

Deepak K. KAMDE

Postdoctoral Researcher

Building Technology & Construction Management (BTCM) Division

Department of Civil Engineering

Indian Institute of Technology Madras (IIT Madras)

Chennai, Tamil Nadu, 600 036, India

Phone: +91 94442 17698; E-mail: deepak.kamde89@gmail.com



EARNED DEGREES

- **Doctor of Philosophy (Civil Engineering)** 2016 - 20
Indian Institute of Technology Madras (IIT Madras)
Chennai, Tamil Nadu, India
Thesis: *Electrochemical characteristics, bond behaviour, and service life of reinforced concrete systems with coated steel reinforcement and exposed to chlorides.*
- **Master of Technology (Structural Engineering)** 2012 - 14
Sardar Vallabhbhai National Institute of Technology (SVNIT)
Surat, Gujarat, India
Project: *Service life prediction model for reinforced concrete systems under chloride attack.*
- **Bachelor of Engineering (Civil Engineering)** 2008 - 12
Shri Ramdeobaba College of Engineering and Management (SRCOEM)
Nagpur, Maharashtra, India.

AWARDS AND RECOGNITIONS

- **Best Ph.D. Thesis Award 2021**, NACE International Gateway India Section
- **Best Paper Presentation Award** for ‘Service life extension of concrete structures by quarter-century’ in CORCON 2021, Mumbai, India, November 2021
- **Winner of Segment 2** (Durability and Life-Cycle Assessment in Urban and Marine Conditions), Poster Presentation on ‘Accelerated Testing and Service Life Estimation of Galvanic Anodes in Reinforced Concrete Systems’ at 75th RILEM Annual Week, Merida, Mexico, September 2021.
- **Institute Pre-doctoral Research Fellowship** at IIT Madras from June 2020 to December 2020
- **Guest Editor** of a Special Edition on ‘Corrosion Control in Concrete Structures’ of Indian Concrete Journal in November 2020
- **NACE Foundation India Scholarship** for the year 2019 (one among five winners in India)
- **NACE Graduate Student Book Store Award** for the year 2019 (one among seven winners worldwide)
- **President of NACE Gateway India Section (NIGIS) – South Zone Student Section** from July 2018 – June 2020
- **Best Paper Award**, for ‘Effect of exposure to UV rays on the performance of fusion-bonded-epoxy (FBE) coated steel rebars,’ *CORCON, an International Conference & Expo*, NIGIS, Mumbai, September 2019
- **Best Oral Presentation Award**, for ‘Electrochemical response and Service life estimation of RC structure with FBE coated steel rebars,’ *CORSYM, an International Corrosion Prevention Symposium for Research Scholars*, organized by NIGIS- SZ-SS, Chennai, March 2018
- **Convener of CORSYM 2018**, an *International Corrosion Prevention Symposium for Research Scholars* organized by NIGIS and attended by 100+ scholars

- Reviewer for ACI Materials Journal, Structural Concrete Journal, Indian Concrete Journal, Journal of Sustainable and Resilient Infrastructure

PATENT FILED

- Title: Assessment of Galvanic Anode Performance (GAP) for cathodic protection (CP) of reinforced concrete structures, *Inventors*: Radhakrishna G. Pillai and **Deepak K. Kamde**, Filed on September 19, 2019, Application number: 2019 4103 7729; [Status: First Examination Report Received].

INVOLVEMENTS IN STANDARD MODIFICATIONS

- * Submitted a fully revised “*IS 13620 - Fusion Coated Epoxy Coated Reinforcing Bars – Specification*” to Bureau of Indian Standards (BIS) committee CED 54.
- * Submitted recommendations on “*ASTM Standard A775 - Standard Specification for Epoxy-Coated Steel Reinforcing Bars*” to American Society of Testing and Materials (ASTM) to Committee A01.05.04.
- * Assisting in the revision of the chapters on *Materials* and *Durability* in the “*Indian Standard 456 - Plain and reinforced concrete – Code of Practice*”
- * Preparing the new Indian Standard for “*Test methods to estimate the chloride thresholds of various steels embedded in concrete systems*”
- * Preparing the new Indian Standard for “*Test methods to estimate the long-term performance of sacrificial anodes in reinforced concrete systems*”.

