI (corrosion in concrete): 1.17
Chlorides and carbonation: 2.83

**Manuscripts that are Submitted/In-preparation.
Underscored names indicate collaborating students.

RJ**. Kamde, D.K., Joseline, D., and **Pillai, R. G.**, "Performance indicator and specifications of corrosion inhibiting admixtures," Submitted to *Corrosion and Degradation of Materials*, MDPI

RJ**. Kamde, D. K., and **Pillai, R. G.**, "Development of galvanic anode performance (GAP) test for assessing the longevity of cathodic protection systems in reinforced concrete," Submitted to *Corrosion Journal*, NACE

RJ**. Manickam, K. and Pillai, R. G. "Good grouting materials and practices for long-term corrosion protection of post-tensioned concrete structures," Submitted to *The Indian Concrete Journal*, Associated Cement Companies Ltd.

RJ**. Rengaraju, S., **Pillai, R. G.**, and Gettu, R., "Input parameters and nomograms for service life-based design of concrete structures exposed to chlorides." Submitted to *Journal of Building Engineering*, Elsevier

RJ**. Kamde D. K. and **Pillai, R. G.**, "Corrosion initiation and its effect on bond characteristics and service life of reinforced concrete systems with Cement-Polymer-Composite coated steel rebars," *Structures*, Elsevier (Provisionally accepted)

RJ60. Joseline, D., and **Pillai, R. G.**, "Electrochemical/microstructural studies on the stress corrosion cracking of prestressed steel strand in concrete with naturally ingressing chlorides, *Corrosion, NACE International* (Accepted)

RJ59. Giriraju, R., Sengupta, A.K., and **Pillai, R. G.** (2022). "Tensile behaviour of corroded strands in prestressed concrete systems." *Journal of The Institution of Engineers (India): Series A, Springer*

RJ58. Rathnarajan, S., Dhanya, B.S., **Pillai R. G.**, Gettu R. and Santhanam M., (2022) "Carbonation model for concretes with fly ash, slag, and limestone calcined clay – using accelerated and five – year natural exposure data." *Cement and Concrete Composites, Elsevier, 126, 104329*

RJ57. Kamde, D. K., Kessler, S., and **Pillai, R. G.** (2021) "Condition assessment of reinforced concrete systems with fusion-bonded epoxy-coated rebars." *Corrosion Journal*, NACE International, 77 (12)

RJ56. Rengaraju, S., and **Pillai, R. G.** (2021). "An accelerated chloride threshold test for uncoated steel in highly resistive cementitious systems (hr-ACT test)" *Construction and Building Materials, Elsevier, 305, 124797*

RJ55. Kamde, D. K., Manickam, K., **Pillai, R. G.**, and Sergi G. (2021). "Long-term performance of galvanic anodes for the protection of steel reinforced concrete structures." *Journal of Building Engineering, Elsevier*, 42, 103049

RJ54. Mohandoss, P., **Pillai, R. G.**, and Gettu, R. (2021). "Determining bond strength of seven-wire strands in prestressed concrete." *Structures, Elsevier*, 33

RJ53. Joseline, D., **Pillai, R. G.**, and Neelakantan, L. (2021). "Initiation of stress corrosion cracking in cold-drawn prestressing steel in hardened cement mortar exposed to chlorides." *Corrosion Journal*, NACE International, 77 (8)

RJ52. Krishnan N., Kamde, D. K., Zameel, D. V., **Pillai, R. G.**, Shah D., and Velayutham R.(2021). "Long-term performance and life-cycle-cost benefits of cathodic protection of concrete structures using galvanic anodes." *Journal of Building Engineering, Elsevier*, 42

RJ51. Mohan, M.K., Manohar, S., **Pillai, R. G.**, Santhanam M., and Gettu, R., (2021) "High-performance cementitious grouts for post-tensioned concrete systems – Performance specifications and prototype testing." *Construction and Building Materials*, Elsevier, 281, 122612

RJ50. Rengaraju, S., **Pillai R. G.**, Gettu, R., and Neelakantan, L. (2021). "Effect of test methods on corrosion phenomena of steel in highly resistive concrete systems and data interpretations." *Corrosion, NACE International*, 3705

RJ49. Kamde, D.K., and **Pillai R. G.** (2021). "Corrosion initiation mechanisms and prediction of the service life of concrete systems with fusion-bonded-epoxy (FBE) coated steel rebars and exposed to chlorides." *Construction and Building Materials, Elsevier*, 277, 122314

RJ48. Harilal, M., Kamde, D.K., Uthaman, S., George, R.P., **Pillai, R.G.**, Philip, J., and Albert, S.K. (2021). "The chloride-induced corrosion of a fly ash concrete with nanoparticles and corrosion inhibitor." *Construction and Building Materials, Elsevier*, 274, 122097

RJ47. Sakthivel, T., Gettu, R. and **Pillai, R. G.** (2021). "Drying Shrinkage of Concrete with Blended Cementitious Binders: Experimental Study and Application of Models", *The Indian Concrete Journal*, Associated Cement Companies Ltd., 95 (10)

RJ46. Sakthivel, T., Gettu, R. and **Pillai, R. G.** (2021). "Adjustment of RILEM B4 model parameters for better prediction of the shrinkage response of blended cement concrete", *The Indian Concrete Journal*, Associated Cement Companies Ltd., 95 (10)

RJ45. Kamde, D.K., Zintel, M., Kessler, S., and **Pillai, R. G.** (2020). "Performance indicators and specifications for fusion-bonded-epoxy (FBE) coated steel rebars in concrete exposed to chlorides." *Sustainable and Resilient Infrastructure, Taylor & Francis*, 10.1080/23789689.2020.1871539

RJ44. Joseline, D., and **Pillai, R.G.** (2020). "Enhancing service life of prestressed concrete structures by using fly ash and corrosion inhibitors." *The Indian Concrete Journal*, Associated Cement Companies Ltd., 94(11)

