

Curriculum Vitae

Assistant Professor
Department of Civil Engineering
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EDUCATION

- **Ph.D. in Civil Engineering (2013-2019)** **9.00/10**
Indian Institute of Technology Madras, Chennai, Tamil Nadu, India
Dissertation title: “*Assessment of transmission length and bond strength of pretensioned concrete systems*”
- **M.E. in Structural Engineering (2011-2013)** **8.74/10**
Anna University::Chennai Regional Centre, Madurai, Tamil Nadu, India
Thesis title: “*Flexural behaviour of RC beams strengthened with basalt fibre reinforced concrete*”
- **B.E. in Civil Engineering (2007-2011)** **8.43/10**
Thiagarajar College of Engineering, Madurai, Tamil Nadu, India
Thesis title: “*Analysis and Design of Pre-Engineered Building using STAAD Software and Detailed Case Study of PEB in and around Madurai*”
- **Higher Secondary School (2006-2007)** **91.75%**
Vidhya Vikas Higher Secondary School, Tiruchencode, Tamil Nadu, India
- **Secondary School (2004-2005)** **90.40%**
Govt Girls Higher Secondary School, Aranthangi, Tamil Nadu, India
(Secured 2nd Rank in school)

SCHOLARSHIPS, AWARDS & ACHIEVEMENTS

- Half-Time Research Assistantship, MHRD, Govt. of India 2013- 2018
- Won the **Outstanding Poster Award – First Place** in ACI 123 Concrete Research Poster Session at the ACI Convention and Exposition Spring 2018 in Salt Lake City, UT, USA, March 24 – 28th, 2018.
- Won the **All-Round Performance Award in Ph.D. Category** – Civil Engineering Association, IIT Madras, 2018 - for demonstrating good academic performance, leadership in Co-/Extra-curricular/volunteer activities at divisional and/ or departmental levels.
- **Gold Medallist and University Rank Holder**– for the academic year 2011-2013
 - Secured 1st Rank in M.E. structural engineering at Anna University::Chennai Regional Centre, Madurai, India.
 - Secured 6th Rank overall under Anna University Chennai, India.

REFEREED JOURNALS

- JP 1. Mohandoss P.**, Pillai R. G., and Sengupta A.K., “Effect of compressive strength of concrete on transmission length of pretensioned concrete systems”, *Structures*, 23 February 2020, pp. 304-313 [IF: 1.646].
- JP 2. Mohandoss P.**, Pillai R. G., and Sengupta A.K. “Transmission length of pretensioned concrete system: comparison of codes and test data”, *Magazine of Concrete Research*, 17, September 2019, pp. 881-893 [IF: 1.488].
- JP 3. Gopinath S., Mohandoss P., Murthy A. R., Iyer N. R.**, “Modelling of RC beams strengthened with basalt reinforced concrete”, *Journal of Institute of Engineers (India) Series A*. 98 (3), September 2017, pp. 285-291, [h5 indexed Journal].
- JP 4. Gopinath S., Murthy A. R., Iyer N. R. and Mohandoss P.**, “Behaviour of reinforced concrete beams strengthened with basalt textile reinforced concrete”, *Journal of Industrial Textiles*, 44 (6), January 2014, pp. 924-933 [IF: 1.283].
- ** Mohandoss P.**, Pillai R. G., and Gettu R., “Determination of bond strength in pretensioned concrete systems” (*Draft ready; to be submitted to Engineering Structures journal*)