PUBLICATIONS

Scopus ID: 57204669135

Refereed Journal Papers

Published

- RJ10 **Deepak K. Kamde**, Sylvia Kessler, and Radhakrishna G. Pillai “Condition assessment of reinforced concrete systems with fusion-bonded epoxy-coated rebars,” *Corrosion Journal*, NACE International, Vol. 77(12), <https://doi.org/10.5006/3786> [IF: 1.927]
- RJ9 **Deepak K. Kamde**, Karthikeyan Manickam, Radhakrishna G. Pillai, and George Sergi, “12-year Long Performance of Galvanic Anodes in Reinforced Concrete Systems,” *Journal of Building Engineering*, Elsevier, Vol. 42, 103049, [10.1016/j.job.2021.103049](https://doi.org/10.1016/j.job.2021.103049) [Impact Factor (IF): 5.318]
- RJ8 Naveen Krishnan, **Deepak K. Kamde**, Zameel D. Veedu, Radhakrishna G. Pillai, Dhruvesh Shah, and Rajendran Velayudham (2021) “Long-term performance and life-cycle-cost benefits of cathodic protection systems in reinforced concrete systems,” *Journal of Building Engineering*, Elsevier, Vol. 42, 102467, <https://doi.org/10.1016/j.job.2021.102467> [IF: 5.318]
- RJ7 **Deepak K. Kamde** and Radhakrishna G. Pillai (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, Vol. 277, 122314, <https://doi.org/10.1016/j.conbuildmat.2021.122314> [IF: 6.141]
- RJ6 Manu Harilal, **Deepak K. Kamde**, Sudha Uthaman, Rani P. George, Radhakrishna G. Pillai, John Philip, and Albert, S.K. (2021), “Use of nanoparticles, fly ash and corrosion inhibitors to enhance the corrosion resistance of concrete structures,” *Construction and Building Materials*, Elsevier, Vol. 274, 122097, <https://doi.org/10.1016/J.CONBUILDMAT.2020.122097> [IF: 6.141]
- RJ5 **Deepak K. Kamde**, Marc Zintel, Sylvia Kessler, and Radhakrishna G. Pillai (2021) “Performance indicators and specifications for fusion-bonded-epoxy (FBE) coated steel rebars in concrete,” *Journal on Sustainable and Resilient Infrastructure*, Taylor and Francis, [10.1080/23789689.2020.1871539](https://doi.org/10.1080/23789689.2020.1871539) [IF: 1.458]
- RJ4 Arya E. Kandiyil, Varghese A. Ittyeipe, **Deepak K. Kamde**, and Dhanya Vinod (2020) “Service life of RC systems with cement polymer composite coated steel reinforcement,” Special issue on *Corrosion Control in Concrete Systems (C3S)*, *Indian Concrete Journal*, Vol. 94 (11) [IF: 0.27]
- RJ3 **Deepak K. Kamde** and Radhakrishna G. Pillai (2020) “Effect of ultraviolet exposure on corrosion performance and service life of Fusion-Bonded-Epoxy (FBE) coated steel rebars,” *Corrosion Journal*, NACE International, Vol. 76(9), <https://doi.org/10.5006/3588> [IF: 1.927]

- RJ2 **Deepak K. Kamde** and Radhakrishna G. Pillai (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, Vol. 237, 117616, <https://doi.org/10.1016/j.conbuildmat.2019.117616> [IF: 4.419]
- RJ1 **Deepak K. Kamde**, Kondraivendhan Balakrishnan, and Satish Desai. (2015) “Service life prediction model for reinforced concrete structures under chloride ingress,” *Advances in Structural Engineering*, Springer, pp 145-155, <https://doi.org/10.1007/978-81-322-2187-6>