RJ43. Sherfudeen, A.P., **Pillai, R.G.**, Raghavan, N., and Kalidindi, S.N. (2020). "Factors affecting productivity and functionality of precast concrete building construction." *Indian Concrete Journal*, Associated Cement Companies Ltd., 94 (9)

RJ42. Kamde, D.K., and **Pillai, R.G.** (2020). "Effect of sunlight/ultraviolet exposure on the corrosion of fusion-bonded epoxy (FBE) coated steel rebars in concrete." *Corrosion, NACE International*, 76 (9)

RJ41. Rengaraju, S., Godara, A., Alapati, P., and **Pillai, R. G.** (2020). "Macrocell corrosion mechanisms of prestressing strands in various concretes." *Magazine of Concrete Research*, ICE Publishing Ltd., 72 (4)

RJ40. Nair, S.A.O., and **Pillai, R. G.** (2020). "Microstructural and corrosion characteristics of Quenched and Self-Tempered (QST) steel reinforcing bars."

Construction and Building Materials, Elsevier, 231, 117109

RJ39. Kamde, D. K., and **Pillai, R. G.** (2020). "Effect of surface preparation on corrosion of steel rebars coated with cement-polymer-composites (CPC) and embedded in concrete." *Construction and Building Materials,* Elsevier, 237

RJ38. Mohandoss, P., **Pillai, R.G.**, and Sengupta, A. (2020). "Effect of compressive strength of concrete on transmission length of pre-tensioned concrete systems." *Structures,* Elsevier, 23

RJ37. **Pillai, R. G.**, Gettu, R., and Santhanam, M. (2020). "Use of supplementary cementitious materials (SCMs) in reinforced concrete systems – Benefits and limitations." *Revista ALCONPAT,* SciELO, 10 (2)

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2. **Pillai, R.G.**, Gardoni, P., Hueste, M.D., Reinschmidt, K.F., and Trejo, D., "Probabilistic capacity models for corroding strands in post-tensioned bridges with voided tendons," In Kanda, J. Takada, T. & Furuta, H. (eds.), Proc. Of the 10th International Conference on the Applications of Statistics and Probability in Civil Engineering (ICASP10), Tokyo, Japan, July 31-August 3, 2007.
1. Ramakrishna, K., Agarwal, S., and **Pillai, R.G.**, "Enhanced Programming Techniques for the Analysis of Skeletal Structures," Proceedings of the South-East Asian Conference of Architects and Civil Engineers, Nepal, April 1999

NATIONAL CONFERENCE PAPERS

(Underscored names indicate collaborating students)

8. Giriraju, R, Sengupta, K.A., and **Pillai, R.G.**, 'An Assessment of the Deterioration of Flexural Capacity of Pretensioned Concrete Girder Due to Strand Corrosion', Paper No. 311, 10th Structural Engineering Convention (SEC), Chennai, December 21-23, 2017
7. Mohandoss, P., Kompella, K.S., **Pillai, R.G.**, 'Bond Performance of Pre-tensioned Concrete Systems, No. 827, 10th Structural Engineering Convention (SEC), Chennai, December 21-23, 2017
6. Raghavan, N., **Pillai, R.G.**, and Sherfudeen, A.P., The Indian Precast Concrete Industry – Where do we go from here?, National Conference on Precast Concrete Construction, Indian Concrete Institute, Chennai, February 12, 2016
5. Ariyath, A., **Pillai, R.G.**, Gettu, R., and Santhanam, M., "Deterioration of concrete materials in dam structures and possible testing and repair materials – A brief overview," National Dam Safety Conference, IIT Madras, Chennai, India, March 2015
4. Sherfudeen, A.P., Raghavan, N., **Pillai, R.G.**, and Kalidindi, S.N., "Productivity in precast concrete construction sites in India," Paper No. PA022, Indian Lean Construction Conference (ILCC), Mumbai, India, 6-7 February 2015
3. Firodiya, P.K., Menon, D., Sengupta, A.K., and **Pillai, R.G**., "A Probabilistic Assessment of the Deterioration of Flexural Capacity of a Reinforced Concrete Bridge Deck due to Corrosion of Steel Bars," Structural Engineering Congress (SEC-2012), S. V. National Institute of Technology, Surat, Gujarat, India, December 19-21, 2012
2. Jegan, V., Mary Jacob, V., and **Pillai, R.G.**, "Effects of corrosion inhibitor on the performance of mild steel and prestressing steel," Proceedings of the National Conference on Recent Advances in Civil Engineering (RACE-2011), Institute of Technology – Banaras Hindu University, Varanasi, U.P., India, October 14-16, 2011
1. **Pillai, R.G.**, "Corrosion and service life prediction of reinforced concrete structures," National Conference on Advances in Materials and Structures (AMAS 2011), Pondicherry Engineering College, Pondicherry, India, February 3-4, 2011.

OTHER PAPERS/POSTERS/PRESENTATIONS/INVITED TALKS

(Underscored names indicate collaborating students)