INTERNATIONAL CONFERENCE PAPERS

* Indicates the presenter

- CP 5. Mohandoss P.***, Pillai R.G., and Gettu R., “Effect of prestress on the bond strength of pretensioned concrete systems”, 3rd R. N. Raikar Memorial International Conference & Gettu-Kodur International Symposium on Advances in Science & Technology of Concrete, Mumbai, India, December 14 - 15, 2018.
- CP 6. Mohandoss P.***, and Pillai R. G., “Effect of prestress on the bond strength of pretensioned concrete systems”, International Conference on Advances in Construction Materials and Systems (ICACMS) & 71st RILEM Week, Chennai, India, September 3-8, 2017.
- CP 7. Mohandoss P.***, Pillai R. G., and Sengupta A. K., “Comparison of prediction models for transmission length and shear capacity of pre-tensioned concrete systems”, 4th Asian conference on Ecstasy in Concrete (ACECON), Kolkata, India, October 08-10, 2015.
- CP 8. Mohandoss P. ***, Gopinath S., Murthy A.R., and Iyer N.R., “Numerical modelling of RC beams with basalt fibre reinforced polymer”, International Conference on Advances in Engineering and Technology, Dr. M.G.R. Educational and research institute university, Chennai, India, March 15, 2013.

NATIONAL CONFERENCE PAPERS

- 1. Mohandoss P.*** and Pillai R. G., “Bond performance of pretensioned concrete system”, 10th Structural engineering convention (SEC), Chennai, India, December 21-23, 2016.
- 2. Mohandoss P.***, Gopinath S., Murthy A. R., and Iyer, N.R., “Flexural behaviour of RC beams strengthened with Basalt Reinforced concrete”, 5th Innovations in civil engineering (ICE), Kumaraguru college of Technology, Coimbatore, India. April 19, 2013.

INTERNATIONAL CONFERENCE PRESENTATIONS

- 1. Mohandoss P.***, Pillai R. G., Gettu R., and Sengupta A. K. “Assessment of the bond strength of pre-tensioned strands in concrete”, Concrete Research in India, Mumbai, India, December 14th, 2018. (Poster presentation).

2. **Mohandoss P.***, Pillai R. G., Gettu R., and Sengupta A. K. “Strand-Concrete Bond in Pretensioned Concrete Systems (PTC)-Mechanisms and Laboratory Testing” the ACI 123 Concrete Research Poster Session at the Spring 2018 ACI Convention and Exposition in Salt Lake City, UT, USA, 24 – 28 March, 2018. (Poster presentation).
3. **Mohandoss P.***, Kompella S. K., Gettu N., and Pillai R. G., “A Study on the bond performance of pre-tensioned concrete system”, International Conference on Advances in Construction Materials and Systems (ICACMS) & 71st RILEM Week, Chennai, India, September 3 – 8, 2017. (Poster presentation).
4. **Mohandoss P.***, Kompella S. K., Maheswari S. K., Nair S. A. O., and Pillai R. G., “Factors influencing the bond behaviour of pretensioned concrete system” Gordon research conference (GRC), Hong Kong, China, July 31 – August 8, 2016. (Poster presentation).
5. **Mohandoss P.***, Pillai R. G., Gettu R., and Sengupta A. K. “Effect of compressive strength of concrete on transmission length of pretensioned concrete” the ACI Open Topic Session at the Spring 2018 ACI Convention and Exposition in Salt Lake City, UT, USA, 24 – 28 March, 2018 (Oral Presentation).
6. Kompella S. K.*, **Mohandoss P.**, Gettu N., and Pillai R. G., “Enhancing the bond strength of prestressed concrete sleepers”, Concrete Research in India, Research Scholar Symposium, Mumbai, India, December 14 -15, 2018. (Poster presentation).
7. 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, 26-30 March, 2017. (Oral presentation).

INVITED TALKS

- Delivered a lecture in 6-day Faculty Development Technical Programme on the topic “Anchorage zone reinforcement, transfer bond length and bond mechanism” conducted by the Department of Civil Engineering, Rajalakshmi Engineering College (Jointly sponsored by Anna University), 3-10 June, 2019.
- Delivered a talk on “Fundamentals of pre-tensioned concrete systems” during the Research Expo 2018, hosted by Civil Department, CEA Fest, IIT Madras.