In review

- RJ* **Deepak K. Kamde** and Radhakrishna G. Pillai “Service life of concrete systems with Cement-Polymer-Composite (CPC) coated steel rebars,” *Structures*, submitted on June 25, 2021. [IF: 2.983]

Manuscripts in Preparation

- * **Deepak K. Kamde**, Dyana Joseline, Sripriya Rengaraju, Jayachandran Karuppanasamy, and Radhakrishna G. Pillai, “Factors affecting the performance of corrosion inhibitors as admixtures to enhance the service life of concrete structures,” *Corrosion*, NACE. [IF: 1.927]
- * **Deepak K. Kamde** and Radhakrishna G. Pillai, “Short-term test method for assessing the long-term performance of sacrificial anodes in concrete systems,” *Corrosion*, NACE. [IF: 1.927]
- * **Deepak K. Kamde**, Sripriya Rengaraju, Dyana Joseline, and Jayachandran Karuppanasamy, and Lakshman Neelakantan, and Radhakrishna G. Pillai, *dedicated to Prof. David Trejo* “Factors affecting the electrochemical response and chloride threshold testing of steel-cementitious systems,” *Cement Concrete Composites* [IF: 7.5]
- * Karthikeyan Manickam, **Deepak K. Kamde**, and Radhakrishna G. Pillai, “Assessing long-term performance of galvanic anodes in reinforced concrete systems using a short-term test method,” *Construction and Building Materials*, Elsevier [IF: 4.419]
- * **Deepak K. Kamde**, Zameel D. Veedu, Dhruvesh Shah, Jayachandran Karuppanasamy, Sankar V., and Radhakrishna G. Pillai, “A framework for preventive maintenance and durable repair of reinforced concrete bridges along the coast,” *Journal of Performance of Construction Facilities*, ASCE [IF: 1.542]

Book Chapter published

- **Deepak K. Kamde**, Dyana Joseline, Sripriya Rengaraju, Jayachandran Karuppanasamy, and Radhakrishna G. Pillai, “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.

Refereed Conference Papers (RC)

- RC10 **Deepak K. Kamde**, Naveen Krishnan, Radhakrishna G. Pillai, George Sergi, Dhruvesh Shah, and Rajendran Velayudham, “8-year performance of cathodic protection systems in reinforced concrete slabs and life-cycle cost benefits,” *Proceedings of the RILEM Spring Convention*, Rovinj, Croatia, April 2019.
- RC9 **Deepak K. Kamde** and Radhakrishna G. Pillai “Effect of exposure to UV on the performance of fusion-bonded-epoxy (FBE) coated steel rebars,” *Proceedings of the CORCON 2019*, NACE, Mumbai, Sept 23. – Sept. 26, 2019 (**Best Paper Award**).
- RC8 **Deepak K. Kamde**, Dubey A., Lavangia R., Ram K., and Radhakrishna G. Pillai “Effect of replacement level of GGBFS and microslag on diffusion coefficients of concrete,” *Proceedings of the 3rd R. N. Raikar Memorial International Conference & Gettu-Kodur International Symposium on Advances in Science and Technology of Concrete (RNR)*, American Concrete Institute - India Chapter, Mumbai, India, December 2018.
- RC7 Dhanya B. S., Varghese A. I., Rudhan A., Ajayan A., Malavika S., and **Deepak K. Kamde** “Effect of surface preparation on the corrosion resistance of cement polymer composite coated steel reinforcement,” *Proceedings of the 3rd RNR*, American Concrete Institute - India Chapter, Mumbai, India, December 2018.

