Short Curriculum Vitae

RADHAKRISHNA G PILLAI, Ph. D.

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Academic profile

Prof. Radhakrishna G Pillai earned a bachelor's degree in civil engineering from the M N Regional Engineering College (now MNNIT) in Allahabad, India. He then went on to earn an MS and PhD in Civil Engineering from Texas A&M University (TAMU) in College Station, USA, where he became passionate about combating corrosion in reinforced and prestressed concrete structures. In September 2010, he joined IIT Madras, where he has been teaching undergraduate and graduate courses, including NPTEL MOOC courses, in the areas of construction materials, concrete technology, and corrosion, deterioration, repair, and rehabilitation of concrete structures. He has guided eight PhD and five MS students and is currently guiding six PhD and one MS student. He is currently running various projects focusing on steel corrosion and its impact on the durability and service life of concrete structures. In particular, he is focused on developing corrosion test methods, databases, and tools for practicing engineers to promote service life-based design of concrete structures. Recently, he has been extending his research towards cathodic protection and the extension of the residual service life of concrete structures. Most of his projects focus on understanding the fundamentals and applying them to practical challenges and modifying standards and specifications. He has co-authored over 60 journal papers and filed three patents, one of which has been granted. In 2016, he received the Outstanding Young Concrete Engineer Award from the Indian Concrete Institute, Tamil Nadu Chapter. In 2019, he received the Excellence in Corrosion Science & Technology Award from the NACE International – Gateway India Section. He is also active in the Indian Concrete Institute (ICI), Association of Materials Protection and Performance (AMPP, formerly NACE), and The International Union of Laboratories and Experts in Construction Materials, Systems, and Structures (RILEM). He is committed to developing technologies to '***combat corrosion of steel in concrete and estimate & extend the service life of concrete structures***.

Earned Degrees

- B. Tech. (Civil), M N Regional Engg. College (now MNNIT), Allahabad, India; 1999
- M. S. (Civil), Texas A&M Univ., College Station, Texas, USA; 2003
- Ph.D. (Civil), Texas A&M Univ., College Station, Texas, USA; 2009

Areas of Interest

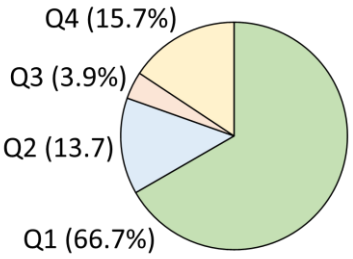
- Corrosion mechanisms, control, and service life of concrete structures
- Grouting and cathodic protection of prestressed concrete systems
- Promoting precast concrete construction
- Development of guidelines, codes of practice, and specifications

Work Experience

Graduate Research Assistant	Texas A&M Univ. System, USA	Dec 2000 – Jan 2009
Postdoc	Texas A&M Univ. System, USA	Jun 2009 – Oct 2009
Postdoc	Oregon State Univ., USA	Oct 2009 – Aug 2010
Assistant Professor	IIT Madras, Chennai, India	Sep 2010 – July 2017
Associate Professor	IIT Madras, Chennai, India	Jul 2017 – Nov 2022
Professor	IIT Madras, Chennai, India	Nov 2022 – Present

Publications (SCOPUS ID: 12781775200)

- 60 peer-reviewed journal papers
- 52 peer-reviewed conference papers
- 50+ other publications
- 3 patents filed; One granted
- **SciVal statistics** on "Articles and Reviews"
  - h-index: 18
  - FWCI (overall): 1.05
  - FWCI (corrosion in concrete): 1.17
  - Chlorides and carbonation: 2.83



Research Guidance

- Graduated eight Ph. D. students and five M. S. (by Research) students
- Currently guiding seven Ph. D. students and one M. S. (by Research) student
- Guided 24 M. Tech./Integrated B. Tech & M. Tech. projects

Courses Instructed

- CE2330 - Civil Engineering Materials and Construction
- CE3420 - Concrete Technology
- CE5120 - Maintenance and Rehabilitation of Constructed Facilities
- CE5010 - Modern Construction Materials
- NPTEL MOOC course on Basic Construction Materials
- NPTEL MOOC course on Maintenance and Repair of Concrete Structures

Awards Received

- Institute Research and Development Award (Mid-Career category) from IIT Madras 2022-23
- Excellence in Corrosion Science & Technology Award, NIGIS Corrosion Awareness Awards, 2019 (NACE International – Gateway India Section)
- Excellent Public Sector Laboratory (as part of the group of corrosion laboratories in IIT Madras), NIGIS Corrosion Awareness Awards, 2019
- ICI - Ultratech Award for Outstanding Young Concrete Engineer – 2016
- My students received one national level Best PhD Thesis award, three national level Best MS thesis awards, and other awards from RILEM, ACI, NACE, IIT Madras, etc.

Professional Services

Associations/Agencies

- Member/Convener of various working groups of Bureau of Indian Standards (BIS)
- Life member of Indian Concrete Institute (ICI)
- Senior Member and Regional Convener (South Asia) of RILEM
- Exec. Committee Member of AMPP (formerly NACE International) India Chapter
- Member of *fib* (The International Federation for Structural Concrete)

Journals

- Reviewer of multiple Q1 journals
- Guest Editor, Indian Concrete Journal
- Guest Editor, Journal of Resilience and Sustainable Infrastructure, Taylor and Francis

Recent Select Papers (underscore indicate students)

1. 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*
2. 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)
3. 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*
4. 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, 103049Naveen Krishnan,
5. Mohandoss, P., **Pillai, R. G.**, and Gettu, R. (2021). "Determining bond strength of seven-wire strands in prestressed concrete." *Structures, Elsevier*, 33
6. 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)
7. 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
8. 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
9. 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
10. 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
11. 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

12. 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)
13. 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)
14. 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
15. 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
16. 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
17. **Pillai, R. G.**, Gettu, R., Santhanam, M., Rengaraju, S., Dhandapani, Y., Rathnarajan, S., and Basavaraj, A. S. (2019). "Service life and life cycle assessment of reinforced concrete systems with limestone calcined clay cement (LC3)." *Cement and Concrete Research,* Elsevier, 118(1347), 111-119
18. Dhandapani, Y., Sakthivel, T., Santhanam, M., Gettu, R., and **Pillai, R. G.** (2018). "Mechanical properties and durability performance of concretes with Limestone Calcined Clay Cement (LC3)." *Cement and Concrete Research*, Elsevier, 107
19. Gettu, R., **Pillai, R. G.**, Santhanam, M., Basavaraj, A. S., Rathnarajan, S., and Dhanya, B. S. (2018). "Sustainability-based decision support framework for choosing concrete mixture proportions." *Materials and Structures*, Springer, 51 (6)
20. Surana, S., **Pillai, R. G.**, and Santhanam, M. (2017). "Performance evaluation of curing compounds using durability parameters." *Construction and Building Materials,* Elsevier, 148