RESEARCH INTERESTS

- Structural performance of prestressed concrete systems
- Mechanical characteristics of construction materials
- Repair and strengthening of conventionally reinforced and prestressed concrete structures
- Effect of corrosion on structural performance of reinforced concrete structures

PROJECTS INVOLVED IN

- Assisting in the revision of IS 456 (2000)
 - Analysing the mechanical properties of high strength steel reinforcement
- Research Project on ‘Structural behaviour of corroding prestressed concrete systems and extension of service life using cathodic protection’ – Science and Engineering Research Board (SERB), Govt. of India, 2018-21
 - Leading the working team of the project
 - Design and fabrication of experimental setup and specimens
 - Experimental design to determine the effect of corrosion on flexural behaviour of pretensioned concrete members
- Performance assessment of concrete used for manholes in Karaikudi Municipal area
 - Collection of samples from manholes

- Testing the specimens to check the quality of materials used
- Reporting the test results and recommendations
- Performance evaluation of cementitious grout for applications in precast concrete construction
 - Evaluated and reported the fresh and mechanical properties
- Strand testing
 - Tested and reported the mechanical properties and surface characteristics of 3 and 7 wire prestressing strands
 - Tested the surface characteristics of 3-wire strands used in railway sleepers

TEACHING AND RESEARCH EXPERIENCE

• Assistant Professor	April 2020 - Present
• Senior Project Officer, IIT Madras	Sep 2019 – March 2020
• Project Officer, IIT Madras	Jan – Aug 2019
• Project Associate, IIT Madras	Oct 2018 – Jan 2019
• Research Scholar (Full time), IIT Madras	July 2013 - July 2018
• Graduate teaching Assistant, IIT Madras	July 2013 - July 2018
- Civil engineering materials and construction (CE 2330)	Jan – May 2016 Jan – May 2017
- Maintenance and Rehabilitation of construction facilities (CE 5120)	July – Nov 2016
• Undergraduate courses taught	
- Construction Materials lab (CE 3410)	July – Nov 2014 July – Nov 2015
• Graduate courses taught	
- Construction Materials Lab (CE 5090)	Jan – May 2014 Jan – May 2015
• Project student, CSIR – SERC	Oct 2012 – May 2013

Teaching Experience: received feedback score of 3.1 out of 4 in the teacher's evaluation form from about 40 undergraduate students on my guest lecturing on 'Composite Materials' in CE2330 course Department of Civil Engineering, IIT Madras.

NPTEL MOOC course on Maintenance and repair of concrete structures, Jan – May 2020

- Lead TA for the course & Liaising with the NPTEL staff
- Assisting in scheduling, preparing and organising the course materials and assignments.

Board of Studies: working as one of the team members in revising the curriculum of core and electives subjects for B.Tech and M.Tech regulations -2020, Department of Civil Engineering, NIT Tiruchirappalli.

EVENTS ORGANIZED / VOLUNTEERSHIP / PARTICIPATION

1. Lab Visit Coordinator

Actively organized and participated in Explaining experiments of Materials Performance of Civil Engineering Materials laboratory during divisional and CEA fest lab visits, IIT Madras, 2014-2018.