- RC6 **Deepak K. Kamde** and Radhakrishna G. Pillai “Effect of Corrosion Level on Bond Performance of Cement Polymer Composite (CPC) Coated Rebar,” *Proceedings of the ICCRRR (International Conference on Concrete Repair, Rehabilitation, and Retrofitting)*, Cape Town, South Africa, November 2018.
- RC5 **Deepak K. Kamde** and Radhakrishna G. Pillai “Performance assessment of sacrificial anodes for cathodic protection of reinforced concrete structures,” *Proceedings of the ICCRRR*, Cape Town, South Africa, Nov. 2018.
- RC4 Dyana Joseline, **Deepak K. Kamde**, Sripriya Rengaraju, and Radhakrishna G. Pillai, “Residual Service Life Estimation and its Importance for Pretensioned Concrete (PTC) Bridges in Coastal Cities,” *Proceedings of the Sixth International Conference on the Durability of Concrete Structures (ICDCS)*, University of Leeds, Leeds, United Kingdom, July 3-5, 2018.
- RC3 **Deepak K. Kamde** and Radhakrishna G. Pillai “Corrosion performance of fusion-bonded-epoxy coated steel rebars,” *Proceedings of the ICACMS 2017*, RILEM, Chennai, Sept. 2017.
- RC2 **Deepak K. Kamde** and Radhakrishna G. Pillai “Effect of surface preparation on the performance of Cement Polymer Composite (CPC) coatings for steel in concrete structures,” *CORROSION 2017*, NACE, New Orleans, USA, March 2017.
- RC1 **Deepak K. Kamde**, Kondraivendhan B, and Satish N. D. “Service life Prediction model for reinforced concrete structures under chloride ingress,” *Proceedings of the 13th Biannual Structural Engineering Convention 2014*, Indian Institute of Technology Delhi, Dec. 2014.

Other Conference Papers and Presentations

- OC11 Deepak K. Kamde, Jayachandran Karupanasamy, Radhakrishna G. Pillai, Juby M., Sankar V., Zameel D. Veedu, and Dhruvesh Shah, “Service life extension of a coastal bridge by quarter-century,” *CORCON 2021*, NIGIS, Mumbai, India (**Best Presentation Award**).
- OC10 **Deepak K. Kamde** and Radhakrishna G. Pillai “Service life of concrete systems with coated steel rebars,” *Poster presentation at ACI convention*, Chicago, USA, October 2020.
- OC8 Krishan N., **Deepak K. Kamde**, and Radhakrishna G. Pillai “Cost-benefit analysis of reinforced concrete repair with and without sacrificial anodes,” *Proceedings of the 3rd R. N. Raikar Memorial International Conference*, Mumbai, India, Dec. 2018 (only presentation).
- OC7 **Deepak K. Kamde** and Radhakrishna G. Pillai “Development of the short-term test method to assess the performance of sacrificial anode for cathodic protection of concrete structures,” *Proceedings of the CORCON 2018*, NACE, Jaipur, Sept. 30 – Oct. 3, 2018
- OC6 Zameel D. V., Naveen K., **Deepak K. Kamde**, and Radhakrishna G. Pillai “Effect of concrete resistivity on the performance of SACP anodes,” *Proceedings of the CORCON 2018*, NACE, Jaipur, Sept. 30 – Oct. 3, 2018. (only presentation).
- OC5 **Deepak K. Kamde** and Radhakrishna G. Pillai “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 Presentation Award**).
- OC4 **Deepak K. Kamde** and Radhakrishna G. Pillai “Short-term test methods to evaluated chloride threshold of CPC coated rebars,” *Proceedings of the CORCON 2017*, NACE, Mumbai, Sept. 2017.
- OC3 **Deepak K. Kamde** and Radhakrishna G. Pillai “Effect of surface treatment on the performance of cement-polymer-composite (CPC) coatings for steel in concrete structures,” *Proceedings of the CORCON 2016*, NACE, Delhi, Sept. 2016.
- OC2 **Deepak K. Kamde** and Anand Hulagabali, “Comparative study for the design of single-span bridge using AASTHO-LRFD and Indian standard method,” *Proceedings of the International Conference on Advances in Engineering and Technology*, Nagpur, Maharashtra, India, 2014.
- OC1 **Deepak K. Kamde**, Anand Hulagabali, and Sharan Basava, “Three-dimensional steady-state finite-difference flow model – a case study,” *International Conference on Emerging Trends in Civil and Mechanical Engineering*, Siliguri, West Bengal, India, 2013. Also, published in IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE) e-ISSN: 2278-1684, ISSN: 2320-334 pp 40-44.

PROFESSIONAL MEMBERSHIPS

1. NACE International (Student-to-Professional member since November 2015 – Reg. No. 930208)

- Committee member of TEG 043X (Reinforced Concrete: Cathodic Protection) and TEG 053X (Reinforced Concrete: Design, Evaluation, and Remediation).
 - Organized a national level story writing competition, ‘Corrosion in Public (CiP)’ during January 2020.
 - Key organizer for a national level one-day symposium on ‘Interpretation of Electrochemical Response from New-age-steel-cementitious Systems (ERNS)’ during January 2020.
 - Served as President of NIGIS-SZ SS from July 2018 to June 2020.
 - Organized a national level seminar C3S during June 2019.
 - Served as Convener for an international symposium - CORSYM 2018.
 - Technical Editor for proceedings of CORSYM 2018.
 - Key volunteer in organizing various international and national NACE events like CORCON 2015, 2016, 2017, and 2018 (with more than 200 presentations and 600 participants); C3S 2016, 2017, 2018 (with more than 100 participants); and CORROSION 2017.
 - Reviewed the conference papers of CORCON 2016 & 2017.
 - Volunteered for running the technical session and a mini-camp for 55 high school students during CORROSION 2017, New Orleans, USA.
2. ICI (Indian Concrete Institute) (Lifetime membership No. 11316)
 - Key volunteer for one-day seminar on corrosion performance of PT structures held at IIT Madras during May 2019.
 - Key organizer of a workshop on ‘Cathodic protection – past, present, and future’, October. 2018.
 - Key organizer of national/international workshops - C3S 2016, 2017, and 2018.
 3. RILEM (Executive member since 2017; Reg. No. 34304)
 - Member of TC ECS: Assessment of electrochemical methods for corrosion of steel in concrete
 - Key member in organizing the 35th RILEM week (ICACMS) 2017.
 - Key organizer of 2nd international workshop on C3S 2017.
 4. ASTM International (Participating member since 2020; Reg. No. 2272834)
 - Member of Committee A 01 on Steel, Stainless Steel and Related Alloys.
 - i) Submitted recommendations on modification of standard specifications for FBE coated rebars.
 - Member of Committee C01: Concrete and Concrete Aggregates

PROFESSIONAL EXPERIENCE

Postdoctoral researcher (December 2020 – present)

- Project Manager: managing project staff to run the corrosion laboratory at IIT Madras
- Actively mentoring M.S./Ph.D. students on following:
 - Sharpening experimental for long-term performance of sacrificial anodes in protecting reinforced concrete systems (*part of a M.S. and Ph.D. thesis*).
 - Sharpening experimental for Electrochemical characteristics of metallic coated reinforcements for concrete systems (*part of Ph.D. thesis*).
 - Improvement on their presentation, communication, and technical writing skills.
- In-charge of a few research projects to achieve the target of the following research projects:

Research projects involved

Present work

- ‘Corrosion assessment, health monitoring, and service life extension of Sardar Vallabhbhai Patel (SVP) Stadium-A Sport Heritage Structures, Ahmedabad, Gujarat, India, sponsored by World Heritage Funds. *SVP stadium is about 60-year-old stadium built with folded plates structures. I was lead researcher in condition assessment on field and investigation of field specimens in laboratory. I was found that the inadequate cover depth, carbonation of concrete, and a few maintenance issues led to corrosion of rebars. For this a pilot study is planned to evaluate possible solution. Then, repair recommendations will be prepared.*
- ‘Corrosion assessment, health monitoring, and service life extension using cathodic protection of Chajja made of reinforced lime mortar’, at Rashtrapati Bhavan, RB, official residence of President of India.

Chajjas of RB were prepared with highly porous lime mortar. However, due to carbonation and moisture availability led to corrosion of rebar in chajjas. I was involved in condition assessment on field. Challenges faced due repair recommendations were 'no electrical connection' between rebars, light weight of existing chajja, and corrosion of rebars. For this a pilot study was conducted to evaluate possibility of use of novel hybrid anodes and its performance. Repair with concrete with light weight and hybrid anodes were recommended and is being implemented.

- 'Evaluation of Sacrificial Anode Cathodic Protection (SACP) systems for reinforced concrete applications.', sponsored by Vector Corrosion Technologies, Canada and India.
In this project, I and my supervisor have developed a test method to assess the long-term performance of galvanic anodes in a short time - registered for patent. Also, the effect of relative humidity and resistivity on the performance of galvanic anodes were quantified and a design strategy was proposed. In addition, in-service degradation mechanisms of galvanic anodes are proposed by investigating slabs with galvanic anodes for 12 years. The research is continued to evaluate performance of galvanic anodes for long term.
- 'Performance evaluation inhibitors on corrosion resistance of steel-concrete systems.', sponsored by various Chemical Industries (Sika India Pvt. Ltd., Cera-Chem Pvt. Ltd., Concrete Additives and Chemicals Pvt. Ltd., and CHRYSO India Pvt. Ltd.)
In these projects, various test methods used for corrosion inhibitors for concrete were investigated and many of them were found not valid. Therefore, durability-performance indicators and associated test methods to determine them are proposed. The effect of these inhibitors on durability of concrete was also quantified.

Completed research projects

- 'Assessment, prevention, and protection of RC structure with coated rebars', sponsored by the Department of Science and Technology.
In this project, we developed corrosion assessment test methods for RC systems with uncoated and coated steel rebars embedded in highly resistive systems. Also, durability characteristics of concrete, coating, and steel-coating-concrete interface were investigated. Based on finding, recommendations were submitted to modify the IS 13620 and ASTM A775. This project also focussed on corrosion protection strategies using sacrificial anode
- Service life estimation of a 6-year-old bridge built with cement polymer composite coated steel rebars and exposed to chloride environment.
- 'Service life prediction and suggestion of the type of steel and concrete to achieve 200+ years of service life of tunnel with rock bolt for the structure with national importance.
- Condition assessment of the Industrial Development Bank of India (IDBI), Chennai, was done and actively involved in the condition assessment of the building and prepared recommendations for corrosion protection and strengthening of the structure.
- 'Condition assessment of various buildings in IIT Madras': repair using cathodic protection systems was recommended, and the projects are being monitored for their performance.
- 'Corrosion performance of CPC coated steel rebars': interlaboratory research project with Rajiv Gandhi Institute of Technology Kottayam.

TEACHING EXPERIENCE

Half-Time Teaching Assistantship

- Assisted in conducting laboratory sessions for Concrete Technology (2013 – 2014)

Assistant Professor at RK University, Rajkot, Gujarat, (June 2014 to September 2015)

- Taught UG and PG courses: Structural Analysis I, II, and III (UG), Concrete Technology (UG), Advanced Structural Analysis (PG).
- Modified syllabus for Structural analysis II, III, and Advanced structural Analysis.
- In-charge of various administrative posts and responsibilities.
- Guided two under-graduate project groups and one M. Tech. Student for their academic projects.

Graduate Teaching Assistant (January 2016 to June 2020)

- Assisted Dr. Pillai in preparing NPTEL course materials, assignment questions, short quizzes for MRCF (Maintenance and Rehabilitation of Constructed Facilities) during June 2018 to June 2019 and HTRA assistance during Jun.-Dec. 2018.
- Instructor for 'Material testing lab' for the graduate course during Jan.-Jul. 2017 and Jan.-Jul. 2018.

- Assisted Dr. Pillai in preparing course material for the course on Durability of Concrete under Quality Enhancement in Engineering Education (QEEE) program.
- Instructor for Material testing lab for the undergraduate course during Jul.-Nov. 2016 and Jul. - Nov. 2017.

Project Associate at IIT Madras, Chennai (September 2015 to December 2015).

- ‘Estimation of the residual service life of a reinforced concrete bridge with CPC coated steel rebars’. *This work quantified the effect of inadequate surface preparation on chloride threshold and corrosion-free service life of RC structure.*
- Estimation of chloride threshold for a steel-concrete interface for the concrete mixed with various inhibitors using accelerated corrosion test. *This was first ever trial to determine chloride threshold using lollipop specimens. I continued this work parallel to my Ph.D. work.*

LECTURES DELIVERED / OUTREACH

- Deterioration in Structures: Environmental Effects, Online Short-Term Training Program, Deterioration, Damage Assessment and Strengthening of Structures, S. V. National Institute of Technology Surat, India (scheduled on December 29-30, 2021)
- Corrosion mechanisms, prevention, and protection in RC structures, *Webinar on repair and rehabilitation of RC structures*, IICM, Ranchi, Jharkhand, December 17, 2021.
- Corrosion of coated rebars in concrete structures, 5th 1-day seminar on Corrosion Control in Concrete Structures (C3S), NIGIS and IIT Madras, December 4, 2021
- Assessment of steel corrosion in concrete systems, workshop on conservation of 20th century reinforced concrete (RC) structures, Sardar Vallabhbhai Patel Stadium, Ahmedabad, India, Comprehensive Conservation Management Plan, Keeping it Modern – 2020 Grant, Getty Foundation, November 26-27, 2021
- Corrosion mechanisms of steel rebars in concrete systems, *Faculty development program (FDP)*, KL University, Telangana, June 2021.
- Strategies to repair and rehabilitate concrete structures, *Webinar for industry personnel*, IICM, Ranchi, Jharkhand, May 2021.
- Corrosion mechanisms in uncoated and coated rebars, *Webinar for industry personnel*, IICM, Ranchi, Jharkhand, May 2021.
- Corrosion of coated rebars and prestressing strands, *FDP*, Toc H. Institute of Science and Technology, Kerala, April 20, 2021.
- Concerns associated with steels in construction, *FDP*, Mizoram University, November 2020.
- Performance of coated steel rebars, *Webinar for industry personnel*, Coal India Limited, IICM, Ranchi, Jharkhand, November 2020.
- Corrosion in reinforced concrete systems, *Online AICTE STTP* at Bannari Amman Institute of Technology, October 2020.
- Corrosion in reinforced concrete systems, *Guest talk* at RK University, Rajkot, September 2020
- Corrosion mechanisms of coated steel rebars in concrete, *Online course*, Coal India Limited, Ranchi, August 2020.
- Corrosion in concrete systems, *Webinar for practitioners*, Tech Launchpad, August 2020.
- Corrosion and its control, *FDP* at G. H. Raisonni College of Engineering, Nagpur, India, July 2020.
- Corrosion performance of reinforcing steel rebars used in reinforcing steel rebars in concrete construction in India, *FDP* at R. R. Reddy College, Bangalore, India, June 2020.
- Concerns about steel rebars used in concrete construction in India, *FDP* at CSIR, SERC, Chennai, India, November 2019.
- Corrosion assessment of CPC and FBE coated steel embedded in concrete structures embedded, *21-day workshop*, CSIR, SERC, Chennai, July 2019.
- Corrosion performance CPC coated steel rebars in concrete structures – a case study, *1-day workshop*, C3S 2019, IIT Madras, Chennai, India, June 2019.
- Demonstration of working principle of cathodic protection in concrete structures, *A one-day workshop on C3S 2018*, IIT Bombay, October 2018.
- Corrosion RC structures with coated rebars, *Quality Concrete Construction*, METCON TMT Bars, Kochi, May 2018.

2. Hands-on training for corrosion assessment techniques, *ECT 2018*, BSAR Crescent University, Chennai, India, March 2018.
1. Chloride-induced corrosion and mechanism of corrosion of rebars in RC structures with coated rebars, *CEA Fest - National level annual technical program*, IITM, India, January 2018.

ORGANISING PROFESSIONAL EVENTS

1. Key organizer for a national level story writing competition, ‘Corrosion in Public (CiP)’ during January 2020.
2. Key organizer for national level one-day symposium on ‘Interpretation of Electrochemical Response from New-age-steel-cementitious Systems (ERNS)’ during January 2020.
3. Key organizer for a national level seminar Corrosion Control in Concrete Structures during June 2019.
4. Key organizer of a workshop on ‘Cathodic protection – past, present, and future’ during October. 2018, held at IIT Madras and IIT Bombay
5. Convener for an international symposium on corrosion prevention and control – CORSYM 2018.
6. Key volunteer in organizing various international and national NACE events.

CERTIFICATION PROGRAMMES

1. Participated in CPD course on Repair and Rehabilitation of Concrete Structures, held at University of Cape Town, South Africa, during Nov. 2018.
2. Attended 1st global meet on Cathodic Protection, organized by NIGIS, held at Delhi, India, during Jan. 2018.
3. Participated in GIAN course on ‘Advanced Design of Bridge and Construction,’ during June 2016 held at IIT Madras, Chennai, India.
4. Participated in a short-term course on ‘Advanced Concrete Technology (ACT),’ organized by IIT Madras and secured ‘A’ grade, held at Chennai during Dec. 2015.
5. Attended a workshop on ‘Recent Advances in Civil Engineering Material,’ organized by SVNIT Surat, Sept.- Oct. 2014.
6. Participated in the International Workshop on ‘Emerging Trends in Earthquake Engineering and Structural Dynamics,’ organized by IIT Delhi, December 2014.
7. Participated in a short-term training program on ‘Structural Diagnosis, Repair and Retrofitting of RCC Structures’ (Under TEQIP-II), June 2013, held in SVNIT, Surat, India.

INTERNSHIPS

1. 45 days (December 2017 to January 2018): fully funded winter internship by JASSO at the Nagaoka University of Technology at Nagaoka, Niigata, JAPAN.
2. 45 days (May - June 2011): fully funded summer internship with Gujarat Maritime Board, for the construction of On and offshore construction of RORO terminal, Gujarat, INDIA
3. 45 days (June – July 2011): summer training at Madhusudan Agrawal Constructions for the construction work of G + 2 commercial building, at Bilaspur, Chhattisgarh, INDIA.

EXTRACURRICULAR ACTIVITIES

- Volunteer for teaching students at government schools in rural areas of Tamil Nadu under “*One Lab – One School*” program.
- Key organizer/volunteer for various technical and cultural programs at SRKNEC, Nagpur.
- Lead member in organizing Structural Engineering Convention 2012 at SVNIT Surat.
- One among top 15 students in 12th AISSE in Chhindwara district
- Selected to showcase science model in National level Jawaharlal Nehru National Science Exhibition held at KV Jabalpur in June 2005.
- Participated in High-Altitude Trekking Programme held in Himachal Pradesh in May 2004.
- 1st runner up as Best Student of Chhindwara district for the year 2002, organized by Rotary Club and ACC Cements.

REFERENCES

Dr. Radhakrishna G. Pillai
Associate professor
Dept. of Civil Engineering
IIT Madras Chennai
TN 600 036, INDIA
pillai@civil.iitm.ac.in

Prof. Ravindra Gettu
V.S. Raju Institute Chair Professor
Dept. of Civil Engineering
IIT Madras, Chennai
TN 600 036, INDIA
gettu@iitm.ac.in

Prof. Manu Santhanam
Professor
Dept. of Civil Engineering
IIT Madras, Chennai
TN 600 036, INDIA
manus@civil.iitm.ac.in