44. **Pillai, R.G.**, "Research needs in the areas of assessment and control of corrosion in prestressed concrete systems," **Keynote lecture in Gordon Research Conference**, Tuscany, Lucca (Barga), Italy, July 31 – August 5, 2022
43. Ananya A. and **Pillai, R. G.**, "Challenges and remedies to the design of SACP system in concrete." Proceedings of the International Conference and Expo on Corrosion (CORCON 2022), Udaipur, India
42. Srinivasan, S., Joseline, D., and **Pillai, R. G.,** "Stress Corrosion Crack studies of Prestressing Steel wires in hardened concrete exposed to chlorides in both laboratory and field conditions." Proceedings of the International Conference and Expo on Corrosion (CORCON 2022), Udaipur, India
41. Krishnan N., Keerthi V. T., **Pillai R. G.**, "Performance assessment of galvanic anode cathodic protection systems in reinforced concrete structures," Proceedings of the ICCRRR (International Conference on Concrete Repair, Rehabilitation, and Retrofitting), Cape Town, South Africa, 2022.
40. Ananya A. and Pillai, R. G., "Field performance of hybrid and galvanic anodes in reinforced lime concrete heritage structure using electrochemical and microstructural studies "Proceedings of the ICCRRR (International Conference on Concrete Repair, Rehabilitation, and Retrofitting), Cape Town, South Africa, 2022.
39. Kamde D. K., Joseline D., Rengaraju S., Karuppanasamy J., and Pillai R. G., "Corrosion and service life assessment of concrete structures," A Treatise in Corrosion Science, Engineering and Technology, (Eds. U. K. Mudali, T. S. Rao, S. Ningshen, R.G. Pillai, R. P. George, T. M. Sridhar), Springer Nature, Singapore.
38. Joseline D., and **Pillai R. G.**, "Electrochemical and chloride-induced corrosion parameters for service life design of prestressed concrete", NIGIS-SZ One-day Students symposium (ODSS-2022), 26th February 2022. (Online mode)
37. **Pillai R. G**. and Joseline D., "Corrosion and service life of prestressed concrete structures", The 7th International Corrosion Prevention Symposium for Research Scholars (CORSYM 2021), 17th November, Malaysia, 2021
36. Kamde D. K., Karupanasamy J., **Pillai R. G.**, Juby M., Sankar V., Veedu Z. D., and Shah D., "Service life extension of a coastal bridge by quarter-century," CORCON 2021, NIGIS, Mumbai, India (Best Presentation Award).
35. Manickam K., Kamde D.K., and **Pillai R.G.**, "Accelerated testing and service life estimation of galvanic anodes in reinforced concrete systems." 75th RILEM Annual week and International conference on Advances in Sustainable Construction Materials and Structures, Merida, Mexico, 2021 (online)
34. Manickam K. and **Pillai R.G.**, "Service life estimation of galvanic anodes in reinforced concrete systems" CORROSION 2021 (online).
33. Joseline D., and **Pillai R. G**., "Electrochemical and chloride-induced corrosion parameters for assessment of prestressed concrete", RILEM-IITM PhD Symposium on Construction Materials (Technologies for Low Carbon and Lean Construction), 24th September, IIT Madras, 2021. (Online mode)
32. Rathnarajan S., **Pillai R.G**., "Mix-design based model to estimate carbonation in concretes with OPC, fly ash, slag, and LC3," PhD symposium on construction materials, Technologies for Low Carbon and Lean Construction (online), 2021.
31. Rathnarajan S., Dhanya B.S., **Pillai R.G.**, Gettu R., Santhanam M., "Carbonation in concretes with OPC, fly ash, and LC3 systems: 8-year natural data and modelling for

tropical climate," International conference on Advances in Sustainable Construction Materials and Structures, Yuctan, Mexico, 2021.

30. Joseline D., and **Pillai R. G.,** "Electrochemical and chloride-induced corrosion parameters for service life design and assessment of prestressed concrete," International Conference on Advances in Sustainable Construction Materials and Structures, 29th August- 3 rd September, Merida, Mexico, 2021. (Online mode)
29. *Kamde, D.K., and **Pillai. R.G.,** "Service life of concrete systems with coated steel rebars", Poster presentation at ACI Convention, Chicago, USA, October 2020.
28. Joseline D., and **Pillai R. G.**, "Importance of Routine Residual Service Life Estimation of Pretensioned Concrete Structures- Structural Safety Point of View", 40th Cement and Concrete Science Conference, 31st August- 4 th September, Sheffield, UK, 2020. (Online mode)
27. Joseline D., **Pillai R. G.**, and Neelakantan L., "Passive-to-Active Transition and Chloride Threshold of Pre-tensioned Concrete Systems", 40th Cement and Concrete Science Conference, 31st August- 4th September, Sheffield, UK, 2020. (Online mode)
26. Rathnarajan S., and **Pillai R.G.**, "Corrosion rate of steel-embedded in cementitious systems with SCMs," International conference on innovative technologies for clean and sustainable development, Chandigarh, India, 2020.
25. Rathnarajan S., and **Pillai R.G**., "Determination of pH threshold and corrosion rate in carbonated mortars with different types of binders," Corrosion 2019, Tennese, Nashville, USA, 2019.
24. Joseline D., and **Pillai R. G.,** "Electrochemical Characterization of Chloride Induced Depassivation of ASTM A416 Steel used in Prestressed Concrete Structures", International Conference and Expo on Corrosion (CORCON 2019), NACE International India Section, 23rd to 26th September, Navi Mumbai, India, 2019
23. Joseline D., and **Pillai R. G.,** "Electrochemical Characterization and Corrosion Assessment of Pre-tensioned Structures", 5th Concrete Research in India Symposium, 14th September, IIT Madras, 2019
22. Joseline D., and **Pillai R. G.,** "Electrochemical Characterization and Challenges in Detecting Corrosion in Pre-tensioned Systems", Corrosion 2019, NACE International, 24th to 28th March, Nashville, Tennessee, 2019
21. Krishan N., Kamde D. K., and **Pillai R. G.**, "Cost-benefit analysis of reinforced concrete repair with and without sacrificial anodes," Proceedings of the 3 rd R. N. Raikar Memorial International Conference, Mumbai, India, Dec. 2018 (only presentation).
20. Zameel D. V., Naveen K., Kamde D. K., and **Pillai R. G.**, "Effect of concrete resistivity on the performance of SACP anodes," Proceedings of the CORCON 2018, NACE, Jaipur, Sept. 30 – Oct. 3, 2018. (only presentation).
19. Rengaraju, S., Wataru, K., Pillai R. G., and Neelakantan L., "Effect of cell geometry on electrochemical measurements of steelcementitious systems", CORSYM 2018, IIT Madras, NACE, Chennai, March 2018.
18. Kamde D. K. and **Pillai R. G.**, "Electrochemical response and service life estimation of Reinforced Concrete Structures with FBEC rebars," Proceedings of the CORSYM 2018, IIT Madras, NACE, Chennai, March 2018. (**Best Paper Presentation Award**)
17. Rathnarjan S., and **Pillai R.G.**, "Electrochemical response of embedded steel in carbonated limestone calcined clay mortar," CORCON 2018, Jaipur, India, 2018.
16. Rengaraju, S and **Pillai R.G.** "Electrochemical testing in highly resistive steel-cementitious systems", CORCON 2017, India
15. Kamde D. K. and **Pillai R.G.** "Short-term test methods to evaluated chloride threshold

of CPC coated rebars," Proceedings of the CORCON 2017, NACE, Mumbai, Sept. 2017.

14. Joseline D., Karuppanasamy J., Priya P., and **Pillai R. G.**, "Corrosion Behaviour of Prestressing Steel in some Practical Scenarios", International Conference and Expo on Corrosion (CORCON 2017), NACE International India Section, 18th to 20th September, Mumbai, India, 2017
13. **Pillai R.G.**, Santhanam M., Gettu R., Dhandapani Y., Rengaraju S., Rathnarajan S., Basavaraj S A., "Service life estimation and life cycle assessment for Portland cement, fly ash and LC3 systems," Service-life prediction of concrete, 3rd Meeting: The Corvallis Workshops, Oregon, USA, 2017.
12. Rathnarjan S., and **Pillai R.G**, Carbonation rate and service life of RC systems with mineral admixtures and special cements," CORCON 2017, Mumbai, India, 2017.
11. **Pillai, R.G.**, "Durability-based design of concrete structures," CORSYM 2017, May 3-4, Kuala Lumpur, Malaysia
10. **Pillai, R.G.**, "Durability-based design of concrete structures," Universiti Kebangsaan Malaysia (UKM), The National University of Malaysia, May 2, 2017, Kuala Lumpur, Malaysia
9. Kompella, S.K., Gettu, N., Mohandoss, P., and **Pillai, R.G.**, "A Study on the performance of bond in pre-tensioned concrete railroad ties (sleepers)", The concrete convention and exposition, American concrete institute, Detroit, USA, March 26-30, 2017. (Oral presentation)
8. Joseline, D., Karuppanasamy, J., Dhanya, B.S., and **Pillai, R.G.**, "Chloride Threshold of Prestressing Steel and Corrosion Initiation Time – Laboratory Tests and Case Study", Proceedings of the International Conference and Expo on Corrosion (CORCON 2016), New Delhi, India, September 18-21, 2016 (**Best Poster Award**)
7. Nair, S.A.O., Abhinav, R., Mitra, P., Aiswarya, R., Ishack, S., and **Pillai, R.G.**, "Microstructural phase distribution and corrosion characteristics of Thermo-Mechanically Treated (TMT) steel reinforcement bars," Proceedings of the International Conference and Expo on Corrosion (CORCON 2016), New Delhi, India, September 18-21, 2016. (**Best Poster Award**)
6. Godara, A., Padmapriya, and **Pillai, R.G.,** "Corrosion Initiation In 7-Wire Strands Used In Prestressed Concrete Structures," Proceedings of the International Conference and Expo on Corrosion (CORCON 2016), New Delhi, India, September 18-21, 2016
5. Kamde, D., and **Pillai, R.G.,** "Effect of surface treatment on the performance of Cement Polymer Composite (CPC) coatings for steel in concrete structures," Proceedings of the International Conference and Expo on Corrosion (CORCON 2016), New Delhi, India, September 18-21, 2016
4. Mohandoss, P., Kompella, S.K., Maheswari, S.K., Nair, S.A.O., and **Pillai, R.G.**, Poster on "Factors influencing the bond behaviour of pretensioned concrete system" Gordon Research Conference (GRC), Hong kong, China, July 31 – August 8, 2016.
3. Karuppanasamy, J., and **Pillai, R.G.**, "A test method to determine the effect of corrosion inhibitors on chloride threshold of steel-cementitious systems", Proceedings of the International Conference and Expo on Corrosion (CORCON 2015), Chennai, India, November 19-21, 2015.
2. **Pillai, R.G.**, Karuppanasamy, J., Dhanya B. S., Nair, A.O., Santhanam, M., and Gettu, R., "Enhancing the corrosion resistance of reinforced concrete structures – Indian Scenario and challenges ahead", Invited Lecture, International Conference and Expo on Corrosion (CORCON), Chennai, India, November 19-21, 2015.

1. Rengaraju, S., Rathnarajan, S., Velayudhan, A., Pugal, O., and **Pillai, R.G.**, "Effect of Corrosion Inhibitors on Durability Parameters of Cement Mortar", CORCON 2015, India (**Best paper award in the "Young Scientist Forum" Category**)

PATENTS

3. "Assessment of Galvanic Anode Performance (GAP) for cathodic protection (CP) of reinforced concrete structures" (Indian Patent Granted in January 28, 2022), Inventors: Radhakrishna G. Pillai and Deepak K. Kamde, Indian Patent Number: 387704

2. "Flowable, pre-blended cementitious grout with resistance to bleeding and softgrout for structural and geotechnical applications", Inventors: Radhakrishna G. Pillai, Manu Santhanam, Ravindra Gettu, Manu K. Mohan, Indian Patent Application Number: 201941021719, Filed on May 31, 2019, (Status: Application awaiting examination)

1. "Method of testing steel reinforcing bars", Inventors: Radhakrishna G. Pillai and A. O. Sooraj Nair, Indian Patent Application Number: 201741036718, Filed on December 16, 2017, (Status: Application awaiting examination)

STUDENT GUIDANCE

PhD (Graduated – 8; Ongoing – 6+1)

MS (Graduated – 5; Ongoing – 1)

MTech/DD (Graduated – 24; Ongoing – 2)

Doctor of Philosophy (Ph.D.) – Graduated

8. Resmi Giriraju (CE13D050) – "Flexural Behaviour of Pre-tensioned Bridge Girders subjected to chloride induced corrosion in strands" (Co-guiding with Prof. Amlan Sengupta as Primary guide
7. Sundar Rathnarajan (CE15D014) – "Modelling carbonation in concretes with fly ash, slag or limestone calcined clay and corrosion assessment of embedded steel"; Viva Voce scheduled for September 1, 2022; Sole-guide
6. Dyana Joseline (CE15D031) – "Electrochemical and chloride-induced corrosion parameters for service-life design and assessment of prestressed concrete"; December 2021; Sole-guide
5. Deepak Kamde (CE15D074) – "Study on the assessment of corrosion in reinforced concrete systems with coated reinforcement and cathodic protection systems", August 2020; Sole-guide
4. Sripriya Rengaraju (CE14D024) – "Study on the electrochemical response from advanced steel-cementitious systems and chloride threshold estimation"; September 2019; Sole-guide
3. Sakthivel Thangavel (CE11D031) – "Experimentation and modeling of creep and shrinkage of concrete systems with various SCMs"; September 2019; Co-guiding with Prof. Ravindra Gettu as Primary guide

2. Prabha Mohandoss (CE13D046) – "Study on the factors affecting the performance and evaluation of steel-concrete bond in prestressed concrete systems"; September 2019; Sole-guide
1. Jayachandran Karupanasamy (CE10D022) – "Study on accelerated chloride threshold test for systems with corrosion inhibiting admixtures and corrosion rates of various steels in cement mortar"; July 2017; Sole-guide

Doctor of Philosophy (Ph.D.) – Ongoing

6. Shefali Aggarwal (CE22D005) – Tentative Title: "Studies on performance of corrosion inhibitors in concrete with low-carbon cements"; Started in August 2022; Sole-guide
5. Umesh Hule (CE21D005) – Tentative Title: "Studies on carbonation and carbonation-induced corrosion in concrete with low-carbon cements"; Started in August 2021; Sole-guide
4. Keerthi Vadakke Thalakkal (CE20D082) – Tentative Title: "Studies on electrical/electrochemical modeling for routine, non-destructive testing of galvanic anodes in concrete structures"; Started in April 2021; Sole-guide
3. Sreelakshmi Srinivasan (CE20D077) – Tentative Title: "Studies on corrosion and service life of prestressed concrete systems"; Started in April 2021; Sole-guide
2. Karthikeyan Manickam (CE18D014) – Tentative Title: "Corrosion mechanisms and cathodic protection of post-tensioned concrete systems", Thesis proposal defended in August 2021; Sole-guide
1. Vimal Mohan (CE18D031) – "Study on corrosion of galvanized steel rebars in concrete"; Primary guide (Co-guide is Dr. P. Srinivasan, CSIR-SERC, Chennai)

**. Roopa Vijayaraghavan (Not enrolled in IIT Madras) – "Study on condition assessment and cathodic protection of reinforced concrete roof elements", Co-guide (Primary-guide: Prof Haji Sheikh Mohammed, BSA Crescent University, Chennai)

Master of Science (M.S.) – Graduated

5. Naveen Krishnan (CE18S027) – "Field performance assessment and an attempt for electrochemical modelling of cathodic protection systems in reinforced concrete"; August 2021; Sole-guide
4. Manu K. Mohan (CE16S001) – "Development of a flowable, high-performance cementitious grout for post-tensioning applications"; May 2019; ; Sole-guide
3. Sooraj A.O. Nair (CE14S022) – "A study on corrosion and mechanical characteristics of quenched and self-tempered steel reinforcing bars in concrete structures"; July 2017; Sole-guide
2. Saarthak Surana (CE13S031) – "Performance evaluation of curing compounds using strength and durability parameters of concrete"; July 2017; Sole-guide (co-guide: Prof. Manu Santhanam)
1. Ranjitha Rajagopal (CE13S027) – "Assessment of mechanical properties of corroded rebars using digital image correlation (DIC)"; July 2016; Sole-guide

Master of Science (M.S.) – Ongoing

1. Ananya Ajayan (CE21S001) – Performance assessment of galvanic anodes and design of cathodic protection systems for reinforced concrete systems; Ongoing; started in August 2021

M. Tech. and Dual Degree (DD; Integrated B.Tech. & M.Tech.) – Graduated

24. M.Tech., Maj. Balu Phanicker (CE19M003) – A numerical study of a reinforced concrete structure constructed under cold weather, 2021
23. M.Tech., Maj. Praveen Joshi (CE18M018) – An experimental study on the mechanical properties of concrete for cold weather construction, 2020
22. M.Tech., Ashwini Reddy (CE18M037) – Review of Joints and connections and codal comparisons of precast concrete buildings, 2020; Co-guide: Prof. N. Raghavan
21. M.Tech., Asutosh Biswal, (CE18M067) – Understanding electrochemical characteristics of prestressing steel embedded in various cementitious systems and probabilistic service life assessment, 2020
20. DD, Sriram Kompella (CE14B026) – Enhancing the bond strength of pretensioned concrete railway sleepers, 2019
19. DD, Aakhil (CE14B046) – Effect of curing duration on the compressive strength and durability parameters of various concretes, 2019
18. M.Tech., Zameel D.V. (CE17M020) – Cathodic protection of reinforced concrete structures – Laboratort and field studies, 2019
17. M.Tech., Vishnu Ayanampudi (CE15M005) – Mixture proportioning and flow properties of cementitious grouts for post-tensioning applications, 2017; Co-guide: Prof. Manu Santhanam
16. M.Tech., Abhishek Srivastava (CE15M101) – Effect of advanced concrete materials and construction techniques on the cost and speed of construction, 2017; Co-guide: Prof. N. Raghavan
15. M.Tech., Gopakumar Kaladharan (CE15M009), Development of guidelines for cold-weather concreting in India, 2017; Co-guide: Prof. Ravindra Gettu
14. DD, Shashank Aandhwan – Study on corrosion of steel fibres by 24rganized corrosion method, 2017
13. DD, Anand Godara (CE12B079) – Effect of corrosion inhibitors on the transport properties of cementitious systems, 2017
12. DD, Abhishek Raj (CE12B065) – Study on the flow properties of cementitious grouts and identifying suitable test methods, 2017
11. M.Tech., Ashok Gorantla (CE14M131), Development of indigenous high performance grout for post-tensioning applications in India, 2016; Co-guide: Prof. Manu Santhanam
10. M.Tech., Saurabh Singh (CE14M010) Barriers in precast concrete building construction and an action plan, 2016; Co-guide: Prof. N. Raghavan
9. DD, Gokul Dev V. (CE11B015) Study on corrosion of steel fibres in concrete, 2016
8. M.Tech., Ramya Thirunavukkarasu (CE13M169) – Formulation of cementitious grouts for post-tensioning applications, 2015; Co-guide: Prof. Manu Santhanam
7. M.Tech., Suruthi Kamalakkannan (CE13M176) – Evaluation of commercially available post-tensioning grouts and assessment of mixing variables, 2015; Co-guide: Prof. Manu Santhanam
6. M.Tech., Arifullah (CE3M153) Assessment and measures for the growth of Indian precast concrete construction industry, 2015; Co-guide: Prof. N. Raghavan
5. DD, Neelotpal Shukla (CE10B090) – Modelling of chloride diffusion coefficients in concrete with supplementary cementitious materials and sensitivity analysis, 2015

4. DD, Nitish Kumar – Precast concrete construction: A review of promotional policies a worldwide and feasibility in India, 2014; Co-guide: Prof. N. Raghavan
3. DD, Prasanth Alapati (CE09B003) Accelerated corrosion test method and evaluation of steel-cementitious systems with corrosion inhibitors and blended cements, 2014
2. M.Tech., Swathi Kurumoji (CE11M185) Comparative evaluation of precast and cast in-situ construction for multi-storied buildings, 2013; Co-guide: Prof. N. Raghavan
1. M.Tech., Vibha Venkatramu (CE10M200) Electrochemical characterization of thermomechanically treated (TMT) steel in mortar with corrosion inhibitors, 2012

M. Tech. and Dual Degree (DD; Integrated B.Tech. & M.Tech.) – Ongoing

2. DD, Yekkala Eswitha (CE18B135) – Development of tools for durability design of concrete structures
1. M.Tech, Rahul Mandloi (CE21M122) – Feasibility study of precast concrete construction in India

AWARDS WON BY MY STUDENTS

- **Best MS Thesis 2022**, AMPP India Chapter
  Naveen Krishnan, "Field performance assessment and an attempt for electrochemical modelling of cathodic protection systems in reinforced concrete," MS Thesis, Dept. of Civil Engineering, IIT Madras, Chennai

- **Best PhD Thesis 2021**, NACE International Gateway India Section (NIGIS)
  Deepak K Kamde, "Electrochemical characteristics, bond behaviour, and service life of reinforced concrete systems with coated steel reinforcement and exposed to chlorides," PhD Thesis, Dept. of Civil Engineering, IIT Madras, Chennai

- **Best MS Thesis 2020**, Indian Concrete Institute – Chennai Centre
  Manu K. Mohan, Development of a flowable, high-performance cementitious grout for post-tensioning applications" MS Thesis, Dept. of Civil Engineering, IIT Madras, Chennai

- **Best MS Thesis 2017**, NACE International Gateway India Section (NIGIS)
  Sooraj. A.O. Nair, "A study of corrosion and mechanical characteristics of quenched and self-tempered (QST) or TMT steel reinforcing bars used in concrete structures", MS Thesis, Dept. of Civil Engineering, IIT Madras, Chennai

- **Best MS Thesis 2017**, Indian Concrete Institute – Chennai Centre
  Saarthak Surana, "Performance evaluation of curing compounds using strength and durability parameters of concrete"; Co-guide: Prof. Manu Santhanam; MS Thesis, Dept. of Civil Engineering, IIT Madras, Chennai

- **Institute Research Award 2019**, IIT Madras
  Sripriya Rengaraju for her PhD research at IIT Madras

- **Prime Ministers Research Fellowship**
  - 2022 – Umesh Hule – to pursue PhD in the area of carbonation and carbonation-

induced corrosion of reinforced concrete structures

- **Prime Ministers Fellowship**
  - 2022 – Keerthi Vadakke Thalakkal – to pursue PhD in the area of non-destructive evaluation of cathodic protection systems in concrete structures (with co-funding from M/S Structural Specialties and Projects Pvt. Ltd., Mumbai)
  - 2022 – Sreelakshmi Sreenivasan – to pursue PhD in the area of corrosion assessment and testing of prestressed concrete systems (with co-funding from M/S Usha Martin Pvt. Ltd., Ranchi)

- **NACE Foundation India Scholarship**
  - 2021 – Karthikeyan Manickam
  - 2021 – Naveen Krishnan
  - 2020 – Deepak K. Kamde
  - 2020 – Sripriya Rengaraju
  - 2019 – Dyana Joseline
  - 2019 – Sundar Rathnarajan

- **NACE International Graduate Student Book Store Award**
  - 2020 – Deepak K. Kamde
  - 2020 – Srirpriya Rengaraju
  - 2021 – Dyana Joseline

- **DST-Augmenting Writing Skills for Articulating Research (Awsar)**
  - 2021 – Dyana Joseline (top 100 in Ph.D. categary)
  - 2021 – Sripriya Rengaraju (top 10 in Postdoc categary)

- **Best Poster Awards**
  - Karthikeyan Manickam, and Radhakrishna G. Pillai, "Performance Evaluation and Service Life Estimation of Galvanic Anodes in Reinforced Concrete Systems," CORCON 2021.
  - Karthikeyan Manickam, Deepak K. Kamde and Radhakrishna G. Pillai, "Accelerated Testing and Service Life Estimation of Galvanic Anodes in Reinforced Concrete Systems," at RILEM Week 2021, Merida, Mexico, Aug 29 – Sep 3, 2021
  - Naveen Krishnan and Radhakrishna G. Pillai, "Understanding the throwing power of galvanic anodes in reinforced concrete structures using numerical simulations," CORCON 2019, Mumbai.
  - Sripriya Rengaraju, Radhakrishna G. Pillai, Lakshman Neelakantan, Ravindra Gettu, and Manu Santhanam, "Electrochemical response and chloride threshold of steel embedded in highly resistive concrete systems," ACI 123 Concrete Research Poster Session, ACI Spring Convention, Quebec, Canada, March 19-23, 2019
  - Prabha Mohandoss, Radhakrishna G. Pillai, Ravindra Gettu, and Amlan K. Sengupta, "Strand-Concrete Bond in Pre-tensioned Concrete Systems – Mechanisms and Laboratory Testing," ACI 123 Concrete Research Poster Session, ACI Spring Convention, Salt Lake City, USA, March 26-30, 2018
  - Sripriya Rengaraju and Radhakrishna G. Pillai, "Challenges in Determining the Chloride Threshold of Steel Embedded in Cementitious Systems," 71st Annual RILEM Week ICACMS (Int. Conf. on Advances in Construction Materials and Systems), Chennai, September 3-8, 2017
  - Dyana Joseline and Radhakrishna G. Pillai, "Effect of Corrosion Inhibitor on

Critical Chloride Threshold of Prestressing Steel" at CORCON 2016, New Delhi, September 18-21, 2016
- Sooraj A.O. Nair and Radhakrishna G. Pillai, "Microstructural phase distribution and corrosion characteristics of Thermo-Mechanically Treated (TMT) steel reinforcement bars" at CORCON 2016, New Delhi on September 18-21, 2016
- Rengaraju, S., Rathnarajan, S., Velayudhan, A., Pugal O., and Pillai, R.G., "Effect of Corrosion Inhibitors on Durability Parameters of Cement Mortar" at CORCON 2015, Chennai, November 19-21, 2015

- **Best Paper Presentation Awards**
  - Deepak K. Kamde and Radhakrishna G. Pillai, "Service life extension of concrete structures by quarter-century," CORCON 2021 (Online)
  - Deepak K. Kamde and Radhakrishna G. Pillai, "Electrochemical Responses and Service Life Estimation of Reinforced Concrete Structures with Fusion-Bonded-Epoxy-Coated Rebars," at 5th CORSYM 2018, Chennai, March 23-24, 2018
  - Sundar Rathnarajan and Radhakrishna G. Pillai, "Carbonation-induced corrosion and service life estimation", CORCON 2017, Mumbai, September 17-20, 2018

- **Best Project Awards**
  - Sooraj A.O. Nair, Project titled "A Low Cost Extensometer for Civil/Mechanical Engineering Research Laboratories in Developing Countries" was selected as the 'Best Project' under 'National Level' category in 'Civil Engineering' stream in the Engineering Students Innovation Challenge (ESIC) 2017, 27rganized by International Society for Scientific Research and Development (ISSRD), India, January 2017.
  - Alapati, P., Ranjith, K.S., Ranjitha, R., Kumar, N., Jayachandran, K., National competition on Corrosion Awareness Video Organized by CII-Corrosion Management Committee & National Institute of Ocean Technology, Chennai, 2013

PROFESSIONAL SERVICES

- **Association of Civil Engineering Doctoral Students (AceDocs), Texas A&M University**
  - Founding President; established "AceDocs" with approximately 50 doctoral students; Fall 2006
  - Successfully organized the **First CESRS** (Civil Engineering Student Research Symposium) at TAMU; Fall 2007
  - Co-edited the CESRS Proceedings with 51 student-authored papers (the papers were reviewed by civil engineering faculty and student participants)
  - Organized several invited-seminars on professional development and related topics
  - Provided professional mentoring services to undergraduate and graduate students

- **Peer reviewer**
  - ACI Structural Journal
  - ACI Materials Journal
  - ASCE J. of Materials in Civil Engineering
  - RILEM Materials and Structures, Springer
  - Construction and Building Materials, Elsevier
  - Cement and Concrete Research, Elsevier
  - Cement and Concrete Composites, Elsevier
  - Structures, Elsevier
  - Engineering Structures, Elsevier

- Indian Concrete Institute Journal
- Indian Concrete Journal

- **Indian Concrete Institute (ICI)**

  - Executive committee member (2021 – present)
  - Chairperson – ICI Chennai Chapter (2018 – 2021)
  - Member, Governing Council (2017-19)
  - Life Member
  - Past Member, Executive Committee, ICI-TNCC
  - Past Faculty advisor, ICI Students chapter, IIT Madras, Chennai
  - Faculty coordinator, **First ICI-FEST**, March 13-14, 2013; Now, ICI-FEST has become a flagship student level program of ICI and many colleges compete to organize the same.
  - Faculty coordinator, **First ICI-IITM National Concrete Canoe Competition (NCCC)**, August 21-23, 2015
  - Peer reviewer and one of the key organizers for ACECON 2010, Chennai, India
  - Coordinator, One-Day National Colloquium on Concrete Construction for Coastal Conditions – Causes, Concerns, and Challenges (7Cs), Kochi, Kerala
  - Coordinator, ICI-IITM 5-day course on Advanced Concrete Technology, February 23-28, 2014
  - Coordinator, **AICTE sponsored and RILEM-ICI 5-day course on Advanced Concrete Technology**, November 29 – December 4, 2015 (parallel courses)
  - Peer reviewer for ACECON 2015, Kolkata
  - Actively assisted ICI-Tamil Nadu Chennai Chapter in organizing many workshops/conferences for the past about 6 years
  - Member of multiple Award Selection Committees of ICI

- **AMPP India Chapter**
  (formerly NACE International Gateway India Section (NIGIS), Chennai, India)

  - Executive committee member, AMPP India Chapter (since 2019)
  - Faculty Advisor – South Zone (2018-20)
  - Secretary – South Zone (2017 – 19)
  - Joint Secretary – South Zone (2016 – 17)
  - Guided the IITM team towards winning the 1st prize in the national Competition on Corrosion Awareness Video, Corrosion Awareness Day, NIOT, Chennai; This video is posted on ICI website for wider dissemination
  - Coordinator, 1st workshop on C3S (Corrosion Control in Concrete Structures) at IIT Madras
  - Coordinator, 2nd workshop on C3S on September 8, 2017
  - Session Chair and Judge, CORSYM 2015, IIT Madras, Chennai
  - Member, Organizing Committee, CORCON 2015, Chennai
  - Chair of the Symposia on Corrosion in RCC Structures; Convener of Technical Interactive Forum on Corrosion in RCC Structures, CORCON 2016, New Delhi
  - Session Chair and Judge, and Invited Lecture in Workshop on Corrosion in Concrete Structures, CORSYM 2017, Kuala Lumpur
  - Chair of the Symposia on Corrosion in RCC Structures; Convener of Technical Interactive Forum on Corrosion in RCC Structures, CORCON 2017, Mumbai

- **RILEM, International Union of Laboratories and Experts in Construction Materials, Systems, and Structures**

  - Regional Convener, South Asia
  - Senior Member
  - Member, Technical Committee on "TDC – Test methods to determine durability of concrete under combined environmental actions and mechanical load"
  - Member, Technical Committee on "SCI – Characteristics of the steel/concrete interface and their effect on initiation of chloride-induced reinforcement corrosion"
  - Co-chair, Organizing Committee, ICACMS 2017 and 71st RILEM Annual Week, Chennai

- **BIS, Bureau of Indian Standards**
  - Member of CED 2 on Cement and Concrete
  - Member of CED 54 on Reinforcement in Concrete
  - Member, WG on IS 13620 on Epoxy-coated steel rebars
  - Convener WG on IS 12594 on Galvanized steel rebars
  - Convener, WG on Fiber Reinforced Polymer (FRP) bars for concrete applications
  - Member of CED 32 on Prefabricated Concrete Structures
  - Convener, WG on developing Table of Contents by combining IS 11596 and 11447 on precast concrete structures

- **Indian Roads Congress (IRC)**
  - Life Member (No. 250876)

- **Civil Engineering Association (CEA)**
  - CEA Convener and co-convener (2 years) and took active role even after that until a few years ago
  - Designed CEA Logo (along with my student Prasanth Alapati)
  - Established CEA Awards to energize students towards co-curricular activities and recognize those with all-round performance
  - Year-round programs in addition to the flagship programme, CEA Fest
  - **CE Research Expo**

- **Services to various committees at IIT Madras**
  - Various committees of Department of Civil Engineering (invested significantly in the design and implementation of the new website)
  - Various committees of Engineering Unit
  - Various committees of Saarang / Shaastra / RSD

- **Services to other engineering colleges**
  - Member, Advisory Committee, Dept. of Civil Engg., RIT Govt. Engineering College, Kottayam, Kerala
    - Assisted in establishing and laying out a plan for Concrete Durability Research lab, the first of its kind in Kerala
    - Delivered lectures in multiple workshops and short-term training programs
  - Member, Advisory Committee, Dept. of Civil Engg., Albertian Institute of Science and Technology (AISAT), Kochi, Kerala
    - Assisted in the design and equipment selection for Concrete Technology Lab
  - Member, Faculty Selection Committee, Thiagarajar College of Engineering, Madurai

OUTREACH LECTURES

Delivered more than **300 lecture-hours** in about 12 years on the topics related to:

- Corrosion, durability, and service life of concrete structures,
- Research methodology and technical writing skills, and
- Choosing a career and career prospects in civil engineering
- Teaching as a **profession of choice**

in various engineering colleges/organizations/workshops including…

Tamil Nadu

- College of Engineering Guindy campus, Anna University
- NIT Trichy
- PSG College of Technology, Coimbatore
- Govt. College of Technology, Coimbatore
- Amritha Vishwa Vidyapeetham, Coimbatore
- Central Electrochemical Research Institute (CECRI), CSIR, Karaikudi
- Alagappa Chettiar College of Engineering and Technology, Karaikudi
- K.S.R. Engineering College, Tiruchengodu
- Kongu Engineering College, Perundurai
- Gandhigram Rural University, Gandhigram, Dindigul
- Thiagarajar College of Engg., Madurai
- S.K.P. Engg. College, Peruvannamalai
- Crescent University, Chennai
- Vellore Institute of Technology (VIT), Chennai Campus
- S.A. Engineering College, Chennai
- SRM Valliammai Engg. College, Chennai
- SRM University, Kattankulathur Campus
- SRM University, Ramapuram Campus

Kerala

- College of Engineering, Trivandrum
- Government Engineering College, Barton Hill, Trivandrum
- TKM College of Engineering, Kollam
- Rajiv Gandhi Institute of Technology, Govt. Engg. College, Kottayam
- Cochin University of Science and Technology, CUSAT, Kochi
- SCMS College of Engineering, Kochi
- M.A. College of Engineering, Kothamangalam
- Government Engineering College Thrissur
- NSS Engineering College, Palakkad
- Al-Ameen Engineering College, Palakkad
- Institution of Engineers, Palakkad Chapter
- Government Engineering College Kannur

Karnataka/Andhra Pradesh/Telangana

- NIT Karnataka, Suratkal

- KL University, Vijayawada, Andhra Pradesh
- JNTU Kukatpally, Hyderabad, Andhra Pradesh
- BITS Pilani, Hyderabad

North India

- IIT Bhubaneswar, Orissa
- BITS Pilani, Rajasthan
- Manipal University, Jaipur
- NIT Jaipur
- MBM Engineering College, Jodhpur, Rajasthan
- Coal India Ltd. (Ranchi)
- 55th Annual NASA Convention, National Association of Students of Architecture, Gateway College for Architecture and Design, Sonepat, Haryana

Abroad

- Politechnico de Milano, Italy
- China Building Materials Academy, Beijing, China
- Universiti Kebangsaan Malaysia, Selangor, Malaysia