- 2. MS-Ph.D. Admissions**
Assisted in certificate verification for MS and Ph.D. Admission process, Department of Civil engineering, IIT Madras, May and November 2017.
- 3. Advanced Concrete Technology Workshop 2014 and 2015**
Assisted in conducting the Advanced Concrete Technology Workshop 2014 and 2015 as an Organizer. The 5-day workshop hosted technical sessions on concrete technology for faculty and students from several universities across south India. February 23 – 28, 2014; November 29 – December 04, 2015.
- 4. National Canoe Competition 2015**
Assisted in organizing the 1st National Concrete Canoe Competition (NCCC) 2015 as Volunteer, hosted by Civil Department, IIT Madras. Students from 20 universities across India participated with full scale concrete canoes evaluated on the basis of design, presentation and timed-rowing competition (in a towing tank).
- 5. CORCON 2015 – Session Co-ordinator**
Assisted in co-ordinating the technical symposium sessions and technical interactive forums as a Session Co-ordinator for the 3-day international conference and expo on corrosion (CORCON), December 2015.
- 6. Research Seminar – Lafarge 2016**
Assisted in organizing the research seminar, “Durability and long-term performance of concrete” conducted by IIT Madras and Lafarge India, Chennai, 22nd April 2016.
- 7. GIAN Course 2016**
Assisted in organizing the 10-days Gian course on **Advanced bridge design and construction**, IIT Madras, July 11- 23 2016. The course included technical lectures, lab visits, technical and interactive sessions.
- 8. NPTEL Modern Construction Material Course 2016 - 2018**
Assisted in evaluating the Modern Construction Material course final exam 2016-2018, Department of Civil Engineering, hosted by NPTEL, IIT Madras. Volunteering as one of the teaching assistants for the Modern Construction Material Course 2018.
- 9. Corrosion Control in Concrete Structures (C3S) Workshop 2016**
Assisted in conducting the 1st C3S Workshop as an Organizer, IIT Madras, August 5- 6, 2016. The 2-day workshop hosted technical sessions on basics of corrosion and mitigation techniques for faculty and students from several universities across India.
- 10. ICACMS 2017 – Core Co-Ordinator**
Assisted in coordinating an international conference sessions and cultural events for 5-day international conference on advances in construction materials and systems, 71st RILEM Week and ICACMS, September 3 – 8 2017.
- 11. ICACMS 2017 – Editing Committee**
Assisted in editing the conference proceedings of ICACMS 2017.
- 12. ICI – Symposium – Volunteer**
Volunteered an international symposium on Recent Advances in Concrete Construction and Preservation, 3rd K P Pradeep Symposium on Pioneering Science and Development for Construction, hosted by Indian Concrete Institute, December 18 2018.

13. ICI – IMPRINT 2019 – Organizer

Organised the first one day seminar on Structural and Durability Performance of Post-Tensioned Bridges and Buildings, hosted by Department of Civil Engineering, IIT Madras, 1st ICI – IMPRINT –April 12 2019.

14. NPTEL Maintenance and Repair of Concrete Structures 2020

Was the Lead TA for the course; assisted in preparing and organising the course materials and liaising with the NPTEL staff.

15. SPARC Workshop

Attended two days SPARC workshop on Sustainability and Durability of Concrete Structures with By-products and Recycled Materials, hosted by Department of Civil Engineering, IIT Madras, January 17-18, 2020.

16. E-Content Development for Higher Education

Attended 5 days online training programme on “E-Content Development for Higher Education” organised by National Institute of Technical Teachers Training and Research, NIT Tiruchirappalli, May 11 – 15, 2020

PROFESSIONAL MEMBERSHIP AND SERVICES

- Life-time member of the Indian Concrete Institute (ICI)
- Life-time member of the Society for Failure Analysis (SFA)
- Affiliate Member of RILEM, International Union of Laboratories and Experts in Construction Materials, Systems and Structures
- **Research Coordinator** – Construction materials research scholars’ group in BTCM Division, Department of Civil engineering, IIT Madras, from Feb 2016 – August 2016.
- **General Treasurer** – Structural engineering division, Department of Civil Engineering, Anna University Madurai, from 2011-2013.
- **University captain** – Anna University Tirunelveli in All India Inter-University Ball- Badminton Tournament held at Periyar University Salem, from 2010 - 2011.
- **UG Co-ordinator** - Department Magazine Committee, Department of Civil Engineering, Thiagarajar college of engineering, Madurai, from 2009 – 2011.
- **Peer Reviewer:** YCRETS (Young Concrete Researchers Engineers and Technologists Symposium) University of Witwatersrand, Johannesburg, South Africa
- **Peer Reviewer:** SCI indexed journals - *Structural Concrete, Sugar Tech, Construction Building Materials and CRC publications*
- Volunteer of One Lab – One School project undertaken by IIT